The Semantics of the Prefix ZA- in Russian

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Hebrew Abstract
Abstract

The aim of this dissertation is to explore the semantic behavior of the perfectivizing verbal prefix ZA- in Russian and provide a formal semantic account for the range of meanings of ZA-prefixed verbs in the verbal lexicon of Russian and the pattern of their derivation. Many traditional works in the field of Russian aspectology (Avilova 1976, Tikhonov 1962) view the prefix ZA- (which is one of the eighteen verbal prefixes in Russian) as a grammatical device for shifting imperfective unprefixed verbs into perfective prefixed ones. While it is correct that all ZA-prefixed verbs in the lexicon are perfective, the prefix ZA- has additional semantic effects on the unprefixed verbs it applies to. In many cases, it visibly changes a lexical meaning of an input unprefixed verb and/or its lexical argument structure. Thus, ZA-prefixed verbs denote a wide range of meanings, many of which are divergent from the meanings of their unprefixed correlates. This study attempts to provide answers to the following research questions: 1) is the prefix ZA- a grammatical operator that derives perfective verbs out of imperfective unprefixed ones, or a derivational operator that that changes lexical meaning and/or argument structure of unprefixed verbs?; In general, what is a relation between semantics of perfectivization and semantics of the prefix ZA-?; 2) is there a way to predict which meanings of ZA- arise with which unprefixed verbs?; 3) are various meanings of ZA- related to each other and can they be narrowed down to a single invariant meaning?

The first chapter lays out a general theoretical framework for this dissertation. It provides an overview of grammatical aspect and the interaction between lexical and grammatical aspects in Russian (Mehlig 1985, Braginsky & Rothstein 2008, among others). In particular, chapter one introduces the division of lexical verbs in Russian into the four Vendlerian lexical aspectual classes (Vendler 1967) with respect to their perfective/imperfective status. Chapter one acquaints the reader with a neo-Davidsonian event-based account of verbal semantics (Parsons 1990, Landman 2000) and the relevance of the given account for the analysis of verbal prefixation in Russian, as manifested by Filip's (2003), Filip & Rothstein's (2006) theories of prefixation. Then, Krongauz's (1998) concept of a semantic network of prefixal meanings is introduced and research strategy for building such a network of meanings for the prefix ZA- is outlined.
Chapter two discusses various theoretical approaches to prefixation in Russian and provides a representative sample of previous proposals of the semantics of the prefix ZA- in the linguistic literature. Zaliznjak's (1995) account focuses on individuating separate particular meanings of ZA-, expressed by the ZA-prefixed verbs in the lexicon. Paillard's (1995) theory, on the other hand, focuses on defining an abstract invariant meaning of the prefix ZA-, shared by all ZA-prefixed verb forms in the lexicon. Janda 1986 provides an integrated analysis of the prefix ZA-, conducted in the framework of cognitive linguistics, which defines an invariant meaning of ZA-, its particular meanings and general transfer principles from an invariant meaning into the more specific ones. At the end of chapter two, I propose a division of ZA-prefixed verbs in the lexicon into three major categories – verbs, denoting a change in space (such as zajti – to walk in); verbs, denoting a change in some property of their theme (as in zagustett – to become thick) and verbs, denoting temporal changes (as in zagosovorit – to start talking). The first group expresses the spatial meaning of ZA-; the second group reflects the resultant meaning, while the third is associated with the inchoative meaning of ZA-.

Chapter three provides a detailed discussion of the spatial meaning, examining both spatial ZA-prefixed verbs and their imperfective correlates. The spatial ZA-prefixed verbs and their unprefixed input verbs are compared to each other with respect to their Vendlerian aspectual class, lexical meaning and argument structure. The results of comparison serve as basis for the formal analysis of the spatial meaning of ZA-, which draws upon Rothstein's (2004) theory of accomplishment verbs, outlined later on in the third chapter. It proposes to treat the prefix ZA- as an aspectual shift operator, which derives locative ZA-prefixed accomplishments from activity verbs. A concept of a locative accomplishment which diverges from Rothstein's (2004) theory of accomplishments, following a proposal by Tatevosov & Ivanov (2007), is discussed at length in the formal analysis section. Finally, chapter three proposes the By-Analogy-With-Prototype (BAWP) lexical coercion process, which works in tandem with the prefix ZA- and accounts for changes in lexical meaning and argument structure in some unprefixed input verbs.

Chapter four looks at a different group of ZA-prefixed verbs, which describe changes in the physical properties of their themes. As in chapter three, those ZA-prefixed verbs and their unprefixed correlates are examined and compared to each other with respect to the aforementioned factors. The formal analysis explains the
results of comparison by proposing that the given ZA-prefixed verbs denote yet another subtype of accomplishment verbs – resultant accomplishments. Similarly to locative accomplishments, resultant accomplishments have certain distinguishing features in their internal semantic structure, which are discussed in detail. The resultant ZA-shift operation that derives such accomplishments from activity verbs is also provided in the formal analysis section.

Chapter five deals with the inchoative ZA-prefixed verbs, which express a beginning of a new process or state of affairs. These verbs are analyzed as a distinct subtype of accomplishments verbs, which denote an establishment of an onset stage of activities (and states) (Landman 2007). The inchoative prefix ZA- is explained as an aspectual shift-operator that derives such inchoative accomplishments from imperfective activities and states.

Chapter six focuses on the interrelatedness of the three meanings of ZA-, outlined in the previous chapters. It examines alternations of the aforementioned meanings of ZA-, displayed in some ZA-prefixed verbs, and concludes that the prefix ZA- is sensitive to the presence of three participants in an event – goal, theme and temporal trace. These participants form a particular thematic hierarchy, which allows formulating a principle of matching the appropriate meaning of ZA- to a given unprefixed verb on the basis of its argument structure. Exceptions to this principle are discussed and explained. I further elaborate on the By-Analogy-With-Prototype (BAWP) operation and explain its contribution to expanding the range of ZA-prefixed verbs in the lexicon. Finally, chapter six proposes an invariant meaning of the prefix ZA- and the transfer rules from that meaning to its spatial, resultant and inchoative instantiations.

Chapter seven proposes a formal definition of the invariant meaning of ZA- as a unique aspectual shift operation and lays out a semantic network of the meanings of ZA-, which includes its invariant meaning and the detailed transfer rules to the specific ones. Chapter seven also discusses the relation between the prefix ZA- and perfectivity, proposing that the prefix ZA- sets conditions for applying the perfectivization operator in Russian, in spirit of Filip & Rothstein's (2006) account of perfectivization in Slavic languages and Rothstein's (2007) theory of telicity. Chapter seven presents some conclusions drawn from the current study and sketches a number of implications of the semantic analysis of ZA- and possible directions for further research.
"The fact of grammar, a universal train of language, is simply a generalized expression of the feeling that analogous concepts and relations are most conveniently symbolized in analogous forms. Were a language ever completely "grammatical," it would be a perfect engine of conceptual expression. Unfortunately, or luckily, no language is tyrannically consistent. All grammars leak."

Edward Sapir, Language, chapter 2.
Chapter I.

Introducing the Verbal Prefix ZA-.

1.1 Introduction

The ultimate goal of this dissertation is to provide a formal semantic account for the modus operandi of the verbal prefix ZA- in Russian. Such an account would allow predicting the pattern of interaction of ZA- with various verbs in the lexicon of Russian and the range of meanings of prefixed verbs, derived by the prefix ZA-. The semantic analysis of ZA-, devised in this work, is designed to appeal to a wide audience of linguists, who have an interest in the issues of aspectual semantics in Russian and their crosslinguistic implications. Though I presume that some readers are familiar with basic concepts of the Russian aspectology, I meant the current work to be comprehensible for both Slavists and general semanticists alike. Let me, then, provide some background about the aspectual verbal system in Russian. In a nutshell, all lexical verbs in Russian are classified as either perfective or imperfective verb forms. In general, imperfective verbs denote potentially partial situations and states of affairs, while perfective verbs describe complete ones. Most morphologically basic verbs in Russian are imperfective (Isačenko 1960, Forsyth 1970). Perfective verbs, on the other hand, are usually morphologically complex, derived from the imperfective ones by verbal perfectivizing prefixes. A puzzling fact about Russian, though, is that an application of the verbal prefixes to the imperfective verbs not only shifts them into perfectives, but in many cases modifies their lexical meaning and/or their argument structure. In Russian, there are overall as much as eighteen verbal prefixes (Isačenko 1960). One of these prefixes – the subject of this study – is the prefix ZA-.

S.I. Ožegov’s Russian dictionary defines the meanings of the prefix ZA- as follows [the original Russian text is followed by my translation to English]


“ЗА…, приставка. Образует глаголы со знач.: 1) начала действия, напр. заплодировать, заболевь, запеть, завопить, заплакать, заскрестись; 2) распространения действия за какие-н. пределы, напр. заехать, заслать;

1 Naturally, the essence of semantic distinction between perfective and imperfective verb forms is more complex than that, as I will show in the subsequent sections of this chapter.
3) с частицей -ся и без нее – доведения действия до излишества, до крайней степени, напр. закормить, задаривать, завраться, заработать;
4) совершенного вида (к соответствующему по знач. глаголу несов. вида), напр. загримировать (к гримировать).

[ZA-..., prefix. Forms verbs with meanings: 1) beginning of an action, such as zaaploidirotat' PRF (to start applauding), zabolet' PRF (to become sick), zapet' PRF (to start singing), zavopit' PRF (to start yelling), zaplakat' PRF (to start crying), zaskrestis' PRF (to start scratching); 2) expansion of an action beyond some limits, such as zaexat' PRF (to drive into), zaslat' PRF (to send in, to infiltrate); 3) with -sja particle and without it, pushing an action to the point of excess, to some utmost limit, as in zakormit' PRF (to overfeed), zadarivat' PRF (to shower gifts on somebody), zavratsja PRF (to lie excessively), zarabotatsja PRF (to overwork oneself); 4) perfective correlate of the corresponding imperfective verb, as in zagrimitrovat' IMP (to put make-up) for grimirotat' IMP (to put make-up; to be putting make-up)]

The above definition of the verbal prefix ZA- raises a whole lot of new questions rather than clarifying the picture. Were I a foreign student of Russian and were I given the aforementioned definition of the meanings of ZA-, I would be likely to ask myself (and my Russian teacher) the following questions.

Questions about the Prefix ZA-

1. What is the semantic function of the verbal prefix ZA- in Russian? Is it a grammatical perfectivizing operator that shifts imperfective verbs into perfective ones, as the fourth meaning in the Ozhegov’s dictionary definition suggests?
2. Is ZA- a lexical operator that changes a lexical meaning and/or argument structure of imperfective verbs? If so, what makes the aforementioned examples in meanings 1-3 perfective?
3. Is there a way to predict a distribution of the meanings of ZA- on the basis of the meanings of the imperfective verbs it applies to? In other words, which meanings of ZA- arise with which verbs?
4. Is there an invariant meaning of ZA- in the lexicon? If so, how is it divided into specific submeanings?
More empirical evidence from Russian shows that there are no straightforward answers to the above questions. Take the first question, whether $ZA$- is a pure perfectivizer (\textit{čistovidovaža pristavka}); i.e., a grammatical device for perfectivizing imperfective verbs. The data from the lexicon illustrates that $ZA$- seems to act as a pure perfectivizer with some imperfective verbs, as in (1). The problem is that some other verbal prefixes in Russian – the prefix $NA$- in (2), the prefix $PO$- in (3), the prefix $S$- in (4) and the prefix $O$- in (5) – seem to serve as pure perfectivizers as well$^2$.

(1) a. Rabočie asphaltirovali$^{\text{IMP}}$ dorogu.
   Workers asphalted road
   '(The) workers asphalted a/the road.'

   b. Rabočie zaasphaltirovali$^{\text{PRF}}$ dorogu.
   Workers $ZA$-asphalted road
   'The workers asphalted the road.'

(2) a. Ivan pisał$^{\text{IMP}}$ stat'u.
   Ivan wrote article
   'Ivan wrote a/the article.'

   b. Ivan napisał$^{\text{PRF}}$ stat'u.
   Ivan NA-wrote article
   'Ivan wrote the article.'

(3) a. Oleg stroił$^{\text{IMP}}$ dom.
   Oleg built house
   'Oleg built a/the house.'

   b. Oleg postroił$^{\text{PRF}}$ dom.
   Oleg PO-built house
   'Oleg built the house.'

(4) a. Rebenok delal$^{\text{IMP}}$ domašnee zadanie.
   Child did home assignment
   'The child did his homework.'

$^2$ The superscript abbreviation $^{\text{IMP}}$ stands for an imperfective verb, while $^{\text{PRF}}$ stands for a perfective one.
b. Rebenok sdelal\textsuperscript{PRF} doma\v{s}nee zadanie.

Child \ S-did home assignment

'The child did his homework.'

(5) a. Ulizy pusteli\textsuperscript{IMP}.

Streets emptied

'The streets emptied.'

b. Ulizy opusteli\textsuperscript{PRF}.

Streets O-emptied

'The streets emptied.'

As examples (1)-(5) illustrate, 
\textit{ZA-} is not the only prefix in Russian, capable of perfectivizing the imperfective forms. If 
\textit{ZA-} was a pure grammatical perfectivizing operator, it would mean that the aspetual system in Russian utilized several grammatical operators, having an identical semantic function. In such a case, the language is expected to allow an unrestricted interchange of the perfectivizing verbal prefixes. Such prefixes, however, are non-interchangeable, since replacing any of the verbal prefixes in (2)-(5) with \textit{ZA-} leads either to infelicity of a \textit{ZA-} prefixed form or to a shift in its lexical meaning, compared to the meaning of its imperfective counterpart. Replacing (1), (3)-(5) with \textit{NA-}; (1)-(2), (4)-(5) with \textit{PO-}; (1)-(3), (5) with \textit{S-} and (1)-(4) with \textit{O-} is, likewise, impossible. Thus, treating the prefix \textit{ZA-} as a grammatical marker of perfectivity is problematic, due to the fact that it does not act as a \textit{universal} perfectivizer in Russian. Rather, its perfectivizing function seems to be limited to some selected group of imperfective verbs, which is a peculiar behavior for a grammatical operator (imagine the \textit{-ing} progressive operator in English assigning progressive reading to some verbs, while changing a lexical meaning of others).

Leaving the correlation between the prefix \textit{ZA-} and perfectivity aside for the moment, let me address the next question: whether \textit{ZA-} is a lexical operator, which modifies lexical meanings and argument structure of imperfective verbs. Again, there is no simple answer to this question. Were \textit{ZA-} a verbal modifier with a single well-defined meaning, such as the English verbal prefix \textit{mis-} in \textit{misunderstand} and \textit{misplace}, it would be a relatively simple task to describe its semantic mechanism. Ozhegov's dictionary definition, however, provides \textit{three} different meanings,
associated with \(ZA\)-: \textit{beginning of an action, expansion beyond limits} and \textit{excess}. This is not the end of the story, since various studies of the prefix \(ZA\)- provide their own estimates of the number of meanings, associated with \(ZA\)-. For instance, Ovčinnikova 1979 counts seven distinct meanings of \(ZA\)-; Keller 1992 talks about 20 meaning headings for \(ZA\)-; and Zaliznjak 1995 proposes a list of semantic meaning labels, which can combine with each other, to account for the variety of the meanings of \(ZA\)-. The following examples in (6)-(11) illustrate the problematicity of estimating the accurate number of meanings, associated with \(ZA\)-.

(6) a. Ivan plakal \(\text{IMP}^\text{IMP}\).
   Ivan cried
   'Ivan cried.'
   b. Ivan zaplakal \(\text{PRF}^\text{PRF}\).
   Ivan \(ZA\)-cried
   'Ivan started crying.'

(7) a. Leonid bolet \(\text{IMP}^\text{IMP}\).
   Leonid was sick
   'Leonid was sick.'
   b. Leonid zabolet \(\text{PRF}^\text{PRF}\).
   Leonid \(ZA\)-was sick
   'Leonid became sick.'

(8) a. Bill pisal \(\text{IMP}^\text{IMP}\) lektziju v tetrad.'
   Bill wrote lecture in notebook
   'Bill wrote a/the lecture to his notebook.'
   b. Bill zapisal \(\text{PRF}^\text{PRF}\) lektziju v tetrad.'
   Bill \(ZA\)-wrote lecture in notebook
   'Bill wrote down the lecture to his notebook.'

(9) a. Rimljane voevali \(\text{IMP}^\text{IMP}\) s Gotami.
   Romans fought with Goths
   'Romans fought with Goths.'
b. Rimljane zavoevali\textsuperscript{PRF} Gotov.
Romans ZA-fought Goths
'Romans conquered the Goths.'

(10) a. Ivan čital\textsuperscript{IMP} knigu.
Ivan read book
'Ivan read a/the book.'
b. Ivan začital\textsuperscript{PRF} knigu.
Ivan ZA-read book
'Ivan read the book to pieces.'

(11) a. Ivan bil\textsuperscript{IMP} Petju.
Ivan beat Petja
'Ivan beat Petja.'
b. Ivan zabil\textsuperscript{PRF} Petju do smerti.
Ivan ZA-beat Petja to death
'Ivan beat Petja to death.'

In (6), the prefix ZA- derives the ZA-prefixed verb zaplakat'\textsuperscript{PRF} (to start crying) in (6b), which corresponds to the 'beginning of a new action' meaning of ZA-, defined in Ozhegov's dictionary. The perfective zabolet'\textsuperscript{PRF} (to become sick) in (7b), however, describes a beginning of a new state of affairs of being sick, rather than a process. Thus, one can make a legitimate claim that examples (6b)-(7b) refer to two distinct meanings of ZA-: 1) beginning of a new process; 2) beginning of a new state. Such distinction is intuitively plausible, since the basic imperfective verbs in (6a) and (7a) belong to different lexical categories: plakat'\textsuperscript{IMP} (to cry) is an activity verb, while bolet'\textsuperscript{IMP} (to be sick) is a state verb\textsuperscript{3}. In such a way, as noted in Krongauz 1998, the semantic properties of the basic imperfective verbs seem to be reflected in the semantics of their ZA-prefixed counterparts.

Examples (8)-(11), in their turn, cannot be dismissed as cases of either expansion beyond limits or excessive action without resorting to the excruciating verbal

\textsuperscript{3} A division of verbs into different lexical classes is based on the Vendlerian classification of verbs (Vendler 1967). In the section 1.3.2, I argue for the relevance of the Vendlerian system in Russian and discuss the interaction between the grammatical and the lexical aspects in Russian.
equilibristic. For instance, one might claim that a writing action in (8b) expands beyond some spatial limit allocated for writing in the notebook; (9b) describes a military conflict that keeps expanding until it reaches its natural conclusion: defeating the other party; (10b) emphasizes an excessive damage to the book, inflicted during the reading process; and (11b) pushes the process of fighting one another to the utmost excess: the death of one of the fighters. On the other hand, one may equally argue that each aforementioned example represents a different meaning of ZA-, as proposed in A. A. Zaliznjak's study of the prefix ZA- (Zaliznjak 1995). Zaliznjak 1995 account matches (8)-(11) to the following meanings of ZA-: FIX - fixating an object relative to a surface, such as transferring a text onto pages of the notebook in (8b); GET - acquiring possession of some object/property, such as conquering (the land of) Goths in (9b); DAMAGE, EXCESS - causing damage to a physical object, such as reading the book to pieces in (10b); and DAMAGE, KILL - hurting or killing a living being, such as beating Petja to death in (11b).

The data in (6)-(11) illustrates that the range of meanings, expressed by the ZA-prefixed verbs in the lexicon, may extend well beyond the three meanings, provided by the Ozhegov's dictionary. Moreover, the intransitive verb voevat'IMP (to fight, make war) in (9a) is shifted into the transitive zavoevat'PRF (to conquer) in (9b), indicating that the prefix ZA- can modify a syntactic argument structure of an imperfective verb as well as its lexical meaning. The semantic account of ZA- will have to account for such shifts in the lexical meanings and/or argument structure of the basic verbs. The data in (6)-(11) leads to a natural conclusion that the exact number of meanings of ZA- in the lexicon cannot be determined without proposing a formal technique that would enable: a) defining what counts as a meaning of ZA-; b) distinguishing one meaning of ZA- from another on the basis of some grammatical criteria. Furthermore, assuming that the prefix ZA- in (6)-(11) is a lexical modifier of imperfective verbs, rather than a grammatical perfectivizer, one needs to explain the source of perfectivity of the ZA-prefixed verbs in the aforementioned examples.

In light of the discussion above, it becomes evident that a semantic account of the prefix ZA- must account for its interaction with the unprefixted verbs. Suppose one compiled an extensive list of the meanings of ZA-, manifested by the ZA-derived verbs. In such a case, one would still need to explain which meanings of ZA- arise with which imperfective verbs. After all, one's purpose is not merely to describe the existing meanings of ZA-, but to construct a reliable model that can predict which
meaning of Za- (if any) is assigned to a given unprefixed verb on the basis of its lexical semantics and other relevant semantic factors.

Not only can the prefix Za- change a lexical meaning and/or argument structure of an existing imperfective verb in the lexicon, but it also seems to play an active role in the word-formation process in Russian, coining new Za-prefixed 'empty-based' verbs (Krongauz 1998), as in examples (12a)-(12b).

(12) a. Vsemirnaja pautina sovsem zaputala\textsuperscript{PRF}, zapautinila\textsuperscript{PRF} Miša.

World-wide web\hspace{1em} totally Za-entangled Za-pautinila Miša

'The world-wide web totally tied, entangled Miša in its net.'

b. Mark zapuzyril\textsuperscript{PRF} mjač v vorota.

Mark Za-puzyril\hspace{1em} ball\hspace{1em} in gate

'Mark kicked the ball into the gate.'

The Za-prefixed verbs in zapautinit\textsuperscript{PRF} and zapuzyrit\textsuperscript{PRF} in (12a)-(12b) are derived from presumably imperfective base verbs that do not have an autonomous lexical meaning of their own. The imperfective base verbs pautinit\textsuperscript{IMP} in (12a) and puzyrit\textsuperscript{IMP} in (12b) do not have a coherent interpretation in the contemporary Russian, though they seem to be denominalized from the nouns pautina (spider's web) and puzyr' (bubble). Yet their Za-prefixed correlates zapautinit\textsuperscript{PRF} and zapuzyrit\textsuperscript{PRF} are interpreted as to entangle and to kick into, respectively. Krongauz 1998 calls examples like (12) 'empty-based' verbs (glagoly s nesuščestvujuščej osnovoj), arguing that in such cases the lexical meaning of a prefixed verb is recovered from the meaning of the prefix itself (by some associative analogy with a set of other verbs, derived by the given prefix). Examples in (12) indicate that the prefix Za- (as well as the other verbal prefixes in Russian) serves as a word-formation tool, capable of introducing new verbal predicates into the lexicon.

So far, I provided examples of the interaction of Za- with basic imperfective verbs in Russian. However, there are also cases in which the prefix Za- applies to perfective verbs as well. Consider the following examples (13)-(14):
(13) a. Ivan tolkal\textsuperscript{IMP} telegu.
   Ivan pushed cart
   'Ivan pushed a/the cart.'
 b. Ivan tolnkul\textsuperscript{PRF} telegu.
   Ivan pushed cart
   'Ivan gave one push to the cart.'
 c. Ivan zatolknul\textsuperscript{PRF} telegu v ambar.
   Ivan ZA-pushed cart in barn
   'Ivan pushed the cart into the barn.'

(14) a. Ivan xlopal\textsuperscript{IMP} dver'ju.
   Ivan slammed with door
   'Ivan slammed a/the door.'
 b. Ivan xlopnul\textsuperscript{PRF} dver'ju.
   Ivan slammed door
   'Ivan slammed the door once.'
 c. Ivan zaxlopnul\textsuperscript{PRF} dver'.
   Ivan ZA-slammed door
   'Ivan slammed the door shut.'

In examples (13)-(14), the perfectivizing suffix \textit{nu}- attaches to imperfective verbs in (13a)-(14a), shifting them into perfective semelfactive verbs in (13b)-(14b)\textsuperscript{4}. Then, the prefix \textit{ZA}- attaches to the semelfactive forms and alters their meanings, shifting \textit{push} into \textit{push into} in (13c); \textit{slam} into \textit{slam shut} in (14c). One may argue that \textit{ZA}- first attaches to the imperfective verbs \textit{tolkat'}\textsuperscript{IMP} (to push) and \textit{xlopat'}\textsuperscript{IMP} (to slam) and derives the perfective verbs \textit{zaxlopat'}\textsuperscript{PRF} (to start applauding/slamming) and \textit{zatolkat'}\textsuperscript{PRF} (to push into/start pushing), while the suffix \textit{nu}- applies to these verbs at the latter stage. However, an example with the verb \textit{gljadet'}\textsuperscript{IMP} (to look/stare) refutes such analysis. The verb \textit{gljadet'}\textsuperscript{IMP} has a semelfactive form \textit{gljanut'}\textsuperscript{PRF} (to take a look), which is derived into \textit{zagljanut'}\textsuperscript{PRF} (to take a look into) by \textit{ZA}-. The lexicon does not have \textit{zagljadjer'}\textsuperscript{PRF}, which proves that the suffix \textit{nu}- applies first, while the prefix \textit{ZA}- applies afterwards to the already perfectivized semelfactive form. It should

\textsuperscript{4} Perfective semelfactive verbs in Russian denote instantaneous events, describing a single occurrence of a corresponding activity event (Smith 1991).
be noted, however, that not all perfective semelfactives in Russian occur with *ZA-, as illustrated by the ungrammaticality of *zamorgnut' (morgnut' PRF is a semelfactive of morgat' IMP – to wink) and *zašepnut' (šepnut' PRF is a semelfactive of šeptat' IMP – to whisper).

To sum up, the observations made in (1)-(14) paint a complex picture of a highly inconsistent behavior of the verbal prefix *ZA- in Russian. On the one hand, *ZA- seems to function as a pure perfectivizer, shifting some imperfective verbs into perfective ones. On the other hand, it acts as a lexical modifier of imperfective verbs, altering their lexical meaning and/or argument structure (and, possibly, shifting them into perfectives as well). Moreover, *ZA- can serve as a word-formation operator, creating new *ZA-prefixed verbs out of the lexically empty base forms. In some cases, *ZA- even applies to perfective semelfactive verbs, which seems totally contradictory to its presumed function of a perfectivizing operator. Thus, a semantic analysis of the prefix *ZA- would have to account for the following problems.

**Problems with the prefix *ZA-**

- seems to behave as pure perfectivizer, but only with some imperfective verbs.
- changes a lexical meaning and/or an argument structure of some imperfective verbs (which undergo perfectivization after the application of *ZA-).
- is associated with multiple lexical meanings, expressed by *ZA-prefixed verbs. in the lexicon.
- participates in a word formation process in Russian by coining 'empty-based' *ZA-prefixed verbs.
- applies to some perfective semelfactive verbs.

I shall provide solutions for the problems above in the course of the current work. A first step in exploring the semantic properties of *ZA- is to take a closer look on its semantic environment. The prefix *ZA- does not operate in a vacuum; its semantic properties interact with semantics of lexical verbs, semantics of aspect and semantics of prefixation in Russian. In such a case, I have to adopt a theory of verbal semantics, a theory of prefixation and a theory of aspect before analyzing the particular prefix *ZA-. Needless to say, these theories need to be consistent with each other. The theoretical background for this study will, thus, be presented in the following sections.
1.2 Semantics of Verbs

One can safely claim that verbs constitute a core element of any language on a par with nouns. To my knowledge, there are no languages in the world that can function without verbs. As Isačenko 1960 put it: “A verb, as a lexical-grammatical class of words, is one of the most important structural elements of an organized grammatical expression, and, thus, of a language in its communicative function” (Isačenko 1960: 7, translation into English is mine). Given the fact that verbs play such a vital role in the language, I shall now present a general theoretical model that allows us to define semantic properties of verbs in the lexicon.

1.2.1 A (neo)-Davidsonian Theory of Events

In 1967 Donald Davidson wrote his famous essay *The Logical Form of Action Sentences* in which he argued for the addition of an existentially bound event argument to what he called *action predicates*. In the Davidsonian framework, a one-place predicate, such as *jump*, became a two-place predicate, expressing a relation between the subject and the event argument; while a two-place predicate, such as *eat*, turned into a three-place predicate, denoting a relation between the subject, the object and the event argument. Indirect objects and verbal modifiers were added to a verb via a conjunctive operation.

(15) **Representation of Verbs in the Davidsonian event-based framework**

a. John jumped.
∃e[JUMP(e, j)]
There was an event of John's jumping

b. John loved Mary.
∃e[LOVE(e, j, m)]
There was an event of John loving Mary

c. Mary flew to the moon.
∃e(FLY(e, m) ∧ Goal(e) = moon)
There was an event of Mary flying and its goal was the moon.

A further development of the Davidsonian proposal, in such works as Parsons 1990 and Landman 2000, laid the foundations of the neo-Davidsonian theory of
events in which all verbs are analyzed as one-place predicates denoting sets of events; and participants of events are introduced by thematic roles that serve as functions from events to individuals. Thus, examples in (15) are rewritten in (16) below in the neo-Davidsonian framework.

(16) **Representation of Verbs in the neo-Davidsonian event-based framework**

a. John jumped.
\[ \exists e \left[ \text{JUMP}(e) \land \text{Agent}(e) = j \right] \]
There was an event of jumping with John as its Agent

b. John loved Mary.
\[ \exists e \left[ \text{LOVE}(e) \land \text{Experiencer}(e) = j \land \text{Theme}(e) = m \right] \]
There was an event of loving with John as its experiencer and Mary as its theme.

c. Mary gave John "Lord of the Rings".
\[ \exists e \left[ \text{GIVE}(e) \land \text{Agent}(e) = m \land \text{Recipient}(e) = j \land \text{Theme}(e) = \text{LOTR} \right] \]
There was an event of giving with Mary as its Agent, John as its Recipient and LOTR as its theme.

The neo-Davidsonian theory of events is founded on the premise that events are semantic primitives of the verbal domain, on a par with individuals that constitute semantic primitives of the nominal domain. Verbs, however, are a different type of semantic primitives than their nominal counterparts. Since a large portion of nouns refer to physical objects in the real world, we have a direct evidence for an existence of individuals. For instance, *John* and *Mary* are instantiated by the two people that I point at on the street. Events, on the other hand, are not directly accessible in such a way, so that one needs to rely on an indirect evidence to support the idea of events as semantic primitives. The arguments in favor of the event-based approach to semantics of verbs are discussed at length in Parsons 1990 and Landman 2000. I will briefly summarize the main points as follows.
**Arguments for the event-based semantics of verbs:**
a. *Diamond Entailment Properties.* Consider the following example in (17) [adopted from Parsons 1990: 13-14]:

(17) a. Brutus stabbed Caesar in the back with the knife.
    b. Brutus stabbed Caesar in the back.
    c. Brutus stabbed Caesar with the knife.
    d. Brutus stabbed Caesar.

The sentences in (17) stand in a *diamond* entailment pattern with respect to each other, as illustrated in (18).

(18) Brutus stabbed Caesar in the back with the knife.  
    Brutus stabbed Caesar in the back. & Brutus stabbed Caesar with the knife.  
    Brutus stabbed Caesar.

(17a) denotes the conjunction of (17b) and (17c), while each of the statements in (17b) and (17c) entails (17d), respectively. The conjunction of (17b) and (17c), however, does not entail the truth of (17a). The event-based interpretations of the statements in (17) account correctly for these entailment relations.

(19) a. $\exists e [\text{STAB}(e) \land \text{Agent}(e) = B \land \text{Theme}(e) = C \land \text{Goal}(e) = \text{back} \land \text{Instrument}(e) = \text{knife}]$  
    b. $\exists e [\text{STAB}(e) \land \text{Agent}(e) = B \land \text{Theme}(e) = C \land \text{Goal}(e) = \text{back}]$  
    c. $\exists e [\text{STAB}(e) \land \text{Agent}(e) = B \land \text{Theme}(e) = C \land \text{Instrument}(e) = \text{knife}]$  
    d. $\exists e [\text{STAB}(e) \land \text{Agent}(e) = B \land \text{Theme}(e) = C]$  

As you can see in (19), the conjunction of (19b) and (19c) does not entail (19a), because each *stabbing* event, denoted by (19b) and (19c), respectively, is existentially bound. Hence, both *stabbing* events are not necessarily identical. The events of *Brutus stubbing Caesar with the knife* and *Brutus stubbing Caesar in the back* do not have to
refer to the same event of stabbing. Brutus could stab Caesar in the back with a dagger and stab him in the chest with a knife. In such a way, the event-based analysis of verbs accounts for the entailment pattern in (18) in a straightforward manner.

b. Counting Events. The neo-Davidsonian theory explains the intuitive judgments on the number of events involved in a certain action, even when there is no explicit modifier quantifying over events.

(20) a. Whenever wood burns, oxygen is consumed. (adopted from Parsons 1990)
   b. There are at least as many oxygen-consuming events, as burning events.
   c. Every time the bell rang, I opened the door. (adopted from Rothstein 1995)
   d. There were at least as many door openings, as were bell ringings.

Example (20b) is deduced from (20a), and (20d) is deduced from (20c). The event-based account of (20a) and (20c), proposed in Rothstein 1995, provides a formal explanation for these deductions.

(21) Whenever wood burns, oxygen is consumed.
    \[ \forall e [ \text{BURN}(e) \land \text{Theme}(e) = \text{wood} \rightarrow \exists e' [ \text{CONSUME}(e') \land \text{Theme}(e') = \text{oxygen} \land M(e') = e] ] \]

(22) Every time the bell rang, I opened the door.
    \[ \forall e [ \text{RING}(e) \land \text{Theme}(e) = \text{the bell} \rightarrow \exists e' [ \text{OPEN}(e') \land \text{Agent}(e') = \text{I} \land \text{Theme}(e') = \text{door} \land M(e') = e] ] \]

M stands for a partial function that maps the set of events \( e' \) into the set of events \( e \). For instance, \( M \) matches events of consuming oxygen to events of burning wood, so that there are at least as many oxygen-consuming events, as burning events. In such a way, the neo-Davidsonian theory proves to be instrumental in accounting for the entailments that follow from the relation between two events in the for every \( e \), there is \( e' \) sentences, such as (20a)-(20c).
c. An Event Anaphora.
Consider the following example in (22) [taken from Mittwoch 1998]:

(22) Car A collided with Car B. It killed both drivers.

The pronoun *it* in (22) does not refer to the car A or the car B, but rather to the event of collision between the two cars, mentioned in the previous discourse. Again, the neo-Davidsonian theory allows accounting for the anaphoric use of *it* in (22) by providing an event variable that *it* makes reference to.

The aforementioned arguments provide credible evidence for an existence of an implicit event argument in the denotation of verbal predicates. Hence, I adopt the neo-Davidsonian theory of events as one of the theoretical foundations of my thesis.

1.2.2 Thematic Roles in the neo-Davidsonian Theory of Events

In the neo-Davidsonian framework, thematic roles are added to verbs via a conjunctive operator. Thematic roles serve as modifiers of events; i.e., partial functions from events to individuals of the type <e,d>. The question at this point is whether a specific event applies any semantic constraints on thematic roles, associated with it. Such question is critical in light of the examples with transfer verbs, such as *buy* and *sell*, discussed in Jackendoff 1990, Chierchia 1984 and Landman 2000, among others. Consider the following examples in (23).

(23) a. Mary bought the car from John with a credit card.
∃e [BUY(e) ∧ Agent(e) = Mary ∧ Theme(e) = the car ∧ Source(e) = John
∧ Manner(e) = with credit card]

b. John sold the car to Mary.
∃e' [SELL(e') ∧ Agent(e') = John ∧ Theme(e') = the car ∧ Goal(e') = Mary]

c. Only one transaction took place. (i.e., e = e')

In the neo-Davidsonian theory, examples (23a)-(23b) together with (23c) are interpreted as (24a), entailing (24b)-(24e).
(24) a. \( \exists e \ [BUY(e) \land Agent(e) = Mary \land Theme(e) = \text{the car} \land Source(e) = John \land Manner(e) = \text{with credit card} \land SELL(e) \land Agent(e) = John \land Theme(e) = \text{the car} \land Goal(e) = Mary] \)

b. John sold the car to Mary with the credit card.
\( \exists e \ [SELL(e) \land Agent(e) = John \land Theme(e) = \text{the car} \land Manner(e) = \text{with credit card}] \)

c. Mary sold the car to herself.
\( \exists e \ [SELL(e) \land Agent(e) = Mary \land Theme(e) = \text{the car} \land Goal(e) = Mary] \)

d. John bought the car from himself.
\( \exists e \ [BUY(e) \land Agent(e) = John \land Theme(e) = \text{the car} \land Source(e) = John] \)

e. John sold the car from himself.
\( \exists e \ [SELL(e) \land Agent(e) = John \land Theme(e) = \text{the car} \land Source(e) = John] \)

The entailments in (24b)-(24e), however, are clearly wrong, posing a problem for the neo-Davidsonian account in (23). Landman 2000 argues that (23c) needs to be understood not as entailing an equivalence relation between (23a) and (23b), but as inferring that events of buying and selling are indiscernible in the given situation. To make the swapping of arguments from one event into another in principle impossible, Landman 2000 proposes the following constraints on the thematic roles of a given event (quoted from Landman 2000: 38).

**Role Specification:** for each lexical verbal predicate A, it is specified which thematic roles are defined for this predicate.

The Role Specification constraint ensures, for instance, that the event of *selling* does not occur with the *source* argument, since the *source* role is not defined for *sell*. Thus, the role specification principle allows distinguishing between a *buying* event (which has a *source* argument) and a *selling* event (which does not allow a *source* argument in its lexical argument structure). Consequently, it rules out cases like (24e), where the *source* argument occurs with *sell*, as ungrammatical.
**The Unique Role Requirement:** any thematic role for a given event is uniquely specified. Thus, any given event can have at most one Agent, at most one Theme, at most one Goal, etc…

The unique role requirement guarantees that the buying and selling events in (23) are distinct. Assume that (23a)-(23b) had actually entailed a single transfer event. In such a case, the given event would have assigned the agent role twice – once for John and once for Mary. But this violates the unique role requirement and, hence, (23a) and (23b) must denote two non-identical events.

A combination of the two aforementioned principles – the Role Specification and the Unique Role Requirement – allows the neo-Davidsonian theory to make reference to unique finegrained events, distinguishable from each other with respect to their thematic roles assignment. In such a way, Landman 2000 develops a sophisticated and powerful version of the neo-Davidsonian account that can be employed in the studies of verbal semantics in languages other than English. For instance, as I will show in 1.4.2, Filip 2000, Filip & Rothstein 2006 propose a theory of prefixation in Slavic languages that is consistent with the event-based analysis of verbs. In this dissertation, I will rely on the neo-Davidsonian theory of events in developing the semantic analysis of the prefix ZA-.

The next question that needs to be addressed is what types of thematic roles are manifested in the lexicon. At the current stage, there is no general consensus among linguists on the overall number of thematic roles in English and their semantic functions, as various studies provide different estimates (Gruber 1976, Fillmore 1968, Jackendoff 1972, 1990, among others). A promising direction for formulating a comprehensive theory of thematic roles is provided by David Dowty in his prominent article 'Thematic Proto-Roles and Argument Selection' (Dowty 1991). Dowty 1991 suggests that thematic roles are best defined as clusters of entailments, imposed by a particular event on its arguments. Dowty 1991 proposes two basic types of thematic roles – Proto-Agent and Proto-Patient – characterized by the following entailments, or proto-properties, in (25) (Dowty 1991: 572).
As Dowty 1991 mentions, the list of entailments in (25) is not exhaustive and does not exclude adding further entailments to the prototypic thematic roles (see also the extension of the Dowty 1991 proposal in Ackerman & Moore 2001). The proto-roles can be subdivided into more finegrained thematic roles, which satisfy one or more entailments, listed in (25). For instance, perception verbs, such as to fear/see in John fears/sees Mary, require their agent arguments to satisfy the Proto-agent sentience entailment; while creation verbs, such as to build in John built the house, entail that their themes do not exist independently of the creation event. Dowty 1991 introduces the following argument selection principle – the argument that has the highest number of Proto-agent properties, entailed by the verb, is lexicalized as the subject of that verb. On the other hand, the argument that has the greatest number of Proto-patient entailments is lexicalized as the direct object of the verb.

The crux of the Dowty 1991 proposal, thus, lies in classifying particular individual thematic roles in terms of combinations of proto-properties, listed in (25). Such approach to the concept of thematic roles is quite appealing, since it allows constructing various finegrained thematic roles, where the degree of finegrainedness depends on the specific entailments, associated with the given thematic role. Moreover, expanding the list of proto-properties in (25) would lead to an even more finegrained inventory of thematic roles.

The purpose of the above discussion of thematic roles is not merely to highlight an important theoretical topic, related to the neo-Davidsonian framework. Rather, the Dowty 1991 theory of thematic roles has practical implications for analyzing the semantics of ZA-. Jumping a bit ahead, I will argue in the following chapters that the prefix ZA- is sensitive to some particular semantic proto-properties, which are
associated with specific thematic roles; and it interacts with such roles in a way that will become clear in the course of the current research. In (26), I propose a partial list of thematic roles, which I believe to be relevant for the analysis of the semantic properties of ZA. Each thematic role includes a list of specific entailments, imposed on its lexical argument. Entailments, put in parentheses, are optional, meaning they are not obligatory realized for the given argument. I introduce some additional entailments, which expand the original list of proto-properties in (25). The latter are italicized to distinguish them from the classic Dowty 1991 entailments.

(26) **Classification of thematic roles:**

a. **Agent:** Agent acts intentionally and brings about a new event/state of affairs or causes some change in another participant as a result of his actions. Agent is sentient, implying it is a person (or an animal) and may be either in motion or in a stationary position. Hence, the thematic role of an agent imposes the following entailments on its argument:

   i. volitional involvement in the event
   ii. sentience and/or perception
   iii. brings about a new event/state or causes a change of state in another participant
   iv. (movement)

b. **Instrument:** Instrument is neither volitional nor sentient, and may cause some change of state in the course of a given event. The thematic role of an instrument is usually assigned to inanimate objects, such as *hammer* or *car*. An instrument can move or remain stationary in the course of a given event. It is associated with the following entailments:

   i. brings about a new event/state or causes a change of state in another participant
   ii. *(used by an implicit agent)*
   iii. (movement)
c. **Experiencer:** Experiencer has sentience (and/or perception) as its defining property. The argument of an *experiencer* role does not affect or cause a change of state in the thing it perceives. For example, *John smells the roses*, where *John* is the experiencer, does not mean that *the roses* undergo a change of state or are affected by John's smelling of them.

   i. sentience (and/or perception)

   ii. does not affect another participant or causes a change in it

---

d. **Stimulus:** This thematic role entails that its argument is perceived by an experiencer. The argument of stimulus may be a cognate object or an event. It is not causally affected by another participant and does not undergo a change of state.

   i. *perceived by another participant*

   ii. is not (causally) affected by another participant

   iii. does not undergo a change of state

---

e. **Theme:** A thematic role of *theme* is assigned to entities that are affected by another participant in an event, such as *agent* or *instrument*. A theme role can be further subdivided into *incremental themes*, which undergo a gradual change of state in the course of an event (Dowty 1991).

   i. (causally) affected by another participant

   ii. (undergoes a change of state)

   iii. (incremental theme)

   iv. *(a material object)*

---

f. **Holistic Theme:** A thematic role of a Holistic Theme is a variation of Theme, assigned to objects that move in space. A holistic theme argument does not undergo any change of state, other than a change in its location.

   i. (causally) affected by another participant

   ii. movement

   iii. *does not undergo a change of state, other than a change of location*

   iv. *set in motion by an agent/instrument*

   v. exists independently of a motion event
h. **Goal:** Goal is a destination area to which another participant moves. A goal area exists independently of a motion event. It may restrict a path of the moving participant by providing the end-point on the path (though it is not the case for some motion verbs in Russian, as is shown in the following chapters).
   i. stationary (relative to a movement of agent/instrument/holistic theme)
   ii. exists independently of a motion event
   iii. *(contains a movement of another participant, providing the end-point on its path)*

i. **Source:** Source denotes a spatial location, signifying the first point on the path of a moving object. It is associated with the following entailments:
   i. stationary (relative to a movement of agent/instrument/holistic theme)
   ii. exists independently of a motion event
   iii. *[provides the first point on the path of a moving object]*

j. **Location:** Location is a stationary area in space where an event takes place. All participants of a given event are also located within the designated area.
   i. stationary
   ii. *[provides a spatial location for all other participants of the given event]*

The thematic roles are encoded in the role specification of verbs, including a division into obligatory and optional roles. For example, the verb *eat* in (27) requires an obligatory *agent* and *theme* and allows optional *instrument, source* and *location* roles, but disallows *goal*.

(27) *John ate cornflakes* (from a *plate*) (*to his mouth*) (with a *spoon*) (in the *kitchen*).

<table>
<thead>
<tr>
<th>Agent</th>
<th>Theme</th>
<th>Source</th>
<th>Goal</th>
<th>Instrument</th>
<th>Location</th>
</tr>
</thead>
</table>

It is important to mention, though, that the boundaries between thematic roles are not clear-cut and there is always a place for possible exceptions. For example, *eat* selects a volitional and sentient agent as its subject. Thus, we can say *John ate cornflakes*, but not *a chair ate cornflakes*, where *chair* is non-volitional and non-sentient object. Nonetheless, in the horror movie context, one may find plausible an example like *an evil refrigerator from hell ate John*. Such example can be explained
by assuming that the inanimate noun refrigerator undergoes some kind of a metonymic shift in the given context, which alters its lexical meaning into a volitional and sentient entity, thus, satisfying the entailments of the Agent thematic role.

1.2.3 Different Types of Events

So far, I have claimed that events serve as semantic primitives in the formal theory of the language. Other types of semantic primitives are individuals and truth values. Events, individuals and truth values are, thus, the building blocks of a complex construction set – our language. The nominal domain, however, provides various types of nominal expressions (e.g., proper names, count nouns, mass nouns), which denote distinct types of individuals (or sums of individuals), respectively. The question is whether there is a similar variety of event-types in the verbal domain.

A classification system of lexical verbs in English, proposed by Zeno Vendler (Vendler 1967), distinguishes between four major categories of verbs: States, Activities, Achievements and Accomplishments (see also an alternative classification of English verbs into events, processes and states in Mourelatos 1978). These four classes of verbs are distinguished from one another on the basis of various grammatical tests, such as occurrence with distinct temporal modifiers, compatibility with progressive tense and specific entailment properties (a detailed list of such tests is given in Dowty 1979: 60). For instance, states are true at instants, do not have a natural end-point and do not take progressive tense. Activities hold for intervals, do not have a natural end-point, occur in progressive and combine with for X time modifier. Achievements are near-instantaneous changes of state and occur with at X time. Accomplishments take progressive tense, have a natural end-point and occur with in X time modifier. Thus, to know in (28a) is a state verb, to walk in (28b) is an activity, to break in (28c) is an achievement and to read in (28d) is an accomplishment.

(28) a. John knows / * is knowing the truth.
   b. John walked for an hour / * in an hour.
   c. John broke the glass at 17:00 pm.
   d. John read Lord of the Rings in a week / * for a week.
Some linguists have argued that the Vendlerian classes reflect semantic properties of VPs, rather than root verbs (Dowty 1979, Verkuyl 1972, 1993). Such claim is based on an atelic reading of accomplishments with bare plural direct objects, as in (29b).

(29) a. John built the house / three houses in a year / * for a year.
    b. John built houses for a year / * in a year.

The verb *build* has a telic reading with the quantized direct objects in (29a), but an atelic interpretation with the bare plural direct object in (29b). Thus, *build* seems to behave as an accomplishment verb in (29a), but as an activity one in (29b). Verkuyl 1972, 1993 takes examples like (29) as evidence that the Vendlerian classification makes reference to the distinct types of VPs, rather than individual verbs. A recent theory of lexical aspect, proposed in Rothstein 2004, argues against the VP-based approach to the Vendler's classes, providing an alternative explanation for (29), discussed in chapter VII.

Rothstein 2004 proposes an analysis of Vendlerian classes of verbs in the framework of the above-mentioned neo-Davidsonian approach to verbal semantics. Rothstein's (2004) proposal is based on the premise that four different classes of verbs, described by Vendler, denote four different types of events. Events are distinguished on the basis of two crucial properties: telicity (whether an event has a natural end-point) and stages, as illustrated in Table 1.1.

<table>
<thead>
<tr>
<th></th>
<th>[± stages]</th>
<th>[± telicity]</th>
</tr>
</thead>
<tbody>
<tr>
<td>States</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Activities</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Achievements</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Accomplishments</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

States are true at instants and, thus, do not have any discernible stages in their development throughout a period in which a state holds. They also do not have any natural end-points, so a moment in time at which a state ends is arbitrary. Similarly to
states, activities do not have a predetermined end-point, but unlike states, activities are homogeneous only down to minimal intervals. For instance, an activity of walking in *John walks* may be reduced to a stage, which is no longer in the denotation of *walk*. John's making half a step is not considered as a process of walking. Thus, activities are comprised of minimal stages, or minimal activity events, that occur one after another in the interval in which activity process takes place. A semelfactive verb is interpreted as denoting a single occurrence of a minimal activity event. In English, semelfactives and activities are morphologically identical. Thus, *John jumped* is ambiguous between two interpretations: *John jumped a number of times* and *John jumped once*. In Russian, however, semelfactive verbs are morphologically and aspectually distinct from their activity counterparts: *John prygal*\(^\text{IMP}\) (John jumped continuously) and *John prygnul*\(^\text{PRF}\) (John jumped once).

Achievements are changes from one state of affairs into another (from \(\neg p\) into \(p\)). Being near-instantaneous events, they do not have stages, but are inherently telic. E.g., the achievement verb *to break* in *John broke the glass* denotes an event of change in the state of a glass – from whole (i.e., not broken) into broken.

Accomplishments are the most complex event type among the four Vendlerian classes. Accomplishments, like achievements, denote a change of state, but consist of a series of discernible stages or mini-events. For example, an accomplishment event of reading a book involves such distinct subevents as reading a paragraph, reading a page, reading a chapter, and so on. Accomplishments have inherent predetermined end-points in their denotations – an event of reading a book stops when the whole book is read. In literature, accomplishment is generally treated as a complex event, which consists of a process and an event of change. An event of change tracks the progress of an activity subevent and imposes some ordered structure on its progress. For instance, an event of *building the house* consists of a process of building and an event of house coming into existence. These two events share the same running time and are summed into a single accomplishment event. The building process and the corresponding event of change are linked together in such a way that stages of house coming into existence correspond to stages of the building process. In chapter III, I will provide a formal semantic analysis of an accomplishment event, based on Rothstein's (2004) proposal.
A number of studies of lexical aspect in Russian indicate that the Vendlerian classification is relevant not only for English, but for Russian as well (Mehlig 1985, Padučeva 1996, 2004, Braginsky & Rothstein 2008, among others). Classifying lexical verbs in Russian in terms of the Vendlerian categories is not a simple task, though, since verbal semantics interacts with semantics of perfective and imperfective grammatical aspects and semantics of prefixation. Consequently, the four Vendlerian classes are subdivided into additional subcategories of events, as will become evident in the course of this work. I shall discuss the concept of aspect in Russian in more detail in 1.3.2.

One important point that I should mention: events can generally be shifted from one event type into another (Dowty 1979). One such case of type-shifting events, discussed in Rothstein 2004, is the resultative constructions in English. For instance, an activity event hammer in John hammered the metal in (30a) undergoes a shift into a derived accomplishment event John hammered the metal flat in (30b).

(30) a. John hammered the metal for an hour / * in an hour.
   b. John hammered the metal flat in an hour / * for an hour.

Aspectual type-shifting operations on events play an important role in the semantic analysis of the prefix ZA-, as will become evident in the following chapters.

1.3 Aspect in Russian

The division of all verbs in the lexicon of Russian into perfective or imperfective forms seems to be the cornerstone of the Russian aspectology. Slavicists generally agree that aspect constitutes a grammatical category in Russian and each verb in the lexicon is classified as either perfective or imperfective (Comrie 1976, Zaliznjak & Shmelev 2000). As mentioned earlier, perfective and imperfactive verbs are morphologically and semantically distinct. Let's address the morphological distinction first. The finite verbal forms in Russian are morphologically classified as Past and Non-Past forms. The morphological Past and Non-Past forms are interpreted as three semantic tenses of Past, Present and Future. The imperfective verbs are expressed by both Past and Non-Past morphological forms that correspond to the semantic tenses of
past and present. The Imperfective Future is expressed by the complex VP, consisting of the inflected non-past auxiliary verb *byt IMP* (to be) and an imperfective infinitive.

Perfective verbs have basic past and non-past morphological forms, with the non-past forms corresponding to the semantic future tense. Thus, perfective verbs in Russian cannot express a semantic present tense (in the sense of an action in progress at the moment of utterance). The distribution of the aspectual morphological verb forms across tenses is shown in the following table 1.2.

| Table 1.2 |
| Distribution of Aspectual Morphological Verb Forms across Tenses |

<table>
<thead>
<tr>
<th></th>
<th>Imperfective</th>
<th>Perfective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infinitive</strong></td>
<td>stroit' (to build)</td>
<td>postroit' (to build)</td>
</tr>
<tr>
<td><strong>Past</strong></td>
<td>stroil (he built/was building)</td>
<td>postroil (he built)</td>
</tr>
<tr>
<td><strong>Non-Past</strong></td>
<td>stroit (he is building)</td>
<td>—</td>
</tr>
<tr>
<td><strong>Present</strong></td>
<td>budet stroit' (he will be building)</td>
<td>postroit (he will build)</td>
</tr>
<tr>
<td><strong>Future</strong></td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

A rigid system of tests, based on the correlation between aspect and tense in Russian, determines an aspectual status of any particular verb. First, perfective verbs do not occur in the present tense, but rather acquire a future reading in the non-past form, as in (31b)-(32b).

(31) a. Ivan stroit IMP dom. [Present / * Future]  
   Ivan build house  
   'Ivan is building a/the house.'

b. Ivan postroit PRF dom. [* Present / Future]  
   Ivan will build house  
   'Ivan will build the house.'
(32) a. Ivan otkryvaet IMP dver'. [Present / * Future]
    Ivan open door
    'Ivan is opening a/the door.'

    b. Ivan otkroet PRF dver'. [* Present / Future]
    Ivan open door
    'Ivan will open the door.'

Second, perfective infinitives do not occur as complements of the non-past forms of the auxiliary byt'IMP (to be). The verb byt',IMP (to be) in its future reading takes only imperfective infinitives as its complement, as illustrated in (33)-(34).

(33) Ivan budet stroit'IMP / (* postroit'PRF) dom.
    Ivan be - Non-Past 3rd pers. sing. to build to build house
    'Ivan will be building a house.'

(34) Ivan budet otkryvat'IMP / (* otkryt'PRF) dver'.
    Ivan be - Non-Past 3rd pers. sing. to open to open door
    'Ivan will be opening a door.'

According to the third test, only an imperfective infinitive can be a complement of the phasal verbs načat' PRF / načinat'IMP (to begin), končit'PRF / končat'IMP (to finish) and prodolžit'PRF / prodolžat'IMP (to continue), as illustrated in (35)-(36).

(35) a. Ivan načal PRF stroit'IMP / (* postroit'PRF) dom.
    Ivan began to build to build house
    'Ivan began to build a house.'

    b. Ivan načinal IMP stroit'IMP / (* postroit'PRF) dom.
    Ivan began to build to build house
    Ivan was beginning to build a house.

(36) a. Ivan prodolžil PRF otkryvat'IMP / (* otkryt'PRF) dver'.
    Ivan continued to open to open door
    'Ivan continued to open a door.'
b. Ivan prodolžal \textit{IMP} otkryvat' \textit{IMP} / (* otkryt' \textit{PRF}) \textit{dver'}. \\
Ivan continued to open to open door \\
'Ivan was continuing to open a door.'

The tests above allow drawing a line between perfective and imperfective verbs from a morphological perspective\textsuperscript{5}. Now, I shall clarify the concepts of perfectivity and imperfectivity in Russian from the semantic point of view. In general, it can be said that perfective and imperfective verbs provide different viewpoints on events in the world. The exact nature of semantic distinctions between perfective and imperfective aspects is a subject of much debate in the linguistic literature (Isačenko 1960, Forsyth 1970, Comrie 1976, Padučeva 1996, Filip & Rothstein 2006). Let it be clear that my intention in this work is not to defend some particular postulate against another. Therefore, I shall refrain from making final judgments in some problematic areas. Suffice to say at this point that my justification for my preferences is based on adopting those theoretical models that I believe to be the most suitable for the purpose of this thesis. However, I will try to keep the balance between providing the arguments in favor of my choices with respect to the crucial theoretical issues and maintaining the focus of discussion on the topics that are directly relevant to the semantic analysis of \textit{ZA}. Let me begin by presenting a short survey of the semantic properties of the aspectual categories in Russian.

\subsection*{1.3.1 Semantics of Aspect}

In the discussion of aspectual semantics in Russian, it is important to distinguish between two different concepts. The first concept is a core meaning of aspect – a single definition of perfectivity and imperfectivity that reveals a common semantic denominator for all uses of perfective or imperfective verb forms. A core meaning of the perfective aspect needs to show what all the available meanings, expressed by perfective verbs in the lexicon, have in common; while a core meaning of the imperfective aspect fulfills the same role for the imperfective verbs.

\textsuperscript{5} Some verbs in Russian are bi-aspectual, meaning that their perfective and imperfective forms are morphologically identical (Zaliznjak & Shmelev 2000). For instance, ženitsja (to get married) can be interpreted either as an imperfective or as a perfective verb, depending on the context. (Cf. Ivan seičas ženitsja $^{\text{IMP}}$ = [Ivan is getting married now] \textit{with Ivan zavtra ženitsja $^{\text{PRF}}$} = [Ivan will get married tomorrow]).
A second concept is the notion of specific aspectual meanings (чastnye vidovye značenija) – the range of particular meanings that can be expressed by perfective or imperfective forms, where a choice of meanings is dependant on context. There is no uniform agreement on the whole range of specific aspectual meanings among scholars, though some meanings appear to be more prominent than the others.

Let us begin by discussing the invariant meaning for the perfective aspect. Semantics of the perfective aspect in Russian is generally considered as a marked case, while semantics of the imperfective one is unmarked. Yet developing a uniform definition that unites all the possible meanings, expressed by specific perfective verbs, under one umbrella is not as a straightforward task as it may seem at first. Isačenko 1960 suggests that perfective aspect views a process, denoted by the given perfective verb, as an indivisible complete event. Forsyth 1970 notes that perfective verbs “express the action as a total event summed up with the reference to a single specific juncture” (Forsyth, 1970: 8). According to Forsyth, this definition allows to account for all the various uses of the perfective verb forms. While admitting the somewhat vague status of the definition above, Forsyth 1970 states that a more concrete definition will inevitably exclude one or another usage of perfective verb forms. Zaliznjak & Shmelev 2000 define the underlying meaning, shared by all perfective verbs, as describing a single event that took place in the past, or is expected to occur in the future (Zaliznjak & Shmelev 2000: 19). Padučeva 1996 attempts to formalize the invariant meaning of perfective aspect by defining it as a change of state with the list of conditions in (37), some or all of which are expressed by a particular perfective verb.

(37) The Invariant Meaning of Perfective Aspect (Padučeva 1996: 86-87)
A perfective verb denotes a change of state; i.e., a normal development of a process, expressed by the given verb, would eventually lead to the result state or the new state of affairs. A verb is in the perfective form if (some of) the following conditions hold:

i. there was an ongoing process at the instant t (t < t_f), which brought about p.
ii. at the instant t_f, p was established.
iii. the state p holds at the moment of observation.
iv. the instant t_f is fixed by the context as the point of reference.
Padučeva 1996 illustrates how the definition in (37) accounts for the semantic properties of individual perfective verbs with an example of perfective verb $otkryt'$ PRF (to open) in $Ivan otkryt'$ PRF okno (Ivan opened the window) in (38) (taken from Padučeva 1996: 87, example 3).

(38) Ivan otkryl $^1$PRF okno.

'Ivan opened window'

i. at the instant $t$, a change from not-$p$ to $p$ was taking place.

ii. at the instant $t_f > t$ window became open.

iii. at the moment of observation, the window is open.

iv. the instant $t_f$ is contextually fixed.

In chapter VII, I will provide an alternative formal analysis of perfectivity in Russian, developed in the Filip & Rothstein 2006 account.

Zaliznjak & Shmelev 2000 discusses some specific aspectual meanings, related to the invariant meaning of perfectivity, which can be expressed by perfective verbs in various contexts. The meaning of usualness ($uzual'noe znachenije$) describes an iterative situation that is expressed as a single event to put focus on the action itself. In such cases, iterativity is implied by the contextual environment, as in (39) (taken from Zaliznjak and Shmelev 2000: 19):

(39) Inogda vesnoj byvaet tak: naletit $^1$PRF burja, poguljaet $^1$PRF

'Sometimes in spring happens this will come storm will walk
časa dva-tri i tak-že neožidanno zatixnet $^1$PRF, kak načalas$^1$PRF,
hours two-three and same unexpectedly will calm as began
'Sometimes in the spring the storm comes on, rages for two-three hours and calms down as unexpectedly as it starts.'

In (39), the future perfective verb forms are used in an iterative-like way due to the presence of the contextual expression inogda byvaet tak (sometimes it happens so) that indicates iterativity.
The potential meaning (*potenzial'noe značenije*) denotes a certain capability or a likelihood of an event rather than an actual situation. Zaliznjak & Shmelev 2000 provides the following examples:

(40) a. On rešit PRF lubuju zadacju.
   He will solve any problem
   'He can solve any problem.'

b. Takix knig v magazinax seiças ne najideš PRF.
   Such books in stores now not will find
   'You can't find such books in the stores these days.'

Again, the future perfective forms in (40) have a generic flavor in their interpretation due to their contextual environment.

Another meaning is a conditional-hypothetical meaning (*uslovno-gipotetičeskoе značenije*) in which a perfective verb refers to a hypothetical action, as in (41).

(41) Nu ladno, vypolnil PRF ja vašu pros'bu, a dal'she čto?
   well fulfilled I your request then what
   'Suppose I fulfill your request, what's next?'

The last meaning is the meaning of summarization (*summarnoe značenije*) in which a perfective verb denotes a single event that has multiple occurrences. Thus, the following example in (42) denotes a single event of knocking three times on the door.

(42) On tri raza postučal PRF v dver.'
   He three times knocked in door
   'He knocked three times on the door.'

Having discussed the core meaning of perfectivity and its particular interpretations, let's now take look on the core and the particular meanings of the imperfective aspect in Russian. Forsyth 1970 argues that imperfective verbs are semantically neutral forms and their only inherent meaning is “to name the type of action, to identify it lexically, along with the grammatical meaning of the form
concerned – past tense, future tense, imperative etc. – but without reference to perfectivity” (Forsyth, 1970: 6).

Filip 1999 proposes an imperfectivizing PART operator to account for semantics of imperfectivity. The PART operator is defined in terms of the mereological part-of relation ‘≤r’, as shown in (43):

(43) a. λP λe [P(e) ∧ PART(P)]
   b. PART = λP λe ∃ e[P(e) ∧ e≤r e]

The imperfectivizing operator applies to events and yields (partial) events. Due to the semantics of PART, which allows a partial event to be identical to a complete event, the imperfective verbs should allow complete interpretations. This prediction is borne out, as can be seen from the range of particular aspectual meanings, denoted by the imperfective verbs in Russian.

In general, sentences containing an imperfective verb can express four major readings (Zaliznjak and Shmelev 2000): 1) a progressive focalized-processual reading in which an imperfective verb describes a situation or a process at the moment of observation, as in (44); 2) a durative-processual meaning in which an imperfective verb denotes an ongoing action that takes place over an interval of time, as in (45); a perfect meaning with an imperfective verb describing a completed event, as in (46); 4) a habitual/iterative meaning, which refers to a repetitive action, as in (47).

(44) Kogda ja vošelPRF, Ivan čitalIMP knigu.
    When I came in  Ivan read  book
    'When I came in, Ivan was reading a book.'

(45) Oleg ves' den' pisolIMP stat'ju.
    Oleg all day wrote  article
    'Oleg was writing a/the article for the whole day.'

(46) Rastrelli strolIMP Zimnij Dvorez.
    Rastrelli built  Winter Palace
    'Rastrelli built the Winter Palace.'
Thus, the imperfectivizing PART operator accounts for examples (44)-(45), which denote partial events of *reading* and *writing*, respectively, and for (46), which denotes the complete event of *building the Winter Palace*. We are left with an iterative reading in (47) that needs to be accounted for on independent grounds. I assume that (47) is the result of application of another operator, let's call it ITER_E, which applies after the PART operator and yields iterative events; i.e., multiple events of the same kind. Note that a partial interpretation of the imperfective event under a scope of ITER_E is not affected. In (48a), for instance, an iteration of the event of reading “War and Peace” does not guarantee its completeness, as we can see from the grammaticality of (48b).

(48) a. Oleg kazdyj den' čital'IMP Voj'nui Mir.
    Oleg each day read War and Peace
    'Oleg read War and Peace every day.'

b. Oleg každyj den' čital'IMP Voj'nui Mir, no tak i ne dočital'PRF etu knigu.
    Oleg each day read War and Peace but never finished reading this book
    'Oleg read War and Peace every day, but never finished reading this book.'

Thus, the iterativity operator seems to follow the PART operator and, consequently, an iterative reading normally occurs with imperfective events, rather than perfective ones. This is not to say that perfective events of the same kind cannot be repeated in Russian. In fact, perfective events are compatible with adverbial quantifiers, such as *three times* in (49a). On the other hand, frequency modifiers, such as *every day*, are outlawed with perfectives, as shown in (49b). I conclude that an iterative interpretation is most natural with the imperfective verbs.

(49) a. Oleg pročital'PRF Voj'nui Mir tri raza.
    Oleg read War and Peace three times
    'Oleg read War and Peace three times.'
b. * Oleg pročital PRF Voj'nu i Mir každyj den'.

Oleg read War and Peace every day

It seems that iterativity and imperfectivity are two separate, yet related semantic operations in Russian. The detailed analysis of imperfectivity and iterative readings would, however, take us far beyond the scope of this work.

So far, I discussed morphological and semantic properties of the grammatical aspect in Russian. Now, I shall look into the interaction between the grammatical aspect and the Vendlerian lexical classes of verbs.

1.3.2 Lexical Aspect vs. Grammatical Aspect in Russian

A relevance of the Vendlerian classes in Russian and their interaction with the grammatical aspecual categories has been discussed in a fair number of works (Brecht 1985, Bulygina 1982, Flier 1985, Kučera 1983, Mehlig 1985, Padučeva 1989, 1996, 2004, Braginsky & Rothstein 2008, among others). An important question to ask is whether the Vendlerian classes of verbs are independent of the perfective/imperfective distinction, or whether they are subsumed under the grammatical aspecual categories of perfectivity and imperfectivity. The answer to this question is not straightforward – some lexical classes of verbs correlate with the grammatical categories of aspect, while others cut across the aspecual distinction. Let's review the interaction of Vendlerian classes with the grammatical aspect in Russian class-by-class.

States: states are events that take place over extended intervals of time. States are true at instants and remain the same throughout the whole interval they hold place. Some states, such as love in (50a), allow variations in their intensity, while others, like know in (50b), do not.

(50) a. John loved Mary more and more.

b. * John knew French more and more.

State verbs in Russian are normally imperfective. Perfectivized state verbs are type-shifted into achievements, undergoing a change in their lexical meanings. For
instance, an imperfective state verb $znal'$IMP (to know) in (51a) becomes a perfective achievement $uznal'$PRF (to recognize) in (51b) and $videt'$IMP (to see) in (52a) undergoes a shift into achievement $uvidet'$PRF (to notice) in (52b). Some state verbs, such as $žit'$IMP (to live) in (53a), can occur with the prefixes $PO$- and $PRO$-, which delimit their temporal duration without changing their lexical aspectual class. E.g., $požit'$IMP (to live) in (53a) entails that a state of living in Moscow ended within a year.

(51) a. Ivan $znal'$IMP Petju.
    Ivan knew Petja
    'Ivan knew Petja.'
    b. Ivan $uznal'$PRF Petju.
    Ivan recognized Petja
    'Ivan recognized Petja.'

(52) a. Ivan $videl'$IMP iz okna, $čto tvoritsja'$IMP snaruži.
    Ivan saw from window what happens outside
    'Ivan saw from the window what goes on outside.'
    b. Ivan $uvidel'$PRF iz okna, $čto tvoritsja'$IMP snaruži.
    Ivan saw from window what happens outside
    'Ivan took a sight from the window on what goes on outside.'

(53) a. Ivan $žil'$IMP v Moskve god.
    Ivan lived in Moscow year
    'Ivan lived in Moscow for a year,'
    b. Ivan $požil'$PRF v Moskve god.
    Ivan PRO-lived in Moscow year
    'Ivan lived in Moscow for a year.'

Achievements: Achievements are near-instantaneous events of change from one state of affairs into another. In Russian, achievement verbs are normally perfective. Achievements can undergo a secondary imperfectivization, but then, as observed in Padučeva 1996, they acquire only an iterative or habitual reading, as in (54b).
Activities: Activities are events that hold for extended temporal intervals rather than instants. Activities consist of micro-events of the same kind that cannot be decomposed any further. Though activities are naturally imperfective, they can undergo a perfectivization with the prefixes PO- and PRO- without changing their aspectual type and lexical meanings. The resulted perfective activities (delimitativy in Padučeva's 1996 terminology) are still compatible with for X time modification, as shown in (55).

(55) a. Ivan guljal \textsuperscript{IMP} po parku čas.
   Ivan walked in park
   'Ivan walked in the park for an hour.'
   b. Ivan poguljal \textsuperscript{PRF} po parku čas.
   Ivan PO-walked in park hour
   'Ivan took a walk in the park for an hour.'

The difference between (55a) and (55b) is that the former does not entail that the walking event came to its end after an hour, while the latter commits Ivan to stop walking in the park after an hour has passed\(^6\).

Some activities undergo a perfectivization with the perfectivizing suffix \textit{nu}-.
Activities, derived by \textit{nu}-, are shifted into a semelfactive reading. Some examples are \textit{prygat'}\textsuperscript{IMP} – \textit{prugnut'}\textsuperscript{PRF} (to jump – to make one jump), \textit{tolkat'} \textsuperscript{IMP} – \textit{tolknut'}\textsuperscript{PRF} (to push – to give one push), \textit{maxat'} \textsuperscript{IMP} – \textit{maxnut'}\textsuperscript{PRF} (to wave – to wave once).

\(^6\) Bulygina 1982:61 claims that the perfective activity \textit{poguljat'}\textsuperscript{PRF} (to take a walk) does not entail that \textit{X bol'se ne guljaet} \textsuperscript{IMP} (X does not walk anymore). I disagree with this claim: obviously, X did not lose its ability to walk, but the concrete event of walking during a specific time-frame, referred to by the perfective \textit{poguljat'}\textsuperscript{PRF}, is over.
Accomplishments: Accomplishments are complex events of change that hold for non-instantaneous temporal intervals. Accomplishment verbs appear in Russian in both perfective and imperfective verb forms (Padučeva 1996, Braginsky & Rothstein 2008). Thus, (56a) is an imperfective accomplishment and (56b) is a perfective one.

(56) a. Ivan čital IMP knigu.
   Ivan read book
   'Ivan read a/the book.'
   b. Ivan pročital PRF knigu.
   Ivan read book
   'Ivan read the book.'

One may argue that čital' IMP in (56a) is not an accomplishment, but rather an activity, similarly to guljal IMP (to walk) in (55a). In fact, imperfective activities and accomplishments are both compatible with for X time modifier. There is a certain difference, though, between these two event types. As proposed in Rothstein 2004, accomplishment events have inherently ordered stages in their denotation while activities lack such internal ordered structure. In Russian, this distinction between accomplishment and activity events is manifested in their behavior with the incremental modifiers gradually and X-by-X. Imperfective accomplishments occur with such incremental modifiers, while imperfective activities are disallowed with them (with a possible exception of determinate motion verbs that allow incremental modification with units of distance, like km-by-km) (Braginsky & Rothstein 2008).

(57) a. Ivan čital IMP knigu postepenno / glava za glavoj.
   Ivan read book gradually chapter-by-chapter
   'Ivan read a book gradually / chapter-by-chapter.'
   b. * Ivan guljal IMP postepenno / šag za šagom.
   Ivan walked gradually step-by-step

To sum up, accomplishments are the only Vendlerian lexical class of verbs that is naturally expressed by both perfective and imperfective verbs in Russian. States and activities are by default restricted to imperfective aspect, but can be perfectivized with
the prefixes *PO* and *PRO*-. Achievements, on the other hand, are perfective and acquire a habitual or an iterative reading in the imperfectivized form. The correlation between the grammatical aspect and the lexical aspectual Vendlerian classes of verbs in Russian is summarized in the table 1.3.

<table>
<thead>
<tr>
<th>Table 1.3</th>
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<tbody>
<tr>
<td>Correlation between the Grammatical Aspect and the Vendlerian Classes in Russian</td>
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<tr>
<td></td>
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<tr>
<td><strong>States</strong></td>
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<td><strong>Activities</strong></td>
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<td><strong>Achievements</strong></td>
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<tr>
<td><strong>Accomplishments</strong></td>
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### 1.4 Semantics of Prefixation

As mentioned earlier, the prefix *ZA*- is one of the verbal perfectivizing prefixes in Russian. Isačenko 1960 defines prefixes as morphemes with their own semantics, that can be freely singled out on the basis of semantic analysis of a verb, and that determine the individual meaning of simple imperfective verbs in some way or another (Isačenko 1960: 148). Isačenko 1960 provides the following list of eighteen verbal prefixes in modern Russian, including their allomorphic variants (in parantheses). I do not gloss the prefixes due to their polysemy: each prefix is associated with a number of meanings and, thus, cannot be given a single translation, as I have shown in the case of *ZA*-.

(58) **The Verbal Prefixes in Russian**

\[ V^- (\text{VO}^-); \, VZ^- (\text{VS}^-, \text{VZO}^-); \, VY^-; \, DO^-; \, ZA^-; \, IZ^- (\text{IS}^-; \text{IZO}^-); \, NA^-; \, NAD^- (\text{NADO}^-); \, O^- (\text{OB}^-, \text{OBO}^-); \, OT^- (\text{OTO}^-); \, PERE^-; \, PO^-; \, POD^- (\text{PODO}^-); \, PRI^-; \, PRO^-; \, RAZ^- (\text{RAS}^-, \text{RAZO}^-); \, S^- (\text{SO}^-); \, U^- \].
Analogously to the prefix \( ZA^- \), each of the aforementioned prefixes can alter a lexical meaning (and/or argument structure) of imperfective verbs in more than one way. Moreover, a prefixed basic imperfective verb is uniformly shifted into a perfective one. This fact provides grounds for a debate in linguistic literature on the status of the verbal prefixes in the aspectual system of Russian, as will become evident in the course of the following discussion.

1.4.1 Prefixes: Inflectional vs. Derivational

One of the undisputable facts of Russian aspectology is that there is a clear correlation between prefixation and perfectivization in Russian. Adding the verbal prefixes in (58) to the basic imperfective verbs in Russian ultimately leads to their perfectivization, but in many cases also alters their lexical meanings (and/or argument structure). Thus, it is unclear whether perfectivization and verbal prefixation in Russian are separate (but related) operations – a view taken in Isačenko 1960, or whether it is the same process. In other words, are prefixes inflectional elements that change the aspectual status of imperfective verbs? Or are they derivational elements that alter lexical meanings of basic imperfectives? Or sometimes the former and sometimes the latter?

Some traditionalist approaches to the semantics of Russian aspect (Tikhonov 1962, Avilova 1972) divide the prefixes in Russian into pure perfectivizers that shift imperfective verbs into perfective ones without affecting their lexical meaning, and Aktionsarten – lexical derivational prefixes that change lexical meanings of imperfective verbs (see Forsyth 1970: 33-46 for a list of the Aktionsarten prefixes). On this account, perfective verbs are also divided into two types. The ones that are derived by the pure perfectivizing prefixes stand in an aspectual pair relation with their imperfective counterparts. The Aktionsarten perfective verbs, on the other hand, do not form aspectual pairs with their imperfective correlates (but form such pairs with their secondary imperfective forms, derived by the imperfectivizing suffix \(-VA\)).

The following example in (59) illustrates some of perfective forms, which can be derived from a single imperfective verb \( stroit' \) (to build) by various verbal prefixes. Only one derived form in (59) – \( postroit' \) (to build) – is considered as an authentic perfective correlate of \( stroit' \) (to build), standing in an aspectual pair
relation with its imperfective counterpart. The other prefixed verbs in (59) are derived from $stroit'_{\text{IMP}}$ (to build) by the Aktionsarten prefixes in Russian.

(59) **Multiple Prefixed Perfectives, Derived from the verb to build.**

<table>
<thead>
<tr>
<th>Basic Imperfective Form</th>
<th>Derived Perfective Forms</th>
<th>Secondary Imperfective Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>$stroit'$ (to build)</td>
<td>PO$stroit'$ (to build)</td>
<td></td>
</tr>
<tr>
<td>$ZAstroit'$ (to build up area)</td>
<td>$ZAstraivat'$</td>
<td></td>
</tr>
<tr>
<td>$NAstroit'$ (to build a lot)</td>
<td>$NAstraivat'$</td>
<td></td>
</tr>
<tr>
<td>$NADstroit'$ (to build on top)</td>
<td>$NADstraivat'$</td>
<td></td>
</tr>
<tr>
<td>$PEREstroit'$ (to rebuild)</td>
<td>$PEREstraivat'$</td>
<td></td>
</tr>
<tr>
<td>$VYstroit'$ (to erect)</td>
<td>$VYstraivat'$</td>
<td></td>
</tr>
<tr>
<td>$DOstroit'$ (to finish building)</td>
<td>$DOstraivat'$</td>
<td></td>
</tr>
</tbody>
</table>

**Aspectual Pair:** $stroit'_{\text{IMP}}$ – postroit$'_{\text{PRF}}$ (to build)

The traditionalist approaches to prefixation, however, struggle to explain the Aktionsarten verbs. Since these verbs are perfective as well, the Aktionsarten are characterized as a lexical-grammatical category in which a lexical part cannot be clearly separated from a grammatical one (Forsyth 1970). In such a case, it looks like the Aktionsarten prefixes serve as both inflectional and lexical derivational operators in the aspectual system of Russian, which is a problematic view from a grammatical perspective.

Though the view of Slavic verbal prefixes as inflectional markers of perfectivity is firmly enrenched in the literature (Binnick 1991, Kipka 1990, Piñón 1994, Zucchi 1999), others have argued against such approach and, consequently, against the validity of the aspectual pairs, formed by prefixation (Isačenko 1960, Schooneveld 1978, Filip 2000, 2003). The arguments against the existence of pure perfectivizing prefixes are summarized in Filip 2000, 2003. First, none of the 18 prefixes in Russian serves as a pure 'lexically empty' perfectivizing prefix across all the imperfective verbs. The same prefix that has a pure perfectivizing effect with some verbs alters lexical meanings of others (and in more than one way). Moreover, a single prefix does not necessarily occur with all the lexical imperfective verbs in Russian. On the other hand, a number of distinct prefixes can apply to the same basic verb each, as
illustrated in (59) above. Second, in some cases, verbal prefixes are attached to
perfective verbs, basic or derived by another prefix. In the latter case, each additional
prefix contributes to the alternation of the overall lexical meaning of a given verb.
Filip 2003 provides the following example of multiple prefixation in (60).

(60) dat\textsuperscript{PRF} (to give) – po-dat\textsuperscript{PRF} (to pass) – pere-po-dat\textsuperscript{PRF} (to pass too far)

In (60), the prefix \textit{PO}- applies to the basic perfective verb \textit{to give}, changing its
meaning into \textit{to pass}. Then, the subsequent prefix \textit{PERE}- alters the meaning of \textit{to
pass} into \textit{to pass too far}. In such a way, example (60) illustrates that the verbal
prefixes in Russian are not limited to applying to imperfective verbs only, as one
would expect from the grammatical markers of perfectivity.

Filip 2000 (and elsewhere) assumes that prefixation is a separate process from
perfectivization. The verbal prefixes are not grammatical markers of perfectivity in
Russian; rather they are derivational elements, modifying lexical meaning (and/or
argument structure) of the basic imperfective verbs. In Filip's view, the so-called
aspectual pairs of perfective – imperfective verbs, such as \textit{stroit}'\textsuperscript{IMP} – \textit{postroit}'\textsuperscript{PRF} (to build) in (59), are cases in which the semantic contribution of the prefix is so close to
the lexical meaning of an original imperfective verb that an illusionary effect of a
'lexically empty', or pure, perfectivization arises. I agree with Filip's assumption and
adopt it in my analysis of the prefix ZA-.

If the verbal prefixes in Russian are not grammatical markers of perfectivity, then
why does prefixation lead to perfectivization of the basic imperfectives in Russian? It
seems that the prefixes in some way trigger a subsequent application of the (morpho-
logically null) perfectivizing operator to a prefixed verb. A formal explanation of the
correlation between prefixation and perfectivity in Russian will be provided in chapter
VII, where I discuss Rothstein 2007 theory of telicity and Filip & Rothstein 2006
account of the perfectivizing operator in Slavic languages.

1.4.2 Semantic Role of Prefixation

Assuming that verbal prefixes are not inflectional components, what semantic role
do they play in the verbal system in Russian? Filip & Rothstein 2006 proposes to treat
prefixes as extensive measure functions (Krifka 1998), which apply to some measured
entity $X$ (e.g., object, location, temporal trace of event) and yield a range of values for
$X$ with respect to some relevant ordered measure scale, so that the value of $X$ is equal to (or exceeds or falls short of) some contextually predetermined value on the scale. The generalized semantic representation of a prefix is given in (61) [taken from Filip & Rothstein 2006].

(61) **Meaning of a Prefix as Extensive Measure Function**

$$\text{PREFIX}_\mu \rightarrow \lambda x \ [\mu_C(x) = n_C],$$

where $n_C$ stands in a mathematical relation $r$ (e.g., $=, <, >, \leq, \geq$) with some contextual or conventional value of comparison $C_C$.

Thus, a verbal prefix provides a contextually determined value $n_C$ for the measured entity $x$ on the corresponding measure scale, relatively to some (contextually or conventionally provided) value of expectation $C_C$. Filip 2000 demonstrates how the mechanism in (61) works in the case of the accumulative prefix $NA$- and the attenuative prefix $PO$- in Russian (in short, $NA_{-ACM}$ and $PO_{-ATN}$). The prefix $NA_{-ACM}$ restricts the value of $x$ to be above some default value of expectation, while the prefix $PO_{-ATN}$ sets a possible range of values for $x$ below a certain value of comparison. The semantic representations of $NA_{-ACM}$ and $PO_{-ATN}$ are given in (62) below (Filip 2000, Filip & Rothstein 2006).

(62) a. $NA_{-ACM}$: $\lambda x \ [NA_{ACM}(x) = n_C \land n_C \geq C_C]$, where $C_C$ is relatively high value

b. $PO_{-ATN}$: $\lambda x \ [PO_{ATN}(x) = n_C \land n_C \leq C_C]$, where $C_C$ is relatively low value

When the prefixes $NA_{-ACM}$ and $PO_{-ATN}$ measure a temporal trace of an event, as in the case of $guljat^{IMP}$ (to walk) in (63), the meaning of $NA$-walk would imply that the walking event lasted longer than normally expected, while $PO$-walk would mean that a walking event had a relatively short temporal duration.

(63) a. Ivan naguljalsja$^{PRF}$.

Ivan NA-walked-sja

'Ivan walked a lot.'

$\exists e [WALK(e) \land Agent(e) = Ivan \land \tau(e) = i \land i \geq DEFAULT_C]$
b. Ivan poguljat\textsuperscript{PRF}.

Ivan PO-walked

'Ivan walked for a short time'

\[ \exists e \left[ \text{WALK}(e) \land \text{Agent}(e) = \text{Ivan} \land \tau(e) = i \land i \leq \text{DEFAULT}_C \right] \]

[i stands for a contextually determined temporal interval, while DEFAULT\textsubscript{C} is a
temporal value for what counts as a normative walking event in the given context]

Following Filip 2000, Filip & Rothstein 2006, I assume that, similarly to the
prefixes PO-\textsubscript{ATN} and NA-\textsubscript{ACM}, the prefix ZA- serves as a measure function on events.
In such a case, the semantic analysis of ZA- needs to explain which entities are
measured by the prefix ZA- and in what way. Moreover, as observed in 1.1, such
analysis has to account for the effects of ZA- on lexical meanings and/or argument
structures of basic verbs and for its role in the word formation process in Russian. In
the following section 1.5, I present my research strategy for achieving those goals.

1.5 Research Strategy

How does one define the semantic properties of a verbal prefix? This question is
discussed at length in M.A. Krongauz's work \textit{Pristavki i glagoly v russkom jazyke}
[Prefixes and verbs in Russian] (Krongauz 1998). Krongauz 1998 introduces a
concept of a semantic network of a prefix. A semantic network of
meanings shall account for specific meanings, associated with the given prefix,
provide the transfer rules from more abstract, or 'invariant', meanings of the prefix to
its particular instantiations, and explain an interaction of semantics of the prefix with
semantics of unprefixied verbs and contextual factors\textsuperscript{7}. An ideal semantic network of
meanings has to provide a systematic model of the behavior of the given prefix in the
language, predicting the range of its meanings and its word formational capabilities.

In Krongauz's view, a semantic network of prefixal meanings is a multi-tiered
system (\textit{mnogojarusnaja sistema}) in which an invariant meaning (or a number of core
meanings) of the given prefix is subdivided into more specific meanings, which in
their turn are subdivided into additional submeanings. A specific meaning of the
prefix is formulated on the basis of a paradigmatic group of prefixed verbs, which
share common semantic and syntactic features. Thus, in Krongauz's (1998) proposal,

\textsuperscript{7} Krongauz 1998 leaves open a question of whether a prefix has a single invariant meaning or a number
of core meanings.
a semantic network of meanings for the given prefix is constructed in a bottom-up fashion, by first compiling a detailed list of specific prefixal meanings and then reconstructing the higher abstract core meanings in the network on the basis of such particular meanings.

The goal that I intend to achieve in this thesis is, thus, to construct a semantic network of meanings for the prefix ZA-. My version of the semantic network of meanings of ZA-, though, differs from the one in the Krongauz 1998 proposal in a few respects. First, I will not attempt to provide a detailed account of the effects of contextual factors on the meaning of a prefix from my account of ZA-. Though a number of works have discussed a role of context in the verbal and/or prefixal semantics in Russian (Krongauz 1994, Filipenko 1997, Zaliznjak 1995), as far as I am aware, the influence of contextual and pragmatic factors on the derivation of prefixed verbs in Russian has not been yet adequately explored. Thus, accounting for the effects of various contextual factors requires first developing an extensive general theory of interaction between context and prefixation and, then, matching this theory against the behavior of the concrete prefix ZA- in Russian. Such task is too complex to be undertaken in the scope of this study and would require writing a separate dissertation on the topic. Nonetheless, I address in this work some contextual issues, which may be relevant for the semantic analysis of ZA-, on a more informal level.

Second, Krongauz 1998 diverges from traditional accounts of prefixation by putting more focus on the semantic analysis of the prefixed verbs, rather than on the interaction of the prefixes with their imperfective bases. A particular meaning of a prefix reflects the common underlying meaning, shared by a certain group of verbs, derived by that prefix. Such outlook on prefixation has certain benefits; for instance, it solves the problem of distinguishing between pure perfectivizers and Aktionsarten prefixes by making it irrelevant at the first place (Krongauz 1998: 155-156). In my view, however, the unprefixed base verbs play a central role in the mechanism of verbal prefixation. As a formal semanticist, I regard verbal prefix as a semantic function that takes a set of verbs as its input and yields a different set of verbs as its output. Consequently, one needs to compare the input of a given function with its output with respect to the relevant semantic parameters in order to reconstruct its semantic mechanism. I will elaborate on this point in chapter III.

A third difference concerns the level of finegrainedness of the prefixal meanings. Krongauz 1998 emphasizes an importance of determining the exact number of fine-
grained meanings and submeanings for a chosen prefix, allowing in principle situations in which a certain submeaning can be represented by a small group of verbs, or even by a single verb. While I myself believe that analyzing the verbs, derived by the prefix $ZA$- (henceforth, I shall call them $ZA$-prefixed verbs) and dividing them into distinctive thematic subclasses is a vital part of exploring the semantics of $ZA$-, I am less concerned with the precise number of meanings and submeanings, associated with $ZA$-. The reason for that is that I also rely on a different research strategy that employs a top-down approach in reconstructing the semantic properties of $ZA$-. In particular, my analysis of $ZA$- draws on the formal theory of prefixation in Filip & Rothstein 2006, which is consistent with the neo-Davidsonian event-based framework. As outlined in 1.4.2, the aforementioned theory provides a general mechanism for defining a semantic function of a verbal prefix in Russian. I would need, then, to extend this mechanism to account for the specific semantic properties of the prefix $ZA$-, which will emerge from the bottom-up analysis. In such a way, I use a dual research strategy in developing the semantic account of $ZA$-. On the one hand, I deduce the mode of usage of $ZA$- on the basis of the range of $ZA$-prefixed verbs in the lexicon, compared to their unprefixed counterparts. On the other hand, I rely on the formal tools, adopted from generative linguistics, to match the specific semantic properties of $ZA$- against the generalized accounts of prefixation and perfectivity in Russian. Such combination of traditional and formal theoretical approaches to prefixation will enable to formalize some aspects of the semantics of $ZA$-, allowing making predictions with respect to its interaction with certain unprefixed verbs and the resulting meanings. Nonetheless, some components of the semantic account of $ZA$- will have to be explained in terms of informal intuitive definitions. This case study of the prefix $ZA$- represents, in some sense, an attempt to check to which extent semantics of a verbal prefix can be formalized, and how the limitations of a formal approach to prefixation can be overcome by reverting to the more informal traditional methods of describing linguistic phenomena.

To conclude, I will explore the semantics of the verbal prefix $ZA$- in Russian by undertaking the following steps:

a) divide $ZA$-prefixed verbs in the lexicon into distinguishable thematic classes from which the specific meanings, associated with the prefix $ZA$-, can be reconstructed.
b) look at the effects of the prefix ZA- on the corresponding unprefixed verbs by comparing the unprefixed and the prefixed forms with respect to a lexical aspectual class, lexical meaning and argument structure.

c) develop a formal analysis of the particular semantic meanings of ZA- on the basis of the findings, obtained in b).

d) provide an invariant meaning of the prefix ZA- on the basis of its particular meanings and describe the transfer rules from the invariant meaning to the specific ones.

e) explain the word-formational function of ZA- as a part of its general effect on the lexical meaning and argument structure of its input verbs.

The structure of this dissertation is as follows. Chapter II reviews some previous proposals of the semantics of the prefix ZA- in the linguistic literature. I discuss some benefits and disadvantages of such proposals and their relevance for my research. Chapter three distinguishes three core meanings of the prefix ZA- and discusses the first meaning – the spatial meaning of ZA-. It provides a comparison between the ZA-prefixed verbs, associated with the spatial meaning of ZA-, and their imperfective correlates. A formal analysis of the spatial meaning of ZA- is then developed on the basis of this comparison. Fourth chapter provides the discussion of the resultant meaning of ZA-, which is further divided into several submeanings. Analogously to chapter III, chapter IV compares between the ZA-prefixed resultant verbs and their unprefixed counterparts and presents a formal analysis of the given meaning. In a similar fashion, the fifth chapter introduces the inchoative meaning of ZA-, looks at the semantic properties of the inchoative ZA-prefix verbs and their bases and provides a formal account for that meaning. Chapter VI proposes a way to narrow down the three core meanings of ZA-, established in the previous chapters, to a single invariant meaning. It presents the transfer rules from the invariant meaning to the three core meanings of ZA-, developed in the previous chapters. It also discusses the shifts in lexical meaning and argument structure, imposed by the prefix ZA- on its input verbs, as well as its word-formational characteristics (manifested in the case of the 'empty-based' verbs). Finally, the seventh chapter explains the correlation between prefixation and perfectivity in Russian and lays out a semantic network of meanings of ZA-, based on the findings and analyses in the preceding chapters.
Chapter II.
The Prefix ZA- in the Literature.

2.1 Introduction

In this chapter, I discuss a number of proposals of the semantics of ZA- in the literature and outline my approach to the given issue. The verbal prefix ZA- has received a substantial attention in the literature on verbal prefixation in Russian (Boguslawski 1963, Dickey 2000, Ferm 1990, Golovin 1964, Isachenko 1960, Janda 1986, Keller 1992, Paillard 1991, Ovčinnikova 1979, van Schooneveld 1978, Šeljakin 1969, Valeeva 2001, Zemskaja 1955, Zaliznjak 1995, among others). Since each study examines the semantics of ZA- from a different angle, it is virtually impossible to provide a full overview of all the above-mentioned sources within the given chapter (see a detailed discussion of various accounts of verbal prefixation in Russian in Krongauz 1998: chapter 2). Roughly generalizing, however, it can be said that the studies of the prefixal semantics in Russian in general (and the semantics of ZA- in particular) are based on one of the following theoretical accounts of prefixation: a homonymy approach, an invariant approach and a polysemy approach.

A homonymy approach is concerned with identifying particular meanings of a given prefix on the basis of the prefixed verbs in the lexicon. Under such approach, a prefix is viewed as a syncategorematic element, which does not have an identifiable semantic mechanism of its own, but is rather analyzed as part of the meaning of a prefixed verb. As mentioned in the previous chapter in the discussion of Krongauz's (1998) proposal, a meaning of the prefix is recovered on the basis of some group of prefixed verbs that share common semantic-syntactic characteristics. A homonymy approach, thus, presents a list of separate meanings, associated with a certain prefix, as in the works of Ovčinnikova 1979, Keller 1992 and Zaliznjak 1995.

An invariant approach to prefixation presupposes that a prefix has an abstract invariant meaning and focuses on the identification of that core abstract meaning, which all the particular prefixal meanings are derived from. An invariant meaning of the prefix is constructed in a bottom-up fashion by taking a wide range of meanings, denoted by the prefixed verbs, and reducing them to a common semantic
denominator. Some invariant approaches to prefixation in Russian are presented in such works as van Schooneveld 1978, Flier 1975 and Paillard 1991.

An integrated polysemy approach combines the insights of homonymy and invariant accounts. On the one hand, it provides a list of specific meanings of a certain prefix, expressed by the corresponding prefixed verbs. On the other hand, it concentrates on establishing systematic relations between an invariant meaning of a given prefix and its particular instantiations. Krongauz's (1998) idea of a semantic network of prefixal meanings and Janda's (1986) account of the prefixes ZA-, PERE-, DO- and OT-, conducted in the framework of cognitive linguistics, are examples of an integrated polysemy approach to prefixation.

In the following sections 2.2-2.4, I provide a representative sample of three accounts of ZA-, with each study corresponding to one of the aforementioned approaches, respectively. I discuss the merits and the shortcomings of each study and their relevance for my own account of the prefix ZA-.

2.2 A Homonymy Approach to the Semantics of the Prefix ZA-

A variation of a homonymy approach is illustrated in the discussion of the meanings of ZA- in Zaliznjak 1995. To be fair to the author, Zaliznjak's (1995) analysis of the prefix ZA- is not a purely homonymic account, since the author does not exclude a possibility of the polysemy relation between the various meanings of ZA-. Rather, Zaliznjak 1995 correctly observes that both the homonymy and integrated polysemy approaches require individuating some distinguishable groups of prefixed verbs, which reflect specific meanings of a given prefix. Thus, the given study sets the objective to differentiate between various meanings of ZA-, expressed by the distinct groups of ZA-prefixed verbs in the lexicon of Russian, without making any preference in favor of either a homonymy or a polysemy approach.

Zaliznjak 1995 defines a meaning of ZA- as an intuitive semantic attribute (semantičeskij priznak), realized in the lexical meaning of a certain ZA-prefixed verb. A prefixed verb may be associated with a number of such attributes, allowing an intersection of multiple meanings of ZA- in a single ZA-prefixed verb form. The main criterion for individuating a particular semantic meaning of ZA- in Zaliznjak 1995 is based on the two following requirements: 1) existence of a ZA-prefixed verb that alternates between the given meaning and another meaning of ZA-; 2) existence of a
ZA-prefixed verb, associated primarily with the given meaning. For instance, Zaliznjak 1995 distinguishes between the two meanings of ZA-, DAMAGE and ANNIHILATE, on the grounds that the ZA-prefixed verb zalečit\(^{\text{PRF}}\) (to cure) has two distinct interpretations in Russian dictionaries: a) zalečit\(^{\text{PRF}}\) čeloveka (to cause damage to one's health by excessive healing), expressing the meaning of DAMAGE; b) zalečit\(^{\text{PRF}}\) ranu (to heal the wound), describing the 'destruction' of the wound by the means of healing; i.e., ANNIHILATE. While DAMAGE and ANNIHILATE are semantically close meanings, the former describes causing damage to one's health, while the latter entails a total destruction of a material object. A straightforward implication of Zaliznjak's analysis is that a semantic meaning of ZA- is recognized as such only if the lexicon has at least one ZA-prefixed verb, displaying an alternation between that meaning and another meaning of ZA-. To illustrate this point, Zaliznjak 1995 cites a small group of verbs, such as zakupit\(^{\text{PRF}}\) (to buy a lot) and zagotovit\(^{\text{PRF}}\) (to prepare a lot) that some researchers (e.g., Paillard 1991) associate with the meaning IN ADVANCE. Zaliznjak claims that the ZA-prefixed verbs zakupit\(^{\text{PRF}}\) and zagotovit\(^{\text{PRF}}\), associated with the IN ADVANCE meaning of ZA-, do not express any alternative meanings besides IN ADVANCE. Therefore, according to the above-mentioned selection criterion, IN ADVANCE is not a separate meaning of ZA-, but rather a part of the more general meaning from afar. This meaning refers either to a reception of an object/a sound from a far distance (as in zaslyšat\(^{\text{PRF}}\) – to hear from afar, zavidet\(^{\text{PRF}}\) – to see from afar) or, in the case of zakupit\(^{\text{PRF}}\) (to buy a lot [in advance]) and zagotovit\(^{\text{PRF}}\) (to prepare a lot [in advance]), a perception of an anticipated future event that leads to the buying/preparing event taking place (e.g., Ivan zakupil\(^{\text{PRF}}\) spički v ožidanii vojny – Ivan bought lots of matches in expectation of a war). Nonetheless, Zaliznjak 1995 allows some exceptions, which circumvent the alternation requirement of the selection criterion above. For instance, the meanings of CLOSE, HIDE, REDUCE and EXCESS are proposed as a part of the inventory of meanings of ZA- despite the absence of ZA-prefixed verbs, alternating between these meanings and some other meanings of ZA-.

Having clarified the selection criterion for distinguishing the meanings of ZA-, Zaliznjak 1995 provides a list of such prefixal meanings, with each meaning illustrated by a sample of ZA-prefixed verbs, associated with it. The meanings of ZA- are presented as semantic labels with no further explanations; since the author
assumes that their interpretation is intuitively clear (Zaliznjak 1995: 158). Some meanings are further subdivided into additional submeanings, as shown in (1).

(1) A List of the Meanings of *ZA*- (Zaliznjak 1995: 158-160)

**Meaning 1:** BEGIN. Some typical examples of this meaning are *zašumet*^PRF (to start making noise), *zazvenet*^PRF (to start ringing), *zasomnevavat’sja*^PRF (to begin to hesitate).

**Meaning 2:** BECOME. Some typical examples are *zagustet*^PRF (to thicken), *zaledenet*^PRF (to become frozen), *zakisnut*^PRF (to become sour).

**Meaning 3:** COVER. Some typical examples are *zavešat*^PRF [*stenu kartinami*] (to hang pictures all over the wall), *zastroit*^PRF [*pole domami*] (to build houses all over the field), *zarisovat*^PRF [*list bumagi*] (to paint all over the page).

COVER is subdivided into the meanings of FILL, CLOSE and HIDE, as follows:

- **FILL.** Some examples are *zalit*^PRF *bak vodoj* (to fill a tank with water), *zaselit*^PRF *dom žil’izami* (to populate the house with residents).
- **CLOSE.** Some examples are *zakryt*^PRF *glaza* (to close eyes), *zapec*^PRF *konvert* (to seal an envelope).
- **HIDE.** Some examples are *zaprjatat*^PRF (to hide), *zamaskirovat*^PRF (to mask)

**Meaning 4:** FIX. Some examples of this meaning are *zasnjat*^PRF (to film), *zapisat*^PRF (to write down), *zazubrit*^PRF (to memorize).

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8 Zaliznjak 1995 uses English words as labels for the meanings of *ZA*. Thus, the names of the meanings in (1) are not my translations, but are taken from an original text of the author.
Meaning 5: DAMAGE. Some examples are zakusat\textsuperscript{PRF} (to bite badly), začitat\textsuperscript{PRF} (to damage by reading), zakurit\textsuperscript{PRF} (to make one sick by smoking).

DAMAGE is subdivided into KILL, ANNIHILATE, REDUCE and EXCESS.

- KILL. Some examples are zakolot\textsuperscript{PRF} (to stab to death), zabit\textsuperscript{PRF} (to beat to death).

- ANNIHILATE. Some examples are zastirat\textsuperscript{PRF} pjetno (to wash off a stain), zalečit\textsuperscript{PRF} ranu (to heal a wound).

- REDUCE. Some examples are zaglušit\textsuperscript{PRF} golod (to dull the edge of hunger), zagovorit\textsuperscript{PRF} kogo-to (to confuse someone by talking).

-EXCESS. This meaning is mostly combined with DAMAGE, as in zacelovat\textsuperscript{PRF} rebenka (to shower kisses on a child).

Meaning 6: GET. Some typical examples are zavoevat\textsuperscript{PRF} (to conquer), zaslužit\textsuperscript{PRF} (to earn), zavladet\textsuperscript{PRF} (to take possession of).

Meaning 7: SPACE, BEHIND. Some typical examples are zajti\textsuperscript{PRF} za dom (to go behind the house), zapit\textsuperscript{PRF} xleb vodoj (to gulp the bread down with water).

The SPACE meaning is subdivided into IN, DEVIATE-IN, EDGE, UP, FAR and FAR-IN.

- IN. Some examples are zalezt\textsuperscript{PRF} (to climb into), zagljanut\textsuperscript{PRF} (to look into).

- DEVIATE, IN. Some typical examples are zajti\textsuperscript{PRF} k drugu (to drop in to visit a friend), zaskočit\textsuperscript{PRF} v gosti (to unexpectedly visit someone).

- EDGE. Some typical examples are zamočit\textsuperscript{PRF} (to slightly wet), zapilit\textsuperscript{PRF} (to saw off a bit).

- UP. A typical example is zalezt\textsuperscript{PRF} na goru (to climb up the mountain).

- FAR. Some typical examples are zavidet\textsuperscript{PRF} (to see from afar), zaslyšat\textsuperscript{PRF} (to hear from afar).

- FAR, IN. A typical example is zabrosit\textsuperscript{PRF} desant v tyl vraga (to land troops in enemy's rear).

Meaning 8: BAD. This meaning is realized in combination with other meanings. It adds a negative flavor to a verb. A typical example is FIX, BAD zateoretizirovat\textsuperscript{PRF} stat'ju (to overtheorize an article).
Zaliznjak's (1995) analysis, thus, identifies seven basic meanings of ZA-, further subdivided into 13 additional submeanings (plus the negative BAD meaning, expressed only in combination with another meaning of ZA-). Zaliznjak 1995 allows different meanings of ZA- to intersect, expanding, in such a way, the number of thematic classes of ZA-prefixed verbs in Russian. For example, in Zaliznjak's account, the verb zabit’\(^{\text{PRF}}\) in zabit’\(^{\text{PRF}}\) ščel vatoj (to fill up a gap with cotton wool) simultaneously conveys three distinct meanings of ZA-: FILL, CLOSE and ANNIHILATE. The gap is filled up by cotton wool, substantiating the FILL meaning. In the course of this filling up event, the gap is sealed (CLOSE) and completely disappears (ANNIHILATE). In this fashion, the ZA-prefixed verbs, associated with the FILL, CLOSE, ANNIHILATE meanings of ZA-, such as zabit’\(^{\text{PRF}}\) above, form a separate thematic category of ZA-prefixed verbs, distinguishable from the ones that express only one or two of these meanings (e.g., only FILL or CLOSE or FILL, CLOSE). Zaliznjak does not explicitly estimate the number of classes of ZA-prefixed verbs in the lexicon, though the author provides a partial dictionary of ZA-derived verbs in the lexicon. The given dictionary, in my estimation, includes about 52 distinct classes of ZA-prefixed verbs, based on the prefixal meanings in (1) and their possible combinations.

Zaliznjak 1995 makes an important point in emphasizing the need for identifying the specific meanings of ZA-, associated with the ZA-prefixed verbs in the lexicon, as a first step in providing a semantic analysis for the prefix ZA-. Since the prefix ZA- is a part of the morphological make-up of ZA-prefixed verbs, having no independent lexical existence of its own, its semantic content needs to be recovered partly by analyzing the ZA-prefixed verbs in the language and dividing them into distinct thematic classes.\(^9\) Thus, an individuation of such classes constitutes a part of the process of developing a comprehensive semantic theory of the prefix ZA-, as will be illustrated in the course of this dissertation. Having said that, the traditionalist homonymy approaches to prefixation that Zaliznjak's analysis draws on suffer from a number of shortcomings.

First, the process of defining particular meanings of the prefix ZA- in traditionalist accounts is based on some vague intuitions rather than the uniform selection criteria.

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\(^9\) Actually, Krongauz 1998 provides some examples from special contexts, such as poetry, where some prefixes are used on their own (following some prefixed verbs, derived with those prefixes). Such autonomous usage of prefixes, however, appears to be rather confined in Russian and requires a strong contextual support.
Consequently, different scholars provide distinct lists of meanings of ZA-, based on their individual intuitions and selection criteria of prefixal meanings. For instance, Zaliznjak 1995 identified seven basic meanings of ZA- (some of which are subdivided into several submeanings), Ovčinnikova 1979 talks about four core meanings (with an additional division into few submeanings), and Keller 1992 proposes the list of the 20 meaning headings for the prefix ZA- (allowing a prefixed verb to express combinations of multiple meanings). Krongauz 1998 recognizes this problematicity of meaning selection in the traditionalist approaches and seeks to ameliorate it by introducing some formal criteria for defining the meanings of a prefix, which are discussed in the following chapter III.

Second, the homonymy approach to prefixation fails to address the issue of relations between the separate meanings of a prefix. Under such a view, a prefix in question is either a single element, which displays a high level of ambiguity between numerous interpretations, or a collection of homophonous morphologically identical verbal prefixes. In such situation, the language learner has no way to derive one meaning from another and is forced to memorize en masse all the ZA-prefixed verbs, associated with each of the particular meanings. This is not enough, though, since the same ZA-prefixed verb can alternate between various meanings of ZA-, as shown in Zaliznjak 1995 analysis. In fact, Zaliznjak 1995 views such alternation as one of the conditions for differentiating between the separate meanings of ZA- (Krongauz 1998 seems to share this view, considering such alternations of meanings as evidence that the meaning of a prefix is not tantamount to the underlying meaning of a given thematic class of prefixed verbs). Thus, one also needs to remember which ZA-prefixed verbs occur with which prefixal meanings, and in which contexts. Then, a whole process of the language acquisition is reduced to memorizing classes of prefixed verbs and their conditions of usage. Such taxonomic outlook on prefixation does not have much explanatory power and seems to be counterintuitive to the laws of the grammar.

A related problem with a homonymy approach concerns the issue of an interaction between the prefixed verbs and their unprefixed correlates. Some homonymy approaches do not address this issue at all or just provide a list of unprefixed verbs, corresponding to a given category of the prefixed ones. Since many unprefixed verbs undergo a change in their lexical meaning, as I demonstrated in the previous chapter.
with some ZA-prefixed verbs, one would also have to learn by heart which unprefixed verbs acquire the given meaning of a prefix. In such a case, however, it is impossible to make any general predictions regarding the interaction of the given prefix with the unprefixed verbs. Zaliznjak 1995 makes an initial attempt to address a problem of the prefix-base verb interaction by looking at the occurrence of the inchoative meaning of ZA- (BEGIN) with the unprefixed verbs. The author analyzes unprefixed verbs that acquire the inchoative meaning of ZA- and concludes that such verbs denote homogeneous unbounded processes. However, the question that arises at this point is why the prefix ZA- assigns the inchoative meaning to this particular type of verbs. The homonymy approaches to prefixation cannot provide an answer to this question, since they define the meaning of a prefix in terms of some general semantic attribute, shared by a group of prefixed verbs, rather than a rule-governed semantic mechanism, which shifts an unprefixed verb into a distinct verb type.

To sum up, a homonymy approach to prefixation is not sufficient by itself for constructing a generalized semantic account for the prefix ZA- due to the fact that it fails to account for relations between distinct meanings of a particular prefix and to address an interaction between a prefix and unprefixed verbs.

2.3 An Invariant Approach to the Semantics of the Prefix ZA-

An invariant approach to prefixation is based on the premise that the various meanings, associated with a certain prefix, can be reduced to a single abstract, or invariant, meaning of the given prefix. A version of the invariant approach to the semantics of the prefix ZA- is provided in Paillard 1991.

Paillard 1991 analyzes the semantics of ZA- in the context of a more general theory of interaction between perfectivity and prefixation in Russian. In Paillard's view, a perfectivization process redefines a semantic relation between a verb and its object. Paillard 1991 presents three arguments to justify this claim. First, unlike their imperfective counterparts, some perfective verbs require a presence of an explicit object, as illustrated in (2) with the verb pisat’IMP (to write) [Paillard 1991: 38].

(2) a. On pisal IMP (pis'mo).
   He wrote letter
   'He wrote (a/the letter).
b. On napisal PRF *(pis’mo).
He wrote letter
’He wrote the letter.’

The imperfective verb \( \text{pisat’}^{\text{IMP}} \) (to write) in (2a) does not require an obligatory direct object, while its perfective counterpart \( \text{napisat’}^{\text{PRF}} \) (to write) in (2b) is not acceptable without an explicit direct object complement.

Second, a choice of a prefix for the same imperfective verb depends on the nature of an object. As an example, Paillard 1991 provides the imperfective verb \( \text{rezat’}^{\text{IMP}} \) (to cut) that acquires several interpretations with different prefixes, depending on the choice of a direct object – \( \text{razrezat’}^{\text{PRF}} \text{verevku} \) (to cut the rope), \( \text{zarezat’}^{\text{PRF}} \text{kuricu} \) (to slaughter the chicken), \( \text{narezat’}^{\text{PRF}} \text{xleb} \) (to slice the bread), \( \text{porezat’}^{\text{PRF}} \text{derevo} \) (to cut a tree a bit), \( \text{srezat’}^{\text{PRF}} \text{mjač} \) (to cut the ball [in sports]).

Third, in some cases the perfectivization process expands the range of objects that can serve as a direct object of a given verb. For instance, *\( \text{stroit’}^{\text{IMP}} \text{pole} \) (to build a field) is infelicitous, but \( \text{zastroit’}^{\text{PRF}} \text{pole} \) (to build the field up) is a normative sentence in Russian.

Finally, perfectivization may lead to an obligatory transitivization of an imperfective verb. Thus, \( \text{sidet’}^{\text{IMP}} \) (to sit) is an intransitive verb in Russian, but \( \text{otsidet’}^{\text{PRF}} \) (to have pins and needles) takes an explicit direct object, as in \( \text{otsidet’}^{\text{PRF}} \text{nogu} \) (to have pins and needles in one's leg).

The observations above led D. Paillard to formulate the following hypothesis of perfectivity in (3).

(3) Perfectivity signifies the delimitation of occurrence of a process with respect to an external boundary mark.

For instance, the perfective verb \( \text{zapit’}^{\text{PRF}} \), derived from the imperfective \( \text{pit’}^{\text{IMP}} \) (to drink), acquires new lexical meanings, such as \( \text{zapit’}^{\text{PRF}} \text{gore} \) (to drown one's grief [in wine]), \( \text{zapit’}^{\text{PRF}} \text{lekarstvo vodoj} \) (to rinse a medicine down with water) and \( \text{zapit’}^{\text{PRF}} \text{kolbasu vodkoj} \) (to suppress a bad taste of sausage with vodka). Paillard 1991 suggests that the starting point for analyzing the meaning of a perfective VP is the lexical features of its direct object. Thus, introducing \text{grief} as the direct object of \text{drink causes}
a lexical reinterpretation of the drinking process into *to drown one's grief by drinking*. The *medicine* and *sausage* objects lead to different reinterpretations of the lexical meaning of the base verb *pit*\(^\text{IMP}\) (to drink) – *to rinse a medicine down* in the former case, *to suppress a bad taste of sausage* in the latter. To put it in more general terms, if \(P\) is a base verb and \(x\) is an object, than the combination of \(P(x)\) causes a particular reinterpretation of the original lexical meaning of \(P\), coupled with a possible shift in its syntactic argument structure.

In Paillard 1991 view, the role of a verbal prefix is, thus, to define the exact nature of the semantic relation between a base verb and an object. Paillard 1991 justifies this hypothesis by analyzing the semantics of the verbal prefix *ZA*-.

Paillard's account is based on a partial list of the meanings of *ZA*- in (4), proposed by some traditional homonymy approaches.

(4) **List of Traditional Meanings of *ZA*-** (Paillard 1991: 41-42)

A. Relocation of an object or a subject to a relatively distant location. Some examples are *zaplyt*\(^\text{PRF}\) *daleko* (to swim far away) and *zajiti*\(^\text{PRF}\) *v glub' lesa* (to walk far into the forest).

B. 'Passing by' Action. A subject deviates from its intended course to a secondary destination. Some examples are *zajiti*\(^\text{PRF}\) *k komu-nibud'* (to visit someone [on the way to some other place]) and *zagljanuti*\(^\text{PRF}\) *v komnatu* (to glance into the room).

C. Cover. An object is covered by another object/substance, as in *zastelit*\(^\text{PRF}\) *stol skatert'ju* (to cover a table with a map) and *zalit*\(^\text{PRF}\) *bak benzinom* (to fill the tank up with fuel).

D. Excessive process, detrimental for the subject. For instance, *zasidetsja*\(^\text{PRF}\) (to stay at one's place for too long) carries a negative flavor with it.

E. To capture, to acquire. Some examples of this category are *zavoevat*\(^\text{PRF}\) (to conquer) and *zabrat*\(^\text{PRF}\) (to take back).

F. To prepare in advance. A typical example of this meaning is *zakupit*\(^\text{PRF}\) (to purchase [goods in advance]).

G. To hurt a person by some action. For example, *zakormit*\(^\text{PRF}\) (to overfeed).

H. Inchoation. An action denotes the beginning of a new process or state of affairs. Some typical examples are *zagovorit*\(^\text{PRF}\) (to start talking) and *zasmejatsja*\(^\text{PRF}\) (to start laughing).
Paillard 1991 formulates the invariant meaning of the prefix \( ZA \)-, manifested in all the particular cases of \( ZA \)-prefixed verbs above, as follows.

(5) \( ZA \)- means that the boundary mark that delimits an occurrence of a relevant process is located externally with respect to the given process, from a notional, subjective, temporal or spatial perspective.

According to Paillard 1991, then, an exteriority of the process, denoted by a \( ZA \)-prefixed verb, is defined in (at least) four different ways – spatial, notional, subjective and temporal. Paillard 1991 explains these abstract notions of exteriority on the basis of some concrete examples from the lexicon.

A spatial exteriority signifies that the delimitation boundary is, in some sense, an external location with respect to the space, initially affected by the given process. The spatial exteriority meaning is subdivided into the two submeanings of Deviation and Detour. In the case of the Deviation submeaning, the location of the spatial boundary that delimits the motion process lies at a considerable distance from the initial path of the subject (often, further than the subject has anticipated). Paillard 1991 illustrates this submeaning with such examples as \( zaplyt^{PRF} daleko v more \) (to swim far into the sea), \( zajiti^{PRF} vglub' lesa \) (to walk deep into the forest) and \( zabrat'sja^{PRF} na veršinu gory \) (to climb up the top of the mountain). The Detour submeaning, on the other hand, implies that the subject deviates from his intended path, as in \( zagljanut^{PRF} v komnatu \) (to glance into the room [while passing by]) and \( po doro ge v institut, zajiti^{PRF} v knižnij magazine \) (on one's way to the institute, to walk into the bookshop).

A notional exteriority occurs when the boundary of the process, expressed by a certain object, is not a priori compatible with the semantics of an unprefixed base verb. In such a case, the prefix \( ZA \)- reinterprets the given base verb to reconcile it with the new object. An example of such reinterpretation is \( zapit^{PRF} gore \) (to drown one's grief [in wine]), mentioned earlier. Some other cases of the notional exteriority meaning of \( ZA \)- depict situations in which an object is, in some sense, removed or recovered from another location. For example, \( zabrat^{PRF} syna v armiju \) (to recruit one's son to the army) refers to a situation in which one's son is taken from his familiar surroundings and is recruited to the army. Another example – \( zamy t^{PRF} pjatno \) (to wash over a stain) – denotes a situation in which the stain is removed from
the surface of a cloth. In these two cases, the notional exteriority interpretation is imposed by the prefix ZA- on the basic imperfective verbs brat'IMP (to take) and myt'IMP (to wash), which do not originally express the meanings of recruiting / removing, described by their ZA-prefixed forms, respectively.

A subjective exteriority denotes a negative or excessive evaluation of the relevant process. An example of this usage of ZA- is zakornit'PRF (to overfeed), which indicates an excessive overfeeding that causes a damage to its recipient. Paillard 1991 notes that this interpretation of ZA- also co-occurs with adding the reflexive particle -sja to the base verb, as in začitat'sja PRF (to become immersed in one's reading), derived from the imperfective čitat'IMP (to read).

A temporal exteriority meaning of ZA- views the boundary mark of a process as a point in time that was not originally meant to be a part of the temporal localization of the given process. For instance, the temporal exteriority meaning may refer to a future anticipated event that prompted a realization of the given process, such as zakupit'PRF (to buy [in preparation to another event]) or zagotovit'PRF (to prepare [in anticipation of another event]). The moment at which the purchased or prepared objects will be utilized is associated with some anticipated, imminent future event. A similar usage of ZA- as a temporal external marker is an inchoative reading, such as zasmejatsja PRF (to start laughing). Paillard 1991 claims that, in this case, the realization of the laughing process itself is an external temporal location; since the burst of laughing occurred suddenly and unexpectedly (while a normative situation in such context would be the one, where no laughing occurred at all).

A major advantage of an invariant approach to prefixation, such as the one proposed in Paillard 1991, over a homonymy approach is that it proposes a unification of the various particular meanings of a prefix under a single core meaning. In such a way, all the particular meanings of the given prefix are regarded as particular instantiations of its invariant meaning. In such a case, a meaning of the prefix can be represented as a uniform semantic mechanism, rather than a list of unrelated semantic attributes. Paillard's (1991) proposal also emphasizes an importance of the interaction between the semantics of a prefix and the semantic properties of one of the arguments of the given verb, such as direct or indirect object (this part of Paillard's (1991) proposal is further elaborated in Paillard 2004, as we will see in chapter VI). While I disagree with the particular theory of perfectivity in Paillard 1991 and some of its
implications on prefixation, I do believe that a semantic relation between a prefix and some argument of an input verb plays an important role in the behavior of a given prefix in the lexicon. Thus, I shall focus on an interaction between the prefix ZA- and some arguments of unprefixed verbs in my semantic analysis of ZA-\textsuperscript{10}.

A principal shortcoming of the invariant approaches is the vagueness of an invariant meaning of a prefix. An invariant meaning is viewed as a common semantic denominator of all the individual meanings of a prefix, recovered from the lexicon. Thus, it is reconstructed in a bottom-up fashion, by taking the particular meanings of the given prefix and trying to reduce them to some underlying abstract idea, as illustrated by the Paillard's 1991 analysis of ZA-. However, an invariant meaning approach does not provide clear transfer rules from that abstract core meaning of the prefix to its particular instantiations. Thus, while an invariant meaning approach captures some intuitively felt similarities between the various meanings of a single prefix and attempts to unify them under one umbrella, it does not explain how those specific prefixal meanings arise at the first place. For instance, Paillard 1991 does not tell us why smejatsja\textsuperscript{IMP} (to start laughing) acquires the temporal exteriority interpretation with ZA-, while the ZA-prefixed form of myt\textsuperscript{IMP} (to wash) gets the meaning of removing the stain. As the given author admits, the above proposal is only the first step in exploring the interaction of the prefix ZA- with various Russian verbs and the semantic factors that play a role in such interaction (Paillard 1991: 49). To sum up, then, the invariant meaning models of prefixation lack predictive power in the same way as the homonymic models.

2.4 An Integrated Polysemy Approach to the Semantics of ZA-


\textsuperscript{10} It is clear from the discussion of the semantics of ZA- in Paillard 1991 that the terms object and boundary mark, in Paillard 1991 sense, refer not only to material objects or locations, associated with syntactic arguments of the lexical argument structure, but also to temporal points or events. I will elaborate on this issue in chapters V and VI.
prefixes \textit{ZA-}, \textit{PERE-}, \textit{DO-} and \textit{OT-} are represented as configurations, drawn in a cognitive space. A cognitive space is viewed not only as a physical space in which physical motion events take place, but also as a mental space in which cognitive processes, such as thinking and feeling, occur. As a consequence, a cognitive space may denote up to three physical spatial dimensions and additional non-spatial dimensions, such as existence, emotion and time.

A prefixal configuration consists of a cognitive domain, called \textit{landmark}, and a \textit{trajector}, which moves in relation to that domain. A pattern of this movement is designated as a \textit{trajectory}. Both landmark and trajector can be represented as one-dimensional figures (lines and points) or multi-dimensional entities (closed figures). Landmarks and trajectors can refer to single objects or collective groups of objects. Each prefix has several configurations, while some configurations are, in their turn, divided into a number of submeanings. A core configuration for a prefix is marked by a square, while other configurations are derived from it by minor transformations (for instance, a change from the two-dimensional into the three-dimensional space). A final scheme of configurations and their transformation rules represents a network of the configurations for the given prefix.

The network and configurations that Janda 1986 proposes for the prefix \textit{ZA-} are graphically shown in (6)-(7).

(6) \textbf{The network of ZA-}

\begin{center}
\begin{tikzpicture}
  \node[draw, circle] (1) at (0,0) {1};
  \node[draw, circle] (2) at (1,1) {2};
  \node[draw, circle] (3) at (2,0) {3};
  \node[draw, circle] (4) at (3,0) {4};
  \node[draw, circle] (5) at (4,1) {5};
  \draw (1) -- (2) node [midway, below] {three dimensions};
  \draw (2) -- (3) node [midway, below] {TR = TRy};
  \draw (3) -- (4) node [midway, below] {count vs. mass of TR};
  \draw (4) -- (5) node [midway, below] {three dimensions};
\end{tikzpicture}
\end{center}
The Configurations of ZA-

1. **TR**
   - LM

2. **TR**
   - LM

3. **TR**
   - LM

4. **TR**
   - LM

5. **TR**
   - LM

The ZA- network includes five interrelated configurations of which the first is the central one. The first configuration represents a deviation of the trajector from the landmark, which signifies a normal course of events. The second configuration is a variation of the first one, where the cognitive space is three-dimensional. The trajector does not need to cross a boundary of the landmark, but can move directly to the extradomain. In the third configuration, the trajector and its trajectory are identical. The fourth and fifth configurations are derived from the third one. The fourth configuration represents the trajector as a group of atomic objects, while in the fifth configuration the landmark is a three-dimensional container, filled up by the trajector. The five configurations in (7) are, in their turn, divided into additional submeanings.

As noted above, the first configuration refers to the situations in which the trajector deviates from its normal path or course of events and crosses the boundaries of the landmark into an extradomain. This configuration is associated with the submeanings of *Deflection, Fix, Change of State, Excess, Inchoative and Exchange*, as follows.

The submeaning of *Deflection* refers to the deviation of the trajector from its normative position. It is illustrated by the following examples: *zabluditsjaprf* (to lose one's way), where a subject deviates from a 'normal' path and, consequently, loses his way; *zagljanutaprf v komnatu* (to peek into a room), where the direction of one's
vision is deflected to one side; zadumatsja\textsuperscript{PRF} (to contemplate), where the trajector is deeply immersed into an activity process, which is in a sense a deviation from a normal course of this process. Janda 1986 notes that this meaning of ZA- is typically associated with motion verbs, though it is also manifested in other unprefixe other verbs (as the examples above indicate).

The submeaning of Fix describes situations in which the trajector becomes permanently stuck or fixed in the extradomain. Some examples of this category are zaryt\textsuperscript{PRF} (to bury), where the trajector is placed in the extradomain; začitaj\textsuperscript{PRF} (to borrow and fail to return [a book]), where the landmark is a normal circulation of a book which now remains in the extradomain; i.e., a permanent possession of one of its readers.

The Change of State submeaning is a metaphorical variation of Fix, making reference to states. The landmark represents the natural state of the trajector, while the extradomain, which the trajector passes into, reflects an abnormal or unnatural state. In most cases, such change of state is irreversible or considerably difficult to undo. Some examples of this category are zabolet\textsuperscript{PRF} (to fall ill), where the trajector (associated with an animate subject) passes from a state of being healthy to a state of being ill; zabespokoi\textsuperscript{PRF} (to become worried), where the trajector's mood is changed into a state of being worried; zamorozit\textsuperscript{PRF} (to freeze), where the trajector passes into a state of being frozen.

The Excess submeaning is similar to the change of state submeaning, but emphasizes a negative connotation, associated with the process in question. With this meaning, the landmark represents the normal boundaries of the process, and the extradomain is associated with an undesirable development of a process. Some examples of this meaning are zarabotat\textsuperscript{PRF} (to overwork oneself), zabegat\textsuperscript{PRF} (to get exhausted from running), zakormit\textsuperscript{PRF} (to overfeed [someone]). The Excess submeaning often involves a degree of damage inflicted on the trajector, including its destruction (for inanimate objects) or death (for animate ones).

The Inchoative submeaning is a special variation of the first configuration in which the trajector itself is a process and the landmark is a person or another participant in the process (e.g., an engine). Until the process in question is initiated, it remains a hidden potential ability of that person/participant. Janda 1986 also offers an alternative analysis of the inchoative submeaning – the landmark indicates a zero
level of activity denoted by the base verb, and the trajector signifies the initiating point of the activity in question. Some typical examples of the inchoative meaning are zakričat'PREF (to start screaming), zabegat'PREF (to start running), zagovorit'PREF (to start talking).

The submeaning of Exchange describes situations in which the trajector substitutes the landmark with the extradomain. Some examples of this category are zamenit'PREF (to exchange); zarabotat'PREF (to earn), where the work is exchanged for payment; zavoevat'PREF vnimanie (to win the attention), where some effort is sacrificed on one's part in order to draw the attention to oneself.

The second configuration of ZA- is associated with the submeaning of Surface. This submeaning describes the removal of a trajector from the surface of landmark. The landmark is represented by a solid object, whereas the trajector is another object, located on the external part of the landmark. Thus, the trajector moves directly into extradomain without crossing the boundaries of the landmark. Examples of the Surface submeaning are zamyt'PREF pjatno (to wash off the stain) and zapilit'PREF (to saw [a notch]).

The third configuration of ZA- is associated with the submeaning of Cover. In this submeaning, the trajector is a substance or a single indivisible object that covers a part or the entire landmark. Some examples of Cover are zamaskirovat'PREF (to mask), zatmit'PREF lunu (to overshadow the moon). Cover can also be used metaphorically, as in zaxvatit'PREF (to captivate), where something takes over (covers) one's heart.

The fourth configuration is associated with the submeaning of Splatter, which is similar to Cover, but refers to a group of objects or a divisible object rather than a single object. Examples of Splatter are zasorit'PREF pljaž ob'edkami (to litter the beach with scraps of food) and zabryzgat'PREF grjaz'u (to spatter mud).

Finally, the fifth configuration of za-, associated with the submeaning of Fill, is a three-dimensional version of Cover. The landmark is a container that is filled by an object/substance, associated with the trajector. Examples of this configuration are zašpaklevat'PREF (to putty) and zalit'PREF vodoj (to fill up with water). Janda 1986 points out that the categories of Cover and Fill are semantically close and may overlap whenever the nature of a landmark is ambiguous between a two-dimensional and a three-dimensional representation. Thus, zaxlopnut'PREF dver' (to slam the door) might
be interpreted as either *Cover* or *Fill* submeaning, depending on whether one sees a
door as covering the doorway or filling it.

The semantic analysis of *ZA*- presented in Janda 1986, has a number of
advantages over the pure homonymy and invariant approaches. It presents a network
of systematically interrelated core meanings of *ZA*- , which are subdivided into more
specific prefixal submeanings, as outlined above. Moreover, it links between the
specific meanings of *ZA*- and some properties of the trajector and landmark objects,
allowing making some predictions about the distribution of the meanings of *ZA*- . For
instance, the count vs. mass status of the trajector accounts for the distinction between
the *Cover* and *Splatter* meanings of *ZA*- , while the two-dimensional vs. the three-
dimensional representation of the landmark governs the choice between the *Cover* and
*Fill* meanings. In such a way, Janda 1986 analysis of the semantics of *ZA*- presents a
multi-tiered model of systematically related meanings of the given prefix, envisioned
in the Krongauz's (1998) description of the semantic network concept. L. Janda
believes that a cognitive (or a *modified structuralist*, in her terminology) approach to
prefixation not only explains the semantic effects of verbal prefixes on unprefixed
verbs, but has some important implications on aspectual issues in Russian. In Janda's
words, "the prefix acts as a semantic organizer in a verb; it sets the stage and gives a
general plot to the verbal activity. The semantics of the verb merely identify the actors
and fill in the details of the setting. The configuration depicts the contribution of the
prefix: the landmark set in cognitive space is the stage, the trajector the main
character and the trajectory is the plot... By assigning a plot, prefixes take what are for
the most part activity and state terms and give them the outlines of accomplishment
and achievement terms. I suspect that it is this organization of what is largely
undifferentiated activity into actual events that is at work in the perfectivizing
property of prefixes" (Janda 1985: 38). In such a way, it seems that in addition to
modifying the lexical meanings of unprefixed verbs, the prefix *ZA*- also serves as an
aspectual shift operator, changing a lexical aspectual class of its input verbs. The
question, thus, is whether it is possible to account for such semantic effects of a prefix
in the neo-Davidsonian event-based framework, reinforced by a formal theory of
prefixation, consistent with the given framework, such as the one proposed in Filip
2000 and Filip & Rothstein 2006. I believe that the answer to this question is positive.
The intuitions about the semantic function of *ZA*- , reflected in the cognitive
framework in Janda 1985, 1986, can serve as a basis for a more formal semantic
account of ZA-, which will allow making more precise predictions about the behavior of the prefix ZA- in Russian. Hence, while I adopt the concept of an interrelated network of prefixal meaning, developed in the integrated polysemy approaches, such as Janda 1986 and Krongauz 1998, I shall try to build my own model of such network for the prefix ZA- in the following chapters, relying on the formal theoretical tools, discussed in chapter I.

2.5 A Summary

As it becomes evident from the discussions of prefixation in the previous sections, a definition of the concept of prefixal meaning depends on one's theoretical approach to the verbal prefixation in Russian. Therefore, as a preliminary step in exploring the semantics of ZA-, it is important to clarify how the concept of meaning of ZA- is interpreted in this thesis (and how this interpretation differs from the ones in the previously cited works). For instance, as demonstrated in the course of the earlier discussion of Zaliznjak's (1995) analysis of ZA-, some scholars define a meaning of a prefix as a common semantic denominator, shared by a number of prefixed verbs. Thus, the primary focus of many studies of prefixation is to identify the groups of semantically and syntactically close prefixed verbs (used in similar contexts) and extract the particular prefixal meanings from such groups. As Krongauz 1998 summarizes it: "The immediate goal of research in the prefixal semantics becomes an individuation of the groups of usage of prefixed verbs with a given prefix, which would express a maximal intersection of their meanings. Interpretations of the typical members of a single group coincide closely, excluding some part of the meaning, specific to each particular verb. Replacing such specific part of the verbal interpretation by a variable provides a common interpretation for a given group, or its interpretation structure. The interpretation structure provides, thus, the contextual (contextually-dependent or contextually-determined); i.e., the most specific, meaning of the prefix. This meaning unifies a group of prefixed verbs, which acquire the given meaning in a well-defined context" (Krongauz 1998: 155, translation is mine).

A different conception of a prefix is reflected in L. Janda's accounts of prefixation (Janda 1985, 1986). Janda views prefixes as verbal modifiers, which assign some sort of an ordered structure to unprefixed verbs by providing them with a general plot of development. If we reinterpret this in the language of formal semantics, a verbal
prefix is a semantic operator, which applies to an unprefixed verb and yields a
different type of verb, distinct from its imperfective correlate in its semantic and/or
syntactic and aspectual properties. The meaning of the prefix $ZA$-, then, is the
meaning of a semantic operation that it imposes on unprefixed verbs (which serve as
an input for $ZA$-). Thus, in my reinterpretation of Janda's position, a concept of a
prefixal meaning of $ZA$- is the entire semantic mechanism of change from the
meaning of an input verb to the meaning of its $ZA$-prefixed output. In contrast with
this, the interpretation structure format, defined in Krongauz 1998 as a meaning of a
prefix, reflects only the meanings of the output $ZA$-prefixed verbs; i.e., the outcome of
applying $ZA$- to some input verbs. I shall call Krongauz meanings the cluster
meanings of $ZA$- to distinguish them from the meanings of $ZA$- as modifying
operations on base verbs.

If the meaning of $ZA$- amounts to a modifying operation on unprefixed verbs, then
the number of meanings of $ZA$- in the lexicon depends on what types of semantic
operations are introduced by $ZA$-. Chapter I outlined a formal theory of prefixation,
proposed in Filip 2000 and Filip & Rothstein 2006, which views verbal prefixes in
Slavic languages as measure functions that take sets of events as their inputs and yield
corresponding subsets, constrained with respect to a particular measure scale. Filip &
Rothstein 2006 defines the entities that can be measured by prefixes as "participants,
times, locations, or event occurrences..." (Filip & Rothstein 2006: 12). For instance,
as illustrated in chapter I, Filip 2000 provides examples in which the prefixes $PO$- and
$NA$- measure the temporal duration of an input verb with respect to some default value
of expectation. Under such an approach, the number of meanings of the prefix $ZA$- is
tantamount to the number of measure operations, associated with it. I will assume that
measure operations are relations between individual entities and scales, and that
measure operations are distinguished in terms of the particular entities being
measured. In other words, to define the meanings of $ZA$- in the lexicon, one needs to
check what types of entities are measured by it – and, then, explain how they are
measured.

In this dissertation, I will argue that $ZA$- is capable of measuring in three different
ways: it may measure the extent of change in goal locations, in themes and in running
times of events. Consequently, I propose the following basic classification for the $ZA$-
prefixed verbs in the lexicon of Russian into three classes (although class (b) will
contain several subclasses):
(a) ZA+Verb denotes events of change in a spatial goal location, as in (8b);

(8) a. Ivan bežal \textsuperscript{IMP} v magazin.
   Ivan ran to store
   'Ivan ran to a/the store.'
b. Ivan zabežal \textsuperscript{PRF} v magazin.
   Ivan ZA-ran in store
   'Ivan ran into the store.'

(b) ZA+Verb denotes events of change, affecting a theme argument, as in (9b)-(10b);

(9) a. Ivan nosil \textsuperscript{IMP} futbolku.
   Ivan wore T-shirt
   'Ivan wore a/the T-shirt.'
b. Ivan zanosil \textsuperscript{PRF} futbolku.
   Ivan ZA-wore T-shirt
   'Ivan wore the T-shirt out, while wearing it.'

(10) a. Mark krasil \textsuperscript{IMP} stenu.
   Mark painted wall
   'Mark painted a/the wall.'
b. Mark zakrasil \textsuperscript{PRF} stenu.
   Mark ZA-painted wall
   'Mark painted the wall all over.'

(c) ZA+Verb denotes events of temporal change; namely, an establishment (or coming into existence) of a new process or state (example 11b).

(11) a. Ivan govoril\textsuperscript{IMP}.
   Ivan talked
   'Ivan talked.'
b. Ivan zagovoril\textsuperscript{PRF}.
   Ivan ZA-talked
   'Ivan started talking.'
In (8b), the $ZA$-prefixed $zabežat^{\text{PREF}}$ (to run into) denotes an event of change in the spatial position of the subject (in this case, Ivan) that moves into a well-defined location (in this case, the store). Example (8b) entails that Ivan entered the store and was inside it at the culmination of the running event. Thus, at the first sight, it seems that in the example (8b) the prefix $ZA$- measures an extent to which the goal location store is traversed by the moving participant Ivan in the course of the running event. I shall call the derivation of $ZA$-prefixed verbs in which the affected argument is a goal location the \textit{spatial meaning of} $ZA$-.

In examples (9b)-(10b), the prefix $ZA$- seems to measure an extent to which a theme participant is affected in the course of event. In the case of $zanosit^{\text{PREF}}$ futbolku (to wear the T-shirt out), $ZA$- requires an extent of damage to the T-shirt to be apparent; while in $zakrasit^{\text{PREF}}$ stenu (to paint the wall all over), $ZA$- sets up a restriction that a significant part of the surface of the wall is to be painted over. In such a way, the prefix $ZA$- measures an extent of 'affectedness' of a theme argument in the course of the given event. As I intend to show in Chapter IV, an affectedness of a theme argument in the $ZA$-prefixed verbs can be instantiated in a number of ways, such as its destruction, change in its capacity or physical properties. All such changes can be viewed as lexical variations of the core meaning of change in a theme argument, or the \textit{resultant meaning of} $ZA$-.

Finally, in (11b), the prefix $ZA$- assigns an inchoative reading to the input verb $goverit^{\text{IMP}}$ (to talk), turning it into $zagoverit^{\text{PREF}}$ (to start talking). Thus, $ZA$- modifies the running time of the \textit{talking} event, putting an emphasis on its initial stage. In this case, $ZA$- redefines a temporal frame of the given event. I call such modification of temporal traces of input verbs the \textit{inchoative meaning of} $ZA$-.

To sum up, the data in (8)-(11) indicate that there are three core meanings of the prefix $ZA$- in the verbal lexicon of Russian: \textit{the spatial meaning} in which the prefix $ZA$- affects a spatial location; \textit{the resultant meaning} in which $ZA$- affects a theme argument with respect to some of its properties; and \textit{the inchoative meaning} of $ZA$- in which it modifies the running time of a given event. \textit{The spatial meaning} of $ZA$- is discussed in the following chapter III, while chapters IV and V deal with \textit{the resultant} and \textit{the inchoative meanings of} $ZA$-, respectively.
Chapter III.
The Spatial Meaning of ZA-.

3.1 Introduction

In this chapter, I will discuss the spatial meaning of ZA- in more details and provide a formal analysis for this meaning. The structure of discussion and analysis of the spatial meaning of the prefix ZA- are outlined as follows.

The *spatial, or spatial-directional, meaning of ZA-* has been mentioned in a number of studies (e.g., Šeljakin 1969, Ovčinnikova 1979, Ferm 1990, Zaliznjak 1995, Valeeva 2001). Even though each scholar examines the spatial meaning of ZA- from a different angle, their observations have provided valuable insights for my own analysis of the prefix ZA-. As mentioned earlier, I intend to look at both the output ZA-prefix ed verbs and their corresponding input forms to which ZA- applies. In my view, a thorough analysis of the output and the input forms and the semantic differences between them shall prove instrumental in devising the appropriate shift mechanism from the input forms into the outputs, which is, essentially, what I define as the *spatial meaning of ZA-*

The discussion of the *spatial meaning of ZA-* provided in this chapter, consists of a number of consecutive steps. First, I describe the group of ZA-prefix ed verbs, expressing motion in space (i.e.; the spatial ZA-prefix ed verbs), and discuss their semantic and syntactic parameters, generally following the guidelines laid out in Krongauz 1998. I also propose a grammatical test that distinguishes the spatial ZA-prefix ed verbs from other types of ZA-prefix ed verbs.

Second, I analyze the types of input verbs from which the spatial ZA-prefix ed verbs are derived. This is an important part of my analysis, since I intend to show that the spatial ZA-prefix ed verbs are derived from a variety of thematic classes of verbs, which by themselves have different degrees of compatibility with the spatial reading, attested in the output forms. Some unprefix ed input verbs naturally express the 'motion in space' meaning, while for others such meaning is unnatural at the first place. Thus, there is no one-to-one mapping between the input and the output forms in terms of their lexical meanings. While all the spatial ZA-prefix ed outputs denote the same cluster meaning of ZA-, *move into*, it is not the case for their input correlates.

The third step, which plays a crucial role in exploring the semantics of ZA-,
comparison between the output forms and their input counterparts in terms of their Vendlerian aspectual class, lexical meaning and argument structure, properties of affected arguments and degree of their affectedness. The results of this comparison serve as a basis for the next stage: reconstructing the semantic mechanism of ZA-, which derives the spatial output ZA-prefixed verbs from the corresponding input forms.

3.2 The Spatial ZA-Prefixed Verbs

In Chapter I, I discussed Krongauz's (1998) conception of a semantic network of prefixal meanings. As a part of this proposal, the prefixed verbs are divided into distinguishable groups, which have common semantic-syntactic templates (semantiko-sintaksičeskie šablony) (Krongauz 1998:175). The verbs in each group share an underlying meaning, which is attributed to the prefix (i.e., a cluster meaning). The theoretical approach, developed in Krongauz 1998, is implemented in a number of recent works on the prefix U- (Gorelik, 2001), the prefix NAD- (Krongauz, 2001), the prefix POD- (Plungjan, 2001) and the prefix PRI- (Jakunina, 2001).

The basic technique, proposed in Krongauz 1998, for describing the patterns of prefixed verbs is to represent a prefixal meaning as a dictionary entry. Such entry consists of a number of stages of data representation. The first stage presents empirical data from the lexicon, including a few detailed examples of prefixed verbs with a common cluster meaning, and a list of additional prefixed verbs, belonging to the given group. The second stage is defined in Krongauz 1998 as a model of control (model' upravlenija). A model of control represents a generalization over syntactic properties of the ZA-prefixed verbs in the given group; i.e., an intersection of the syntactic subcategorization frames of all the verbs in the particular group. Such intersection provides the minimal obligatory syntactic arguments that must be realized by each verb in the given group. The third stage of representation provides the interpretation structure of a prefix – a description of the underlying prefixal meaning for the given group of verbs. The last stage in Krongauz's framework, a commentary (kommentarij), includes remarks on some additional semantic phenomena, associated with the selected group of prefixed verbs, such as subdivisions of verbs within that group (for instance, transitive and intransitive verbs), possible semantic relations with other groups of prefixed verbs and productivity of the given prefixal meaning.
Krongauz 1998 uses the above technique in analyzing the verbal prefix *OT*- and distinguishes between the 21 various submeanings of the given prefix. I provide an example of one of these meanings in (5) (excluding a commentary stage) to briefly illustrate how Krongauz's (1998) proposal is implemented in practice.

(1) **Loss of Capability** [Krongauz 1998, 183-184, the 15th meaning of *OT*-

**Examples**: Étot motor svoê otrabotal PRF (This engine itself OT-worked = this engine is totally wasted), Otzveneli PRF pesni. (OT-ringed songs = The songs have stopped ringing), Otgremela PRF vojna (OT-thundered war = The war thundered to an end)....

**Verbs**: *otbolet* PRF (to finish off the ailment), *otzvučat* PRF (to stop ringing),

*otgremet* PRF (to stop thundering), *otmučat'sja* PRF (to stop suffering), *otvesti* PRF (to fade, finish blossoming).

**Model of Control**: X [nom. case] (svoê – its own)

**Interpretation**: X lost an ability/capability of performing a process V or being in a state of V, permanently or at a given stage of development, as a result of an exhaustion of some inner resources or time limits.

The descriptions of the cluster meanings of *ZA*-prefixed verbs, provided in this study, are generally structured along the above guidelines in Krongauz 1998. However, I have modified the aforementioned technique of representation in a number of respects. First, I believe that the model of control should include not only an intersection of the subcategorization frames of *ZA*-prefixed verbs in a given group, but also a link between the syntactic arguments and their corresponding thematic roles (Agent, Theme, Goal, etc). Padučeva 2004 uses the term *diathesis (diateza)* to refer to such correlation of syntactic arguments of a verb and its thematic roles (Padučeva 2004: Chapter 3). In Padučeva's view, each verb has a typical diathesis, which may undergo a diathesis shift (in fact, such diathesis shifts in various classes of lexical verbs play an important role in Padučeva's (2004) theory of verbal lexical semantics in Russian). My version of Krongauz's model of control, thus, represents an intersection of diatheses of *ZA*-prefixed verbs that form a relevant verbal group. The

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11 Krongauz 1998 provides more examples than quoted here, from various poetry and literature sources. I believe, however, that the examples I quoted here are sufficient to convey the essence of Krongauz's proposal to the reader. I also omitted Krongauz's commentary section from the given example.
reason for including thematic roles in a model of control is that such inclusion will allow tracking possible change patterns in both a syntactic lexical argument structure and a thematic role assignment in the process of deriving unprefix ed input verbs into ZA-prefixed outputs. In such a way, it will be possible to account for a (potential) interaction of ZA- with thematic arguments of an input verb.

My second modification of Krongauz's technique of describing prefixal cluster meanings is an inclusion of grammatical tests that draw a line between a proposed cluster meaning of ZA- and its other cluster meanings. The need for such grammatical tests is evident in light of the fact that some ZA-prefixed verbs are capable of expressing more than one cluster meaning in different circumstances (as noted in Zaliznjak 1995). For instance, the verb zabitaPRF (to hit) in Russian can have a spatial reading, as in Ivan zabitaPRF guzdu v stenu (Ivan hit the nail into the wall); a resultant reading, as in Ivan zabitaPRF korovu (Ivan slaughtered the cow); and an inchoative reading, as in Ivan zabitaPRF molotkom po guzdju (Ivan began to hit the nail with the hammer). Thus, one needs a set of grammatical tests, which could distinguish not only between different groups of ZA-prefixed verbs, but also between the distinct cluster meanings of a single ZA-prefixed verb in various contexts.

Finally, I have decided to omit the commentary section from my analysis of the ZA-prefixed verbs. As explained above, the original commentary phase in Krongauz' framework includes a description of various linguistic phenomena, associated with the given cluster of prefixed verbs, that do not fit into the previous levels of representation. I believe that some observations, made in the comments section, deserve to be discussed in a different format of discourse. In particular, I find the issue of alternations of meanings of the ZA-prefixed verbs, as in the case of zabitaPRF above, especially important. Such alternations are discussed in detail in Chapter VI.

Having covered the issues of terminology, let's return to the topic of discussion. The spatial cluster meaning of ZA- is an underlying meaning, shared by a group of ZA-prefixed verbs, which express the motion of one of the participants in a motion event – subject for intransitive verbs, object for transitive ones – into some location in space. Thus, all the verbs with the spatial cluster meaning of ZA- have two obligatory participants in a motion event: a moving entity and its destination. A spatial ZA-prefixed verb describes a process of motion by the means of which the moving entity relocates into the destination region. Consider the following examples in (2)-(6):
(2) Ivan zašel^{PRF} v les.
   Ivan ZA-went in forest
   'Ivan went into the forest.'

(3) Korabl' zaplyl^{PRF} v buxtu.
   Ship ZA-swam in bay
   'The ship sailed into the bay.'

(4) Dima zalez^{PRF} na čerdak.
   Dima ZA-climbed on attic
   'Dima climbed to the attic.'

(5) Ivan zabrosil^{PRF} kamen' v okno.
   Ivan ZA-throw stone in window
   'Ivan threw the stone into the window.'

(6) Mary zapisala^{PRF} tekst v tetrad'.
   Mary ZA-wrote text in notebook
   'Mary wrote the text into her notebook.'

All the examples above describe events of motion in which one of the participants moves into some goal region. In (2), Ivan walks into the forest; in (3) the ship sails into the bay; in (4) Dima climbs to the attic; in (5), the stone is thrown into the window; and, in (6), the text is written down into the notebook. An important point to make is that, though a goal region is usually explicitly provided in the spatial ZA-prefixed verbs, as in (2)-(6), it can also be implicitly given by the context, as in examples (7)-(8) below.

(7) Xlopnula^{PRF} vxodnaja dver'. Zašel^{PRF} Ivan.
   Slammed entrance door ZA-went Ivan
   'The entrance door slammed. Ivan went in.'
In example (7), the context makes it clear that the goal region is a building, while in (8) the goal is some contextually defined place, designated for parking a car. More examples of ZA-prefixed verbs with the *spatial cluster meaning of ZA-* are:

- *zasypat’*<sub>PRF</sub> <i>&lt;pesok v jamu&gt;</i> (to pour the sand into the hole),
- *zalit’*<sub>PRF</sub> <i>&lt;vodu v bak&gt;</i> (to pour the water into the tank),
- *zaletet’*<sub>PRF</sub> <i>&lt;v okno&gt;</i> (to fly into the window),
- *zapustit’*<sub>PRF</sub> <i>&lt;raketu v kosmos&gt;</i> (to launch the rocket into the space),
- *zaprygnut’*<sub>PRF</sub> <i>&lt;na stul&gt;</i> (to jump on the chair),
- *zabit’*<sub>PRF</sub> <i>&lt;gvozd’ v stenu&gt;</i> (to hammer the nail into the wall),
- *zafutbolit’*<sub>PRF</sub> <i>&lt;mjač v vorota&gt;</i> (to kick the ball into the gate),
- *zabresti*<sub>PRF</sub> <i>&lt;v pustynnyj pereulok&gt;</i> (to wander into the deserted alley),
- *zatolknut’*<sub>PRF</sub> <i>&lt;telegu v tunnel’&gt;</i> (to push the cart into the tunnel),
- *zaprijatat’*<sub>PRF</sub> <i>&lt;košeljok v jaščik stola&gt;</i> (to hide the wallet inside the desk drawer).

Based on the empirical data above, I propose the following model of control for the group of the spatial ZA-prefixed verbs.
The Model of Control of the Spatial ZA-Prefixed Verbs

<table>
<thead>
<tr>
<th>Intransitive verbs</th>
<th>X</th>
<th>ZA-VERB</th>
<th>prep. Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>nominative</td>
<td></td>
<td>accusative</td>
</tr>
<tr>
<td>Syntactic Arg. Position</td>
<td>subject</td>
<td></td>
<td>indirect object</td>
</tr>
<tr>
<td>Thematic Role</td>
<td>AGENT / INSTR.</td>
<td></td>
<td>GOAL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transitive verbs</th>
<th>X</th>
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<td></td>
</tr>
<tr>
<td>Syntactic Arg. Position</td>
<td>subject</td>
<td>direct object</td>
<td>indirect object</td>
<td></td>
</tr>
<tr>
<td>Thematic Role</td>
<td>AGENT / INSTR.</td>
<td>HOLISTIC THEME</td>
<td>GOAL</td>
<td></td>
</tr>
</tbody>
</table>

The model of control above provides the intersection of diatheses of the spatial ZA-prefixed verbs in the lexicon; i.e., the intersection of their subcategorization frames on a par with their selectional restrictions (Chomsky, 1965). The latter are subsumed under thematic roles, which by themselves constitute combinations of proto-properties, as demonstrated in the section 1.2.2 in chapter I. AGENT is [+sentient, +volitional], while INSTRUMENT is [-sentient, -volitional]. The HOLISTIC THEME argument, as defined in 1.2.2, has a property of being set in motion by another participant of a motion event. The GOAL argument is a location, which another participant moves into in the course of a motion event. The thematic identity of this participant is not restricted by the goal and can be an agent, an instrument or a holistic theme. The difference between an agent and an instrument, on the one hand, and a holistic theme, on the other, is that the first two are active participants that initiate a motion event, while the latter is a passive participant that is set in motion by an agent or an instrument. Thus, the car in Ivan zavel PRF mašīnu v garaž (Ivan drove the car into the garage) is a holistic theme argument, due to it being
set in motion by the actions of Ivan. Note, however, that an initiator of a motion event does not necessarily have the sentient or volitional proto-properties. A non-sentient, non-volitional instrument participant may also initiate a motion event, as in *Mašina zaexala* PRF v garaž (The car drove into the garage), or *Klaviša na klaviature zapala* PRF (The key on the keyboard fell in/stuck). It is true that cars naturally do not drive into a garage by themselves and keys on a keyboard have a tendency to fall in as a result of one's feverish typing, but these facts are known to us from the real-world situation, rather than being a part of the lexical meaning of a corresponding motion verb. The point here is that an initiator of a motion event, volitional/sentient or not, is not explicitly affected by any other participant of an event in the course of its motion, as is the case for a holistic theme argument in the transitive motion verbs.

The intransitive spatial *ZA*-prefixed verbs require two obligatory participants in a motion event, instantiated by agent and goal arguments. An agent argument occupies the syntactic position of a subject and acquires nominative case. A goal argument is an indirect object, which is introduced by the spatial prepositions, such as *v*- (in), *za*- (beyond), *na*- (on) and *pod*- (under), that assign it accusative case (Timberlake 2004).

The transitive spatial *ZA*-prefixed verbs have three obligatory participants in a motion event: an agent, a holistic theme and a goal. An agent takes the subject position and is assigned nominative case by the prefixed verb. A holistic theme occupies the direct object position and takes accusative case. A goal argument is placed in the indirect object position, where a spatial preposition assigns it accusative case.

One more point. As mentioned earlier, the proposed model of control of the spatial *ZA*-prefixed verbs provides the intersection of their diatheses. This is not to say that a particular spatial *ZA*-prefixed verb is barred from introducing additional lexical arguments, which do not appear in the above model of control. On the contrary, the spatial *ZA*-prefixed verbs can have rich lexical argument structures, as illustrated in the following examples (9)-(10). In (9), the verb *zajdit*PRF (to walk in) takes the SOURCE and PATH arguments, while in (10) the verb *zasypat*PRF (to pour in) occurs with the LOCATION and INSTRUMENT arguments.
A question comes to mind, then, of why the aforementioned model of control does not provide a full list of all the possible arguments for the spatial ZA-prefixed verbs. While all such verbs share an obligatory goal and a moving entity argument (the latter one being an agent/instrument for intransitive verbs and a holistic theme for transitive ones), additional arguments are not uniformly available for all the spatial verbs, but depend on the different lexical meanings of the verbs. For instance, not only the INSTRUMENT argument, such as *spade* in (10), is disallowed as an indirect object with the intransitive spatial verbs, but it is not available for some transitive ones as well. *Dorothy zašla v les trost’ju* (Dorothy walked into the forest by the means of a walking stick) and *Ivan zatokal telegu v tunnel konjom* (Ivan pushed the cart into the tunnel by the means of a horse) are both infelicitous sentences in Russian. Thus, additional lexical arguments fall out of the intersection of the diatheses of spatial ZA-prefixed verbs, represented in the model of control.

Having presented the model of control for the spatial ZA-prefixed verbs, I will now provide the interpretation structure for the spatial cluster meaning of ZA-.

**Interpretation Structure for the Spatial Cluster Meaning of ZA-**

1. [For intransitive verbs] A person or object X moves in a manner V into the goal area Z, so that X ends up within the boundaries of the goal area Z at the culmination point of a given event of motion.

2. [For transitive verbs] A person or object X sets in motion an object Y in a manner V into the goal area Z, so that Y ends up within the boundaries of the goal area Z at the culmination point of a given event of motion.
A goal-oriented grammatical test draws a line between the spatial ZA-prefixed verbs and other ZA-prefixed verbs. As follows from their model of control and interpretation structure above, the spatial ZA-prefixed verbs have an obligatory goal argument, which is assigned accusative case by a spatial preposition. In English, the presence of a goal argument in the lexical argument structure of a verb can be tested by the WH-question where, as in where did X move to question. In Russian, such question is introduced by the word kuda (where to). Since any spatial ZA-prefixed verb must have a goal argument in its lexical argument structure, such test is applicable to the entire range of the spatial ZA-prefixed verbs. For instance, the application of kuda test allows distinguishing between the spatial ZA-prefixed verb zajdi^PRF (to walk into) in (11) and the non-spatial ZA-prefixed verb zatonut^PRF (to sink) in (12).

(11) Dorothy zašla^PRF v les.
Dorothy ZA-walked in forest.ACC
'Dorothy walked into the forest.'
- Kuda zašla^PRF Dorothy?
Where to ZA-walked Dorothy
'Where did Dorothy walk to?'
V les. [into the forest]

(12) "Titanic" zatonul^PRF (* v okean) / v okeane.
Titanic sank in ocean.ACC in ocean.LOC
"Titanic" sank in the ocean.'
- * Kuda zatonul^PRF "Titanic"?
Where to ZA-sank Titanic

In (11), the kuda test gives us the destination of Dorothy's walking; namely, the forest. In (12), however, the verb zatonut^PRF (to sink), which at the first sight appears to be a spatial ZA-prefixed verb, is unacceptable with the goal argument into the ocean and, hence, does not pass the kuda test. In the case of zatonut^PRF, the preposition v- can assign only locative case to ocean, and the whole sentence means that the Titanic sank in the ocean, whereas in the ocean is a static location, rather than
goal. One can ask where the Titanic sank, using the WH-question, headed by *gde* (where), but not by *kuda* (where to). Hence, it seems that *zatonut* \textsuperscript{PRF} expresses a different cluster meaning of *ZA-*.

One problem with the *kuda* test has to do with the fact that there are groups of *ZA-* prefixed motion verbs in Russian that can take a goal argument, yet do not express a spatial cluster meaning\textsuperscript{12}. The *ZA*-prefixed verbs in (13) acquire an inchoative reading, despite having goal arguments in their lexical structure. Thus, the application of the *kuda* test would wrongly predict that the following inchoative verbs are the spatial ones.

(13) a. Ivan zabegal \textsuperscript{PRF} v magazin.
   Ivan ZA-ran \textsuperscript{ACC} to store
   'Ivan started running to the store.'
   - Kuda zabegal \textsuperscript{PRF} Ivan?
   Where to ZA-ran Ivan
   'Where did Ivan start running to?'
   - V magazin.ACC. [to the store]

b. Ivan zaprygal \textsuperscript{PRF} v okno.
   Ivan ZA-jumped in window.ACC
   'Ivan started jumping into the window.'
   - Kuda zaprygal \textsuperscript{PRF} Ivan?
   Where to ZA-jumped Ivan
   'Where did Ivan start jumping into?'
   - V okno.ACC. [into the window]

Thus, the *kuda* test by itself is not sufficient for separating the spatial *ZA*-prefixed verbs from some other types of *ZA*-prefixed verbs. Luckily, the interpretation structure of the spatial cluster meaning of *ZA-* contains another obligatory requirement for the spatial *ZA*-prefixed verbs: a moving entity must be inside a goal area at the culmination point of the motion event, denoted by a spatial *ZA*-prefixed verb. In other words, assuming that the location of the moving entity X has not

\textsuperscript{12} Such verbs are indeterminate motion verbs, such as *begat* \textsuperscript{IMP} (to run), and iterative imperfective activity motion verbs, such as *jump, throw* and *launch*, which I will discuss in chapters V and VI. The distinction between determinate and indeterminate motion verbs in Russian is discussed later on.
changed since the culmination of the given motion event and till the present moment, a spatial verb entails that X has to be located at the goal area. An inchoative verb with a goal argument, on the other hand, does not convey such entailment in its denotation (we will know why in Chapter VI). Hence, a spatial ZA-prefixed verb provides a concrete answer to the WH-question *where is X now* by specifying its goal argument as a current location of X. Since the motion event is over by now, the goal argument is reinterpreted as a static location for X and is assigned locative case by the prepositions *v*- (in) and *na*- (on), or dative case by the prepositions *za*- (beyond) and *pod*- (under). In the case of the inchoative ZA-prefixed motion verbs, the location of X at the present moment is unspecified. Thus, one can draw a line between a spatial ZA-prefixed verb in (14) and an inchoative one in (15).

(14) Ivan zabežal^{PRF} v magazin.
    Ivan ZA-ran in store.ACC
    'Ivan ran into the store.'
    - Gde seičas Ivan?
    Where now Ivan
    'Where is Ivan now?'
    - V magazine.LOC [in the store] / *Neizvestno [unknown]

(15) Ivan zabegal^{PRF} v magazin.
    Ivan ZA-ran in store.ACC
    'Ivan started running to the store.'
    - Gde seičas Ivan?
    Where now Ivan
    'Where is Ivan now?'
    - # V magazine.LOC [in the store] / Neizvestno [unknown]

In such way, the combination of the *kuda* and *where is X now* tests allows separating the spatial ZA-prefixed verbs from the other types of ZA-prefixed verbs in the lexicon.

To sum up, the discussion in 3.2 clarifies the concept of the *spatial cluster meaning of ZA*- by looking at the common syntactic and semantic properties of the
spatial ZA-prefixed verbs, illustrated by the aforementioned model of control and the interpretation structure. Moreover, the section 3.2 provides a set of grammatical tests that allows distinguishing such verbs from other ZA-prefixed verbs. It is time now to take a look on the lexical unprefixed correlates of the spatial ZA-prefixed verbs (i.e., their input forms).

3.3 The Input Forms for the Spatial ZA-Prefixed Verbs

The task of providing a full typology for the input verbs for the spatial cluster meaning of ZA- is a difficult one, due to the fact that such input forms constitute a heterogeneous class of verbs that, unlike the spatial ZA-prefixed verbs, are not built upon a single meaning. I propose to sort the input verbs with respect to the following two criteria. First, the unprefixed input verbs can be classified according to their thematic classes. A thematic class is a group of lexical verbs, which share a common central semantic component in their meaning; e.g., creation verbs, perception verbs, mental state verbs and so on (Padučeva 2004: 42). A detailed classification of thematic classes of verbs in English is provided in Levin 1993. I am not aware of a similar classification of verbs in Russian, though there have been a number of works in this field (Kuznecova 1988, Babenko 1999). Thus, the classification of thematic classes of verbs in the following discussion is largely based on the data in Levin 1993.

Another factor to be considered in classifying the input verbs is their degree of compatibility with the meaning of their spatial ZA-prefixed outputs. I distinguish between three groups of input verbs: 1) input verbs that naturally express a meaning of motion to(ward) a certain goal. Such verbs undergo only a minor change in their lexical meaning and argument structure in the process of conversion into the spatial ZA-prefixed verbs; 2) input verbs that express a different lexical meaning than a motion to(ward) a certain goal. Such verbs undergo an apparent shift in their lexical meaning and argument structure in the course of prefixation; 3) 'empty-based' input verbs. Such verbs do not have an autonomous lexical meaning, prior to the application of ZA-. The input verbs in the first group display a high compatibility with the meaning of motion (to some goal location), expressed by the output ZA-prefixed forms, while the verbs in the second group exhibit a low compatibility with such meaning. For the 'empty-based' verbs, the issue of compatibility with the spatial

13 Levin 1993 talks about lexical classes of verbs. I, however, adopt Padučeva's (2004) term thematic classes to avoid confusion with the Vendlerian lexical classes.
cluster meaning of \(ZA\) is irrelevant, since they simply do not have any coherent meaning without a prefix.

Let's review the input verbs with respect to the two criteria above. The input verbs for the spatial \(ZA\)-prefixed verbs include two natural thematic subclasses of motion verbs. The first subclass is a small closed class of the imperfective determinate motion verbs. Since the behavior of \(ZA\) with the motion verbs plays an important factor in the semantic analysis of \(ZA\), proposed in this dissertation, I shall provide a short introduction to the determinate/indeterminate motion verbs in Russian at this point.

The imperfective determinate and indeterminate imperfective motion verbs constitute a separate aspectual subclass in Russian (Zaliznjak & Shmelev 2000, Kagan 2007). These motion verbs form two small closed classes of verbs, as follows.

(16) **List of Determinate Motion Verbs**

\[
\begin{align*}
\text{bežat}^{\text{IMP}} & \text{ (to run), } \\
\text{bresti}^{\text{IMP}} & \text{ (to wander), } \\
\text{vezti}^{\text{IMP}} & \text{ (to carry [by a cart]), } \\
\text{vesti}^{\text{IMP}} & \text{ (to lead), } \\
\text{exat}^{\text{IMP}} & \text{ (to drive), } \\
\text{idti}^{\text{IMP}} & \text{ (to walk, go), } \\
\text{lezti}^{\text{IMP}} & \text{ (to climb), } \\
\text{letet}^{\text{IMP}} & \text{ (to fly), } \\
\text{plyt}^{\text{IMP}} & \text{ (to swim, sail), } \\
\text{polzti}^{\text{IMP}} & \text{ (to crawl), } \\
\text{nesti}^{\text{IMP}} & \text{ (to carry), } \\
\text{taščit}^{\text{IMP}} & \text{ (to drag). }
\end{align*}
\]

(17) **List of Indeterminate Motion Verbs**

\[
\begin{align*}
\text{begat}^{\text{IMP}} & \text{ (to run), } \\
\text{brodit}^{\text{IMP}} & \text{ (to wander), } \\
\text{vozit}^{\text{IMP}} & \text{ (to carry [by a cart]), } \\
\text{vodit}^{\text{IMP}} & \text{ (to lead), } \\
\text{ezdit}^{\text{IMP}} & \text{ (to drive), } \\
\text{xodit}^{\text{IMP}} & \text{ (to walk, go), } \\
\text{lazit}^{\text{IMP}} & \text{ (to climb), } \\
\text{letat}^{\text{IMP}} & \text{ (to fly), } \\
\text{plavat}^{\text{IMP}} & \text{ (to swim, sail), } \\
\text{polzat}^{\text{IMP}} & \text{ (to crawl), } \\
\text{nosit}^{\text{IMP}} & \text{ (to carry), } \\
\text{taskat}^{\text{IMP}} & \text{ (to drag). }
\end{align*}
\]

Determinate and indeterminate motion verbs are considered to be morphologically related and form (non-standard) aspectual pairs, though there is no productive rule for deriving one member of such pair from another (Zaliznjak & Shmelev 2000). Both determinate and indeterminate motion verbs are imperfective, although they denote different types of motion events. Determinate motion verbs normally denote a directed motion toward some explicit or implicit goal. Indeterminate motion verbs usually refer to iterative motion events, such as back-and-forth movements, or a general manner of motion. The two types of motion verbs also behave differently with the prefix \(ZA\), as will be illustrated in detail in chapter VI. Determinate motion verbs
acquire the spatial meaning of $ZA$-, while the indeterminate ones take the inchoative (and, in some cases, the resultant) interpretation. The major distinctive properties of the aforementioned motion verbs are summarized in (18)-(19) below.

(18) **Properties of Determinate Motion Verbs**
- normally have a progressive ongoing interpretation (e.g., $Ivan \, bežal_{IMP}^v \, magazin \, v \, 12:00$ – Ivan was running to the store at 12:00).
- usually denote a directed motion toward a specific goal.
- are odd with habitual or iterative interpretation.
- always acquire the spatial meaning with the prefix $ZA$-

(19) **Properties of Indeterminate Motion Verbs**
- normally denote iterative or back-and-forth movements (e.g., $Ivan \, xodil_{IMP}^v \, školu \, každyj \, den$’ – Ivan used to go to school everyday; $Ivan \, begal_{IMP}^v \, magazin$ – Ivan ran to the store (and came back)).
- denote a general manner of motion (e.g., $Samolet \, bystro \, letael_{IMP}^v$ – A plane flies fast).
- do not express an ongoing progressive reading with a goal argument.
- uniformly acquire the inchoative meaning of $ZA$- (the resultant meaning is also possible with some transitive indeterminate motion verbs, as shown in chapter VI).

Having made the notion of determinate motion verbs clear, let’s take a look on other thematic classes of verbs that acquire the spatial cluster meaning of $ZA$-.

Another thematic class of input verbs for the spatial $ZA$- is the class of perfective semelfactive motion verbs. Such verbs are $prygnut\,^{PRF}$ (to jump once), $tolknut\,^{PRF}$ (to give a push), $porxnut\,^{PRF}$ (to flutter), $metnut\,^{PRF}$ (to cast), $švyrynut\,^{PRF}$ (to toss), $brosit\,^{PRF}$ (to throw), $pustit\,^{PRF}$ (to launch), $kinut\,^{PRF}$ (to throw, fling), $sunut\,^{PRF}$ (to shove).

Other input verbs for the spatial $ZA$- come from a variety of thematic classes. Some are $pour$ and $spray/load$ verbs, such as $sypat\,^{IMP}$ (to pour sand), $lit\,^{IMP}$ (to pour liquid), $gruzit\,^{IMP}$ (to load); $concealment$ verbs, such as $prjatat\,^{IMP}$ (to hide), $xoronit\,^{IMP}$ (to bury); $poke$ verbs, such as $kopat\,^{IMP}$ (to dig); $pixat\,^{IMP}$ (to shove); $scribble$
verbs, such as *pisat’*IMP (to write), *risovat’*IMP (to paint) (Levin 1993, Veyrenc 1976). This is not to say that the spatial *ZA*—freely applies to all the verbs in the lexical classes above. For instance, *ZA*— can impose a spatial reading on the *spray/load* verb *gruzit’*IMP (to load), as in *zagruzit’*PRF *mebel’ v gruzovik* (to load), but not on the *spray/load* verb *bryzgat’*IMP (to splatter) - *zbryzgat’*PRF *krasku v rakovinu* (to splatter the paint into the sink). Thus, with the exception of the determinate and semelfactive subclasses of motion verbs, the spatial prefix *ZA*— seems to pick out particular verbs, belonging to various lexical classes, rather than take entire lexical classes as its input. I will return to this point shortly. For now, I shall refer to such verbs collectively as assorted verbs.

The last type of input verbs for the spatial *ZA*— are the empty-based verbs; i.e. the verbs that do not have an autonomous meaning in their imperfective form. Take verbs like *zafutbolit’*PRF and *zafigačit’*PRF that in Russian have a meaning of *throwing forcefully some object into some goal*. On the assumption that these verbs are derived by the prefix *ZA*— from imperfective bases, it appears that the imperfective unprefixed forms *futbolit’* and *figačit’* do not have a meaning of their own, though the former is probably a denominal verb, derived from the noun *futbol* (football). Thus, it seems that the spatial meaning of *ZA*— can be imposed by the prefix alone, when an imperfective verb that the prefix attaches to acts as a sort of bound morpheme (such as –*berry*, which combines with *cran*— and forms *cranberry* in English). Naturally, an imposition of the spatial meaning upon an empty-base verb is possible only in an appropriate contextual environment that provides a moving entity, such as *ball*, and a goal argument, such as *gate*.

(20) a. # Ivan futbolil IMP mjač v vorota.
   Ivan footballed ball in gate

   b. Ivan zafutbolil PRF mjač v vorota.
   Ivan ZA-footballed ball in gate

   'Ivan forcefully kicked the ball into the gate.'

Now, let's rank the aforementioned classes of input verbs with respect to their compatibility with the meaning of motion, expressed by the spatial *ZA*-prefixed outputs. As mentioned earlier, there are roughly three levels of such compatibility,
observed in the input verbs. A high compatibility means that an input verb is capable of expressing a meaning of motion and its lexical argument structure allows a presence of a goal argument. Such input verb undergoes a slight shift in its lexical meaning and argument structure. A low compatibility means that an input verb does not express motion toward some goal. Input verbs of that type undergo significant changes in their lexical meanings and argument structures. Finally, for the empty-based verbs, the concept of compatibility is irrelevant, since their input forms do not have any lexical meaning at all. In fact, the spatial prefix ZA- imposes the lexical structure on such verbs, since their bases provide only a vague lexical content, if any.

The determinate and semelfactive motion verbs display a high compatibility with the spatial cluster meaning of ZA-. Both classes of verbs can express a motion toward some goal, as illustrated in (21)-(24).

(21) Ivan šel imp (na vokzal).
    Ivan went on railroad station
    'Ivan went (to a/the railroad station).'

(22) Viktor njos imp mebel' (v magazin).
    Viktor carried furniture in store
    'Viktor carried furniture (to a/the store).'

(23) Mark pustil prf raketu (v kosmos).
    Mark launched rocket in space
    'Mark launched the rocket (to the space).'

(24) Mark brosil prf kamen' (v kolodez).
    Mark threw stone in well
    'Mark threw the stone (to the well).'

The input verbs above, however, differ from their outputs in two important aspects. A spatial ZA-prefixed verb requires a goal argument to be present in its argument structure and puts a moving entity within the boundaries of a goal area at the culmination of a motion event. Contrary to their ZA-prefix ed outputs, the goal
arguments in (21)-(24) are optional, rather than obligatory, and can be omitted without affecting grammaticality of the verbs. In regard to the lexical meaning, the input verbs in (21)-(24) do not impose any requirements on the location of a moving entity at the culmination point of an event. For instance, an event of Ivan walking to the railroad station in (21) does not require that Ivan reached the station, while the event of throwing stone in (24) does not mean that the stone had to end up in the well.

(25) Ivan šel na vokzal, kogda ego sbil tramvaj.
Ivan went on railroad station when him hit tram
'Ivan went to a/the railroad station, when he was hit by a/the tram.'

(26) Mark brosil kamen’ v kolodez, no ne popal.
Mark threw stone in well but not hit
'Mark threw the stone at the well, but missed.'

Some of the assorted verbs, such as *pour* and *spray/load* verbs, also display a high compatibility with the spatial cluster meaning of ZA-.

(27) Ivan sypal pesok (v jamu).
Ivan poured sand in hole
'Ivan poured sand (to a/the hole).

(28) Ivan gruzil mebel’ (v gruzovik).
Ivan loaded furniture in truck
'Ivan loaded furniture (to a/the truck).

As in the case of (21)-(24), examples (27)-28) do not require an obligatory goal argument, though may occur with one. When a goal argument is present, the input *pour* verbs do not entail that all the contextually specified amount of the moving substance reached the goal point, although there is a strong implication that some minimal parts did. For instance, if Ivan was pouring sand to the hole in the ground, when he was ordered to stop, it is reasonable that he managed to pour some amount of sand into the hole.
Some other assorted verbs show a low compatibility with the output meaning of ZA-. Such verbs do not express motion directly and, consequently, do not occur with a goal argument, although there are some elements of motion present in their meanings. For instance, the verb *kopati*IMP (to dig) involves some type of motion in its lexical meaning, but this motion cannot be directed toward specific goal, as illustrated in (29) by the ungrammaticality of *dig* with *ground* as its goal argument and *treasure* as holistic theme. The verbs *biti*IMP (to hit) and *pisati*IMP (to write) in (30)-(31) show a similar incompatibility with the meaning of directed motion toward some goal.

(29) Ivan *kopati*IMP zemlju /*klad v zemlju*.
    Ivan dug ground treasure in ground
    'Ivan dug the ground.'

(30) Ivan *bili*IMP po gvozdju /*gvozd' v stenu*.
    Ivan hit on nail nail in wall
    'Ivan hit a/the nail.'

(31) Ivan *pisati*IMP tekst v tetradi /*? v tetrad'.
    Ivan wrote text in notebook.LOC in notebook.ACC
    'Ivan wrote a/the text in a/the notebook'

The *nail* in (30) can only be used as an indirect object, serving as location of the hitting event, rather than its holistic or goal argument. The *notebook* in (31) is normally assigned locative case, rather than accusative one, and signifies a location of the writing event, rather than its goal. A goal interpretation of the accusative *tetradi* (notebook) is less acceptable.

The analysis of the input verbs for the spatial ZA- provides the following picture. Two thematic subclasses of the motion verbs – imperfective determinate motion verbs and perfective semelfactive motion verbs – serve as inputs for the spatial ZA-. The verbs of these classes also uniformly display a high compatibility with the spatial cluster meaning of ZA-, as shown above. Other input verbs that occur with the spatial ZA- come from various thematic classes and show a mixed compatibility with the spatial meaning of their ZA-prefixed outputs. For instance, some *pour* and *spray/load* verbs are highly compatible with the meaning of directed motion toward a goal, while
some \textit{hit} and \textit{poke} verbs do not naturally express this meaning. The empty-based input verbs constitute an extreme case, in which the lexical meaning of a verb is constructed not by the base verb itself, but by the prefix \textit{ZA} and the context. Based on the discussion above, I propose a partial classification of the input verbs with respect to the natural lexical classes and the degree of compatibility with the output meaning of motion in the following table 3.1.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Thematic Class} & \textbf{Compatibility with the meaning of motion toward a goal.} \\
\hline
motion verbs & High \\
\hline
1. determinate motion verbs & High \\
2. semelfactive motion verbs & High \\
\hline
assorted verbs & Mixed \\
\hline
1. \textit{pour verbs}: lit' (pour) & High \\
2. \textit{load verbs}: gruzit' (load) & High \\
3. \textit{concealment verbs}: prjatat' (hide) & High \\
4. \textit{scribble verbs}: pisat' (write) & Low \\
5. \textit{hit verbs}: bit' (to hit) & Low \\
6. \textit{poke verbs}: kopat' (to dig) & Low \\
\hline
\textit{empty-based verbs} & Irrelevant \\
\hline
\end{tabular}
\caption{A Partial Classification of the Input Verbs for the Spatial \textit{ZA}-}
\end{table}

It is important to bear in mind that, as said above, the division of the input verbs into thematic classes is based on the study in Levin 1993, which is founded on the English data. It is very likely that the thematic classes of lexical verbs in Russian do not have one-to-one matching with the thematic classes of verbs in English. For instance, the \textit{ZA}-prefixed counterpart of \textit{gruzit'}^{\text{IMP}} (to load) shows a locative alternation, typical for the \textit{spray/load} verbs in English, but the \textit{ZA}-prefixed form of
another spray/load verb bryzgat’IMP (splatter) does not exhibit a locative alternation in Russian. Such situation leaves two possibilities open with respect to what I named assorted verbs. Either the spatial prefix ZA- picks out particular verbs from various thematic classes, as I suggested earlier, or it takes entire thematic classes of verbs as its input, but those thematic classes of verbs in Russian consist of different verbs than their analogs in English. As Rappaport-Hovav & Levin 1998 sum it up: "the range of meanings available to members of a particular verb class in one language may not be available to the members of the corresponding class in another language." (Rappaport-Hovav & Levin 1998: 100). Choosing one of these possibilities over another would require a fundamental investigation of thematic verb classes and alternations in Russian, analogous to the work of Beth Levin in English. Moreover, such investigation would have to account for the difference between the input non-prefixed verbs and their prefixed counterparts. For example, the spatial ZA-prefix ed verbs in Russian may be regarded as a single thematic class, but their non-prefixed input verbs obviously belong to different thematic classes. The classification of the input verbs for the spatial ZA- in Table 3.1 is, then, a partial attempt on my part to divide a sample of input verbs into some assumed thematic classes. The only two thematic classes which the spatial prefix ZA- seems to take entirely as its input are imperfective determinate motion verbs and perfective semelfactive motion verbs. Therefore, these classes shall provide most empirical material for conducting a comparison between the spatial verbs and their inputs in the section 3.4.

**3.4 The Comparison: The Spatial ZA-Prefixed Verbs vs. their Inputs**

Having discussed the spatial ZA-prefix ed verbs and their input counterparts, I can now proceed to comparing between the two forms. As mentioned earlier, the purpose of such comparison is to track the changes in the semantics of an input verb, induced by applying the spatial prefix ZA-. I distinguish between three types of such changes: 1) a change in the lexical aspectual class of an input verb; 2) a change in the lexical argument structure of an input verb, 3) a change in the lexical meaning of an input verb. Due to the fact that the input verbs for the spatial ZA- are widely heterogeneous, I expect that my findings would reflect certain diversity with respect to these changes. As we have already seen in 3.3, some particular verbs or verb classes undergo minor changes in their lexical meaning and argument structure, while other verbs acquire a
different lexical meaning and/or argument structure in combination with \(ZA\). The semantic mechanism of \(ZA\) seems to be so powerful that, in the case of empty-based verbs, the entire lexical meaning and argument structure of a verb is built from scratch by applying the prefix. Thus, the degree of change in the semantics of input verbs shall range from a minor change in which the effects of applying the spatial \(ZA\) to an input verb are less apparent to a maximal change, such as constructing a spatial \(ZA\)-prefixed verb out of an empty-based input verb. In what follows, I will present the cases of aspectual shifts and changes in the lexical meaning and argument structure of the input verbs.

### 3.4.1 Aspectual Shifts in the Input Verbs

Chapter I outlined the Vendlerian classification of verbs, which divides the verbs in the English lexicon into four distinct lexical aspectual classes: activities, states, achievements and accomplishments. In the course of the discussion in chapter I, I reached the conclusion that the Vendlerian classification of the lexical verbs is valid in Russian as well as in English, though there is a certain correlation between the lexical aspectual Vendlerian classes and the grammatical aspect category. Following Padučeva 1996, I proposed the following interaction between the grammatical and the lexical aspects in Russian in table 3.2 (repeated from chapter I).

<table>
<thead>
<tr>
<th></th>
<th>Perfective</th>
<th>Imperfective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>States</strong></td>
<td>delimited states(^{14})</td>
<td>+</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td>delimited activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or semelfactive forms</td>
<td>+</td>
</tr>
<tr>
<td><strong>Achievements</strong></td>
<td>+</td>
<td>only on iterative reading</td>
</tr>
<tr>
<td><strong>Accomplishments</strong></td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

\(^{14}\) Delimited states and delimited activities are derived by the prefixes *po*- and *pro*- and mean that the duration of an activity/state is temporally constrained with respect to some measure (e.g., *poživ* (to live for a long period of time), *pobolet* (to be sick for a while); *poguljat* (to take a walk for some time)). I assume that delimited states and activities are not new lexical aspectual classes, but rather new subtypes of activities and states, obtained by the interaction of Vendler classes with semantics of prefixes and semantics of perfective operator in Russian.
Having adopted the lexical aspectual classes in table 3.2, it is now possible to compare the input verbs, discussed in 3.3, to their ZA-prefixed outputs with respect to their aspectual classification and see whether the application of ZA- causes any aspectual shift in the input forms (as suggested in Janda 1985). As shown in 3.3, the input forms are divided into three major groups. The first group includes two subclasses of motion verbs – determinate and semelfactive motion verbs. These verbs are the closest ones to the spatial cluster meaning of ZA- in terms of their lexical meaning and argument structure. The second group includes non-motion verbs that are picked from different thematic classes. Some of them, such as *pour* verbs, exhibit high compatibility with the meaning of the ZA-prefixed verbs, similarly to the input verbs of the first group. Other non-motion verbs, such as *hit*, undergo visible changes in their meaning and argument structure in order to acquire the spatial cluster meaning. The third group consists of empty-based verbs that do not have a coherent meaning without a prefix. Obviously, for this group of verbs only an output form can be evaluated in terms of a Vendlerian class.

Let me start with the lexical class of semelfactive motion verbs that acquire a spatial meaning with ZA-, such as *prygnut* <sup>PRF</sup> (to jump) and *brosit* <sup>PRF</sup> (to throw). In terms of their lexical aspectual class, semelfacts are a variation of activity verbs, denoting a single minimal instantiation of an activity event (Smith 1991, Rothstein 2004, 2007). In English, those activities that have a semelfactive reading are homonymous with their semelfactive forms; and a reader requires a contextual support to distinguish between the two readings, as in (32) below [quoted from Rothstein 2007].

(32) a. Ivan jumped for an hour. [Activity Reading]
    b. Ivan jumped in 15 seconds. [Semelfactive Reading]

In Russian, semelfactive verbs are perfective and morphologically distinct from their activity counterparts. They are either derived from activity verbs by the perfectivizing suffix *-nu*, as in *pryga*t <sup>IMP</sup> (to jump) – *prygnut* <sup>PRF</sup> (to jump once), or are basically perfective, as in *brosit* <sup>PRF</sup> (to throw once) – *brosat* <sup>IMP</sup> (to throw). With respect to the temporal modification diagnostic tests (Dowty 1979, Rothstein 2004), semelfactive verbs in Russian, as well as in English, are not allowed with *for X time*, but are compatible with *at X time* and *in X time* modifiers.
The problem is that the same results are obtained for achievement verbs with respect to the temporal modification. Thus, the temporal-based diagnostic tests are not adequate for distinguishing between achievement and semelfactive verbs. In order to draw a line between these two classes of verbs, we have to rely on two crucial pieces of evidence. The first one concerns a correlation between semelfactive verbs and their corresponding activity counterparts. Being minimal activity events, semelfactive verbs can be subjected to the *S-summing operation* (Rothstein 2004, 2007) that derives single extended activity events out of minimal activity events. In other words, a number of events of the same type (such as jump) can be summed together to form a single activity event which they constitute parts of. One of the requirements of the S-summing operation is that the summed events have to overlap temporally; i.e. for any two events \( e \) and \( e' \) the ending point of the first event \( e \) is the starting point for the second event \( e' \). Achievements, on the other hand, cannot be summed together in such way, due to the fact that achievements are changes from \( \neg \alpha \) to \( \alpha \) and, hence, the end of an achievement event cannot serve as a starting point for another achievement event of the same kind. For English, it means that each semelfactive verb has a corresponding activity verb that can be modified with *for X time*, while it is not the case for achievement verbs. Thus, we witness a contrast between a semelfactive/activity pair in (34a) and an achievement verb in (34b).

(34) a. Ivan jumped at 12:00 [Semelfactive] / for an hour [Activity].
   b. Ivan found the treasure at 12:00 / * for an hour. [Achievement]

15 Rothstein 2004 notes that there are exceptions to this rule, such as 'degree' achievements of the *cool* type which can be S-summed, because they denote changes from one degree into the next on some scale of comparison, rather than changes from \( \neg \alpha \rightarrow \alpha \).
In Russian, a semelfactive/achievement distinction is more complex due to the
perfective/imperfective grammatical distinction and its interaction with the lexical
aspect. As noted in Padučeva 1996 and 2004, achievement verbs in Russian (or
momental'nye glagoly [instantaneous verbs] in her terminology) are perfective and
their imperfective correlates are acceptable under a habitual interpretation, but not
under a progressive one.\(^{16}\)

\((35)\) a. Ivan našel\(^{PRF}\) klad v 12:00.
   Ivan found treasure in 12:00
   'Ivan found the treasure at 12:00.'

b. * Ivan naxodi\(^{IMP}\) klad, kogda ja uvidel\(^{PRF}\) ego.
   Ivan found treasure when I saw him
   * 'Ivan was finding a/the treasure, when I saw him.'

c. Ivan naxodi\(^{IMP}\) klad, každyj raz kogda učastvoval\(^{IMP}\) v raskopkax.
   Ivan found treasure each time when participated in excavations
   'Ivan found treasure, whenever he took part in excavations.'

The semelfactive verbs, however, have imperfective correlates that denote both
progressive and habitual interpretations, as illustrated in (36b-c):

\((36)\) a. Ivan prynul\(^{PRF}\) v 12:00.
   Ivan jumped in 12:00
   'Ivan jumped at 12:00.'

b. Ivan prygal\(^{IMP}\) pjat' minut'.
   Ivan jumped five minutes
   'Ivan was jumping for five minutes.'

c. Ivan prygal\(^{IMP}\) každyj den'.
   Ivan jumped each day
   'Ivan used to jump every day.'

---

\(^{16}\) Padučeva 2004 classifies both achievements and semelfactives as instantaneous verbs. Nonetheless, she agrees that, unlike achievements, semelfactives give rise to imperfective activities that allow a progressive reading (Elena Padučeva, p.c.)
Thus, the empirical evidence in (35)-(36) allows making a distinction between
perfective achievements and perfective semelfactives in Russian, based on their
correlation with corresponding imperfective forms. Perfective semelfactives have
imperfective activity correlates that are compatible with a progressive reading, while
imperfective counterparts of perfective achievements are used in a habitual context
only.

A second distinction between semelfactive and achievements verbs relies on a
definition of an achievement as an event of change. Following Dowty 1979, Rothstein
2007 defines an event of change as "an event which is defined in terms of bringing
about a specific situation or state of affairs" (emphasis is mine). As mentioned above,
achievements are near-instantaneous changes from \( \neg \alpha \) to \( \alpha \); from a situation in which
a certain state of affairs is false into a situation in which it is true. For instance, the
achievement verb *arrive in the train arrived at the station* describes a change from a
situation in which *the train is not at the station* to a situation in which *the train is at
the station*. Thus, the situation in (37) in which the train arrived at the station, but at
the same time is not there, is a contradiction.

(37) * Poezd pribyl\(^{\text{PRF}}\) na staniziju, no v to \( \neg \) vremja ego tam net.

Train arrived on station but in that time him there not

* 'The train arrived at the station, but is not there yet.'

Then, if semelfactive motion verbs, such as *prygnut\(^{\text{PRF}}\) (to jump)* and *brosit\(^{\text{PRF}}\)
(to throw), were achievements, we would expect them to entail changes in the spatial
position of a moving entity \( X \) from a situation of not being at the location \( Y \) to a
situation of being at that location. For instance, an event of Ivan jumping on the chair
in (38a) would have entailed that Ivan went from a state of not being on the chair to a
state of being on the chair, while an event of Ivan throwing a stone at the well in (38b)
would have entailed that the stone ended up in the well.

(38) a. Ivan prygnul \(^{\text{PRF}}\) na stul.

Ivan jumped on chair

'Ivan jumped on the chair.'
b. Ivan brosîl PRF kamen' v kolodez.
   Ivan threw stone in well
   'Ivan threw the stone to the well.'

The examples (38a)-(38b), however, do not have such entailment, as we can see from the grammaticality of (39a)-(39b).

(39) a. Ivan prygnul PRF na stul no nedoletel PRF / pereletel PRF čerez nego.
   Ivan jumped on chair but underflew overflew through him
   'Ivan jumped at the chair and fell short of it / jumped over it.'
   b. Ivan brosîl PRF kamen' v kolodez, no ne popal PRF.
   Ivan threw stone in well but not hit
   'Ivan threw the stone at the well, but missed.'

Example (39a) is acceptable in the situation in which Ivan did not end up on the chair, either failing to reach it or jumping too far. The sentence in (39b) is acceptable even in a situation in which the stone did not end up in the well. The difference between achievements and semelfactives that denote events of motion is now clear. The former denote a restricted change in space; namely, a change in the spatial position of X, so that X ends up at the specific location Y. The latter, in contrast, describe a non-restricted spatial change, which does not tie X to any specific position in space.

Having established that _prygnut'PRF (to jump) and _brosît'PRF (to throw) are, indeed, semelfactive motion verbs, rather than achievement ones, let's take a look on their _ZA- prefixed counterparts. The temporal modification tests in (40) are not helpful, since they again fail to distinguish between semelfactives and achievements / accomplishments.

(40) a. Ivan zabrosîl PRF kamen' v kolodez v 12:00 / za paru sekund / * pyat' minut.
   Ivan ZA-threw stone in well in 12:00 in couple seconds five minutes
   'Ivan threw the stone into the well at 12:00 / in a couple of seconds.'
b. Mark zatolknul PRF čemodan pod krovat' v 12:00 / za paru sekund / * pyat' minut.

Mark ZA-pushed suitcase under bed in 12:00 in couple seconds five minutes

'Mark pushed the suitcase under the bed at 12:00 / in a couple of seconds.'

Examples (40a)-(40b), however, must entail that Ivan and suitcase ended up in the well and under the bed, respectively, as we can see from the ungrammaticality of (41a)-(41b) in which Ivan and suitcase do not end up within the boundaries of the goal regions.

(41) a. * Ivan zabrosil PRF kamen' v kolodez, no ne popal PRF.

Ivan ZA-threw stone in well but not hit

b. * Mark zatolknul PRF čemodan pod krovat', no v to že vremja ego tam net.

Mark ZA-pushed suitcase under bed but in that time him there not

Thus, the data in (40)-(41) indicates that the ZA-prefixed outputs of semelfactive motion verbs denote events of restricted change in space in which a moving entity ends up within the boundaries of its destination area. Moreover, zabrosit'PRF (to throw into) and zatolknut'PRF (to push into) in (42) appear to be compatible with the incremental modifiers gradually and X-by-X, briefly discussed in chapter I, which serve as a hallmark of accomplishments (Braginsky & Rothstein 2008).

(42) a. Za čas Ivan postepenno, kamen' za kamnem, zabrosil PRF grudu kamnej v kolodez.

In hour Ivan gradually stone-by-stone ZA-threw pile of stones in well

'Ivan gradually, stone-by-stone, threw the pile of stones into the well.'

b. Za čas Mark postepenno, santimeter za santimetrom, zatolknul PRF

In hour Mark gradually centimeter-by-centimeter ZA-pushed čemodan pod krovat'.

suitcase under bed

'Mark gradually, centimeter-by-centimeter, pushed the suitcase under the bed in an hour'
Thus, the data in (42) allows a possibility that the spatial ZA-prefix ed verbs, derived from semelfactive motion verbs by the prefix ZA-, are accomplishments, since they take place gradually over time. In such case, it seems that we encountered a non-standard subtype of accomplishments – the one that alternates between denoting temporally minimal events of change, as in (40), or temporally extended events of change, as in (42). In the case of standard accomplishment events, such as draw a circle or build a palace, an event of change normally occurs over an extensive temporal interval. The near-instantaneous interpretations of such accomplishments are possible, but require a special contextual support, as in (43).

(43) a. Ivan drew a circle on the screen in a second, by pressing the right button.
   b. The jinnee built the palace in a second, by casting a magic spell.

For the spatial ZA-prefixed accomplishments that are derived from the throw type verbs, denoting events of changes that take place over a minimal temporal interval seems to be a default interpretation. For instance, replacing the pile of stones in (42a) by a single stone would make a temporally extended accomplishment interpretation anomalous, as illustrated by the incompatibility of zabrosit\textsuperscript{PRF} (to throw in) with in an hour and gradually in (44):

(44) Ivan * postepenno zabrosil \textsuperscript{PRF} kamen' na kryšu v 12:00 / ! za čas.
    Ivan gradually ZA-threw stone on roof at 12:00 in hour
    'Ivan threw the stone on the roof at 12:00.'

I will discuss this anomaly in more detail in the formal analysis section 3.5. For now, let's check whether a temporally minimal / non-minimal accomplishment alternation occurs with the second class of input motion verbs – the determinate motion verbs. The imperfective determinate motion verbs that serve as an input for the spatial ZA- generally follow an activity pattern with respect to the temporal diagnostic tests. As we can see in (45), the determinate motion verbs are compatible with for X time, reject in X time and allow a progressive reading with at X time or equivalent punctual expressions.
(45) a. Ivan bežal IMP čas / * za čas, kogda ja ego vstretil.
   Ivan ran hour in hour when I him met
   'Ivan had been running for an hour, when I met him.'
b. Korabl' plyl IMP den' / * za den', kogda naporolsja na iceberg
   Ship swam day in day when crushed on iceberg
   'A / the ship had been sailing for a day, when it crushed into an iceberg.'
c. Samolet letel IMP na jug pjad' časov / * za pjad' časov, kogda ego sbila raketa.
   Plane flew on south five hours in five hours when him shot missile
   'A / the plane had been flying south for five hours, when a missile shot it down.'

   With respect to incremental modifiers, the determinate motion verbs show mixed
   results. Normally, they are infelicitous with gradually, but allow the bit-by-bit
   modification, if the bit-by-bit modifiers are measures of space, such as meters and
   miles.

(46) a. Ivan bežal IMP * postepenno / kilometer za kilometrom.
   Ivan ran gradually kilometer-by-kilometer
   'Ivan ran kilometer-by-kilometer.'
b. Samolet letel IMP * postepenno / milja-milej.
   Plane flew gradually mile-by-mile
   'A/the plane flew mile-by-mile.'

   The motion verbs are, however, infelicitous with other forms of bit-by-bit
   modifiers that do not utilize the standard space measure units.

(47) a. * Ivan bežal IMP uliza za ulizej.
   Ivan ran street-by-street.
b. * Samolet letel IMP gorod za gorodom.
   Plane flew city-by-city
Compare it with the secondary imperfective forms of the prefixed determinate motions verbs \textit{probežat}^{\text{PRF}} (to run through) and \textit{proletet}^{\text{PRF}} (to fly through) in (48).

(48) a. Ivan probeg\textit{al}^{\text{IMP}} uliza za ulizej.
   Ivan ran through street-by-street.
   'Ivan passed by street-by-street, while running.'

b. Samolet prolet\textit{al}^{\text{IMP}} gorod za gorodom.
   Plane flew through city-by-city
   'A/the plane passed by city-by-city, while flying.'

To sum up, the determinate motion verbs behave as activity verbs in their interaction with the majority of diagnostic tests – temporal and incremental. Their acceptability with some bit-by-bit modifiers may be explained by assuming that these modifiers describe the manner of motion, rather than modify an event of change. (An alternative explanation is that the motion activity verbs have an implicit path argument (Krifka, 1998) and the mile-by-mile modification acts as a measure function of such path argument.) I believe that the data above provides enough empirical evidence to classify the imperfective determinate motion verbs in Russian as activities. Bearing this in mind, I shall now evaluate their spatial ZA-prefixed outputs by subjecting them to the same diagnostic tests.

At the first sight, the determinate motion verbs, prefixed with \textit{ZA-}, are acceptable with the \textit{at X time} modifier, which is a pattern, compatible with achievement verbs.

(49) a. Ivan zabež\textit{al}^{\text{PRF}} v dom v dva časa dnja.
   Ivan ZA-ran in house in two hour of day
   'Ivan ran into the house at 14:00.'

b. Mark zaš\textit{el}^{\text{PRF}} v les v 12:00.
   Mark ZA-walked in forest in 12:00
   'Mark walked into the forest at 12:00.'

c. Korabl' zap\textit{yl}^{\text{PRF}} v buxtu v pja\textit{t} časov dnja.
   Ship ZA-swim in bay in five hours of day
   'The ship sailed into the harbor at 17:00.'
d. Kamen' zaletel $^{PRF}$ v okno $^{v}$ v 12:00.
   Stone ZA-flew in window in 12:00
   'The stone flew into the window at 12:00.'

e. David zataščil $^{PRF}$ čemodan v kvartiru $^{v}$ v 12:00.
   David ZA-carried suitcase in apartment in 12:00
   'David carried the suitcase into the apartment at 12:00.'

f. Ann zalezla $^{PRF}$ na veršinu gory $^{v}$ v 12:00.
   Ann ZA-climbed on top of mountain in 12:00
   'Ann climbed on the top of the mountain at 12:00.'

The spatial ZA-prefixed verbs in (49) can also be compatible with an accomplishment interpretation, as we can see from their compatibility with *gradually*, *X-by-X* and *in X time* modifiers in (50).

(50) a. Za den' Ann postepenno / kilometer za kilometrom zalezla $^{PRF}$ na Everest.
   In day Ann gradually kilometer-by-kilometer ZA-climbed on Everest
   'In a day, Ann gradually/kilometer-by-kilometer climbed the Everest.'

b. Za čas Mark postepenno / šag za šagom zašel $^{PRF}$ daleko v les.
   In hour Mark gradually step-by-step ZA-walked far in forest
   'In an hour, Mark gradually / step-by-step walked far into the forest.'

c. Za 20 let kosmičeskij zond ?postepenno / ?milja-za-mjilej zaletel $^{PRF}$
   In 20 years space probe gradually mile-by-mile ZA-flew daleko za predely našej solnečnoj systemy.
   far beyond limits of our solar system
   'In twenty years, the space probe gradually, mile-by-mile flew far beyond the borders of our solar system.'

d. Za čas korabl' postepenno / meter za metrom zaplyl $^{PRF}$ v buxtu.
   In hour ship gradually meter-by-meter ZA-swam in bay
   'The ship gradually / meter-by-meter sailed into the bay in an hour.'

e. Ivan * postepenno / meter za metrom zabežal $^{PRF}$ na veršinu xolma za 15 minut.
   Ivan gradually meter by meter ZA-ran on top of hill in 15 minutes
   'Ivan ran to the top of the hill meter-by-meter in 15 minutes.'
The examples in (50) show that the motion events, described by the given verbs, take place over an extended interval of time. Most of the ZA-prefixixed verbs in (50) are also compatible with the incremental modifier *gradually*, with the exception of \textit{zabežat}^\text{PRF} (to run into) in (50e) and \textit{zaletet}^\text{PRF} (to fly into) in (50c). I assume that a motion event in which the moving entity travels with a relatively high velocity, as in the case of running and flying, clashes with the idea of a gradual step-by-step change on pragmatic grounds.

To sum up, the ZA-prefixixed analogues of the determinate imperfective verbs exhibit an intriguing behavior with regard to their position in the Vendlerian system. It appears that these verbs alternate between an achievement and an accomplishment reading, similarly to the semelfactive-based ZA-prefixixed verbs we discussed earlier. Assuming that the spatial ZA-prefixixed verbs in (50) are accomplishments, it seems that the alternation between near-instantaneous and temporally extended events of change is a general phenomenon, exhibited by the spatial ZA-prefixixed verbs. To make sure that it is the case, let's take a look upon a second group of input verbs – the assorted non-motion verbs that acquire a spatial meaning with the prefix ZA-.

Since the assorted input verbs are all imperfective, we have to rely on the incremental modification to distinguish between the imperfective activities and the imperfective accomplishments. The results of incremental modification seem to divide the input verbs \textit{kopat}^\text{IMP} (to dig), \textit{lit}^\text{IMP} (to pour), \textit{pisat} (to write), \textit{risovat}^\text{IMP} (to paint) into the imperfective activities in (51) and the imperfective accomplishments in (51).

\begin{enumerate}
  \item (51) a. Ivan * postepenno kopal \textsuperscript{IMP} zemlju.
      Ivan gradually dug ground
      'Ivan dug the ground.'
  \item b. David * postepenno lit \textsuperscript{IMP} vodu (v bak).
      David gradually poured water in tank
      'David poured water (in the tank).'</n
  \item (52) a. Ivan postepenno/stroka za strokoj pisal \textsuperscript{IMP} tekst (v tetradi').
      Ivan gradually line-by-line wrote text in notebook
      'Ivan gradually/line-by-line wrote a/the text (in his notebook).'</n
\end{enumerate}
b. David postepenno / štrix za štrixom risovalIMP portret Mary.

David gradually stroke-by-stroke painted portrait of Mary
'David gradually / stroke-by-stroke painted a portrait of Mary.'

The ZA-prefixed counterparts of the input verbs in (51)-(52) also display an alternation between temporally minimal readings in (53a-b)-(54a-b) and temporally extended readings in (53a'-b')-(54a'-b').

(53) a. Ivan zakopalPRF klad v zemlju v polnoc'.

Ivan ZA-dug treasure in ground in midnight
'Ivan buried the treasure in the ground at midnight.'
a'. Ivan postepenno zakopalPRF klad za paru časov.

Ivan gradually ZA-dug treasure in couple of hours
'Ivan gradually buried the treasure in a few hours.'
b. David zalilPRF vodu v bak v 13:00.

David ZA-poured water in tank in 13:00
'David poured the water into the tank at 13:00.'
b'. David postepenno zalilPRF vodu v bak za čas.

David gradually ZA-poured water in tank in hour
'David gradually poured the water into the tank in an hour.'

(54) a. Ivan zapisalPRF tekst v tetrad' v 12:00.

Ivan ZA-wrote text in notebook in 12:00
'Ivan wrote the text down into his notebook at 12:00.'
a'. Ivan postepenno zapisalPRF tekst v tetrad' za čas.

Ivan gradually ZA-wrote text in notebook in hour
'Ivan gradually wrote the text down into his notebook in an hour.'
b. Ivan zarisovalPRF peizaž v albom v polden'.

Ivan ZA-painted landscape in album at noon
'Ivan painted the landscape in his album at noon.'
b'. Za den' Ivan postepenno zarisovalPRF peizaz v albom

In day Ivan gradually ZA-painted landscape in album
'Ivan gradually painted the landscape in his album in a day.'
It is worthwhile noting that the lexical meaning of the lexical imperfective accomplishments to write and to paint in (52) is shifted into to write down and to paint in in (54), respectively. Thus, it seems that the spatial ZA-prefixed accomplishments in (54) refer to taking an existing object, such as a text or a landscape, and relocating it into a new position by the means of writing or painting. Such object does not necessarily have to be a physical one, since Ivan zapisał PRF v tetrad' mysli, prišedšie PRF emu v golovu (Ivan wrote down into the notebook the thoughts that came to his mind) is perfectly admissible in Russian. The crucial point is that the examples in (54) do not create a new text or a landscape, but in some sense change a spatial position of the existing ones\(^\text{17}\). This point is important for the formal analysis of the spatial meaning in the section 3.5.

The last group of the input verbs for the spatial ZA- is the empty-based verbs. In general, empty-based verbs are bound morphemes – they do not have a fully supportable meaning of their own and require a verbal prefix in order to acquire a lexical meaning. For instance, *futbolit' and *kryt' are associated with some vague meanings of throw and cover, but are not used in the contemporary Russian without a verbal prefix. futbolit' may form za(futbolit' (to kick in) with the prefix ZA- or ot(futbolit' (to bounce off) with the prefix OT-. *kryt' may form zakryt' (to close) with the prefix ZA-, otkryt' (to open) with the prefix OT-, prikryt' (to close halfway) with the prefix PRI- and perekryt' (to block) with the prefix PERE-. Thus, in the case of the empty-based verbs, only the prefixed form is lexically accessible and can be tested with regard to its Vendler classification. Let's take the empty-based verbs *figačit' and *vintit' and examine the behavior of their ZA-prefixed forms with respect to the temporal and incremental tests.

(55) a. Ivan zafigačit' PRF šar v luzu v 12:00 [in the context of a snooker game]

Ivan ZA-threw ball in pocket in 12:00

Ivan sent the ball into the pocket at 12:00

b. *Ivan postepenno zafigačit' PRF šar v luzu za 10 minut.

Ivan gradually ZA-threw ball in pocket in 10 minutes

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\(^{17}\) The traditional perfective counterparts to pisat' (to write) and risovat' (to paint) are napisat' (to write) and narisovat' (to paint) which are used for describing an event of creation: Ivan napisal knigu (Ivan wrote the book), Ivan narisoval kartinu (Ivan painted the painting). The verb zarisovat' has an additional non-spatial interpretation, as in zarisovat' stenu (to cover the wall with paint) which will be discussed in the next chapter.
The verb \textit{zafigačiti}^{\text{PRF}} (to throw, send into) in (55) shows resemblance to the semelfactive-based \textit{zabrositi}^{\text{PRF}} (to throw into) by rejecting a non-minimal accomplishment reading in (55b) with a single solid object. Such reading is still possible in (55c) with the plural object \textit{red balls}. The verb \textit{zavinti}^{\text{PRF}} (to screw in) in (56), on the other hand, is compatible with both a temporally minimal reading in (56a) and a temporally extended reading in (56b).

To sum up, the (non-empty-based) input verbs for the spatial prefix \textit{ZA}- can be divided into two lexical aspectual categories. The first category is activity verbs, which includes imperfective activities, as well as perfective semelfactives. Most of the input verbs for the spatial prefix \textit{ZA}- belong to this category. A limited number of imperfective accomplishments, such as \textit{write} and \textit{paint}, can also serve as an input for the spatial \textit{ZA}-. As for the aspectual Vendler class of the spatial \textit{ZA}-prefixed verbs themselves, they were found to alternate between a near-instantaneous interpretation and a temporally extended interpretation. Assuming that accomplishment verbs can express temporally minimal interpretations, empirical evidence in the current section 3.4.1 suggests that the spatial \textit{ZA}-prefixed verbs uniformly denote accomplishment events. The flexibility of an alternation between minimal and non-minimal readings seems to vary across the verbs. Some input verbs, such as \textit{zabrositi}^{\text{PRF}} (to throw in), \textit{zabežati}^{\text{PRF}} (to run into), \textit{zaletet}^{\text{PRF}} (to fly into), \textit{zafigačiti}^{\text{PRF}} (to throw in), show a tendency to prefer a temporally minimal reading with a single holistic theme argument. On the other hand, the accomplishment-based spatial verbs, such as \textit{zapisati}^{\text{PRF}} (to write down), are more natural with the temporally extended accomplishment
The correlation between the input and the output verbs in terms of Vendler classes is summarized in table 3.3.

<table>
<thead>
<tr>
<th>Input Verbs</th>
<th>Spatial ZA-Prefixed Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity / Semelfactive</td>
<td>Accomplishment</td>
</tr>
<tr>
<td></td>
<td>(with support for temporally minimal interpretation)</td>
</tr>
</tbody>
</table>

The data above suggest that the prefix ZA- acts as a lexical aspeccual shift operator, deriving accomplishment verbs out of activity ones. The spatial ZA-prefixed accomplishment verbs have an interesting feature – they allow temporally minimal readings, which seem to be the default readings for some verbs. In particular, the semelfactive-based throw-type verbs, such as zabrosit$^{\text{PRF}}$ (to throw into), zakinut$^{\text{PRF}}$ (to fling into), zašvyrunut$^{\text{PRF}}$ (to throw with force into) acquire a temporally minimal reading and are odd with non-minimal readings, when they take single holistic theme arguments. In order to learn more about the nature of accomplishments, derived by ZA-, we need to examine changes in lexical meaning and argument structure, which are induced by the prefix ZA- alongside aspeccual shifts.

### 3.4.2 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs

As I argued in the section 3.2, all the spatial ZA-prefixed verbs share an underlying meaning of motion into a goal area, so that a moving object is within the boundaries of that area by the end of a motion event. Consequently, all the input verbs for the spatial ZA- are coerced into this meaning of MOVE INTO, which I called in the previous sections the *spatial cluster meaning of ZA*-. One of the conditions for a realization of the *spatial cluster meaning of ZA*- is the obligatory presence of a goal argument in the lexical argument structure of a ZA-prefixed verb. This is not to say that the goal argument needs to be explicitly expressed for every particular verb. In some cases, the goal argument can be implied by the context or be a part of the lexical meaning of a given verb. For instance, the verbs zakopat$^{\text{PRF}}$ (to bury) and zaryt$^{\text{PRF}}$
(to bury) do not require an explicit goal argument, since their imperfective counterparts kopat'IMP (to dig) and ryt'IMP (to burrow, to dig) have an embedded ground argument as a part of their lexical meaning. Therefore, the ZA-prefixed derivatives of these verbs involve an implicit goal argument, which is, by default, ground or earth (in Russian, denoted by a single word zemlja). An implicit goal argument is not necessarily overtly expressed, though it is present in the lexical argument structures of the given verbs. In general, a goal argument is explicitly realized in the majority of the spatial verbs (and is implicitly present in the rest). Thus, the input verbs undergo changes in their lexical argument structure to comply with the requirement for a goal argument. In the case of the input verbs that allow an implicit goal argument in their argument structure, such as determinate and semelfactive motion verbs and pour verbs, such implicit argument becomes explicitly lexicalized. For the input verbs that do not allow a goal argument in their lexical argument structure, such as kopat'IMP (to dig), the lexical argument structure changes to accommodate a goal argument, imposed by the spatial prefix ZA-. The former case is illustrated in (57) with the verb zajidi IMP (to go), and the latter – in (58) with the verb kopat'IMP (to dig).

(57) a. Ivan šel IMP (v les).
    Ivan walked in forest
    'Ivan walked (to a/the forest).'

b. Ivan zašel PRF ??(v les).
    Ivan ZA-walked in forest
    'Ivan walked into the forest.'

(58) a. Ivan kopal IMP zemlju / (*klad v zemlju).
    Ivan dug ground treasure in ground
    'Ivan dug the ground.'

b. Ivan zakopal PRF ??(klad v zemlju).
    Ivan ZA-dug treasure in ground
    'Ivan buried the treasure into the ground.'
A goal argument is usually introduced by the spatial preposition \(v\)- (in), which assigns it accusative case. Ferm 1990 shows, however, that the class of determinate motion verbs is compatible with the additional prepositions \(na\)- (on), \(k\)- (toward), \(za\)- (beyond)\(^{18}\), \(pod\)- (under), \(do\)- (up to) and \(iz\)- and \(s\)- (from). The last two prepositions introduce a source argument, which is not an obligatory participant in the argument structure of the \(ZA\)-prefixed verbs. The preposition \(na\)- (on) is similar to \(v\)- in denoting a movement into the goal region, but, in contrast with \(v\)-, may also denote a movement upward from below, so that the moving object ends up on the top of the goal region (example 59a). A moving object crosses the boundary of its goal region, as in the case with \(v\)-.

(59) a. Ivan zalez\(_{PRF}\) na kryšu.
   Ivan ZA-climbed on roof
   'Ivan climbed onto the roof.'
   b. Mary zabezala\(_{PRF}\) na počtu.
   Mary ZA-ran on post-office
   'Mary ran into the post-office.'

The preposition \(k\)- (toward) is used when the moving entity goes in the direction of the outer boundary of some area, brought in by \(k\)-. The input motion verbs are compatible with \(k\)-, but their \(ZA\)-prefixed counterparts are not. This is not surprising, since the \(ZA\)-prefixed spatial verbs require that the moving object crosses the boundaries of the goal region, while \(k\)- only designates a direction or a path toward the goal.

(60) a. Ivan šel\(_{IMP}\) k lesu.
   Ivan walked toward forest
   'Ivan walked toward the forest.'
   b. * Ivan zašel\(_{PRF}\) k lesu.
   Ivan ZA-walked toward forest

\(^{18}\) Ferm 1990 actually proposes two prefixes \(ZA\)-: the first combines with the preposition \(za\)-, and expresses an idea of moving into the small constrained region of space, which lies right beyond some object, as in \(zajižī širenu\) (to go beyond the curtain). The second expresses a movement deep beyond some boundary, as in \(zaletat' za Yaltu\) (to fly beyond Yalta). I think that this difference is due to pragmatic factors and does not require splitting the spatial \(ZA\)- into two semantically distinct prefixes.
There is, however, a special context in which the prefix ZA- is compatible with the preposition $k$. In the cases, where $k$ is followed by an animate noun (denoting a person or an animal), it actually makes an indirect reference to the goal region within which this animate entity is located. In such circumstances, the spatial ZA-prefixed verbs can be used with the $k$-headed PPs.

(61) a. Alex zašel $^{\text{PRF}}$ $k$ drugu.
    Alex ZA-went toward friend
    'Alex went into his friend's place.'

b. Tom zapolz $^{\text{PRF}}$ $k$ myšonku Jerry.
    Tom ZA-crawled toward mouse Jerry
    'Tom crawled into the place of Jerry the mouse.'

The examples in (61) actually do not entail that a moving entity $X$ made any contact with an animate entity $Y$, as we can see in (62).

(62) a. Alex zašel $^{\text{PRF}}$ $k$ drugu, no togo ne bylo doma.
    Alex ZA-went toward friend but him no was home
    'Alex went into his friend's place, but his friend was not home.'

b. Tom zapolz $^{\text{PRF}}$ $k$ myšonku Jerry, no tot udral $^{\text{PRF}}$.
    Tom ZA-crawled toward mouse Jerry but that escaped
    'Tom crawled into the hide-out of Jerry the mouse, but he got away.'

The preposition za- (beyond) does not make a direct reference to the goal region, but rather introduces an outer boundary of the goal region which the moving object crosses (or walks around) in order to get to its destination.

(63) a. Ivan zašel $^{\text{PRF}}$ za dom.
    Ivan ZA-went beyond house
    'Ivan went beyond the house.'

b. Korabl' zaplyl $^{\text{PRF}}$ za liniju ekvatoria.
    Ship ZA-swam beyond line of equator
    'The ship sailed beyond the equator line.'
The preposition *pod*- (under) introduces the top boundary of a goal region, rather then a goal region itself. The goal region lies under this boundary and the moving object relocates there.

(64) a. Koška Murka zalezla \textsuperscript{PRF} pod krovat'  
    Cat Murka ZA-climbed under bed  
    'Murka the cat climbed under the bed.'

b. Mike zašel \textsuperscript{PRF} pod arku.  
    Mike ZA-went under arch  
    'Mike went under the arch.'

The preposition *do*- (up to) is used with the motion events that end up in close vicinity of the outer boundary of some spatial region. The moving object does not cross the outer boundary, making the ZA Prefixed verbs generally unacceptable with this preposition.

(65) a. Ivan šel \textsuperscript{IMP} do magazina, i potom povaračival napravo.  
    Ivan walked up to store and then turned right  
    'Ivan walked up to the store and then turned right.'

b. * Ivan zašel \textsuperscript{PRF} do magazina.  
    Ivan ZA-walked up to store

(66) a. Korabl' plyn\textsuperscript{IMP} do Haify.  
    Ship sailed up to Haifa  
    'A/the ship sailed up to Haifa.'

b. * Korabl' zaplyn\textsuperscript{PRF} do Haify.  
    ship ZA-swam up to Haifa

The preposition *do*, nonetheless, can be used with the spatial ZA- in the context in which it refers to the final boundary of the goal region.
(67) Ja zabudilsja v Tel Avive i zaexal^{PRF} do južnoj okrainy goroda.

'I lost way in Tel Aviv and ZA-drove up to southern outskirt of city

'I got lost in Tel Aviv and drove up to the southern outskirt of the city.'

In (67), the *outskirt* serves as the final boundary of the implicit goal region; namely, *Tel Aviv*, so in this case the preposition *do*- marks the extent of movement inside the city.

To sum up, the data in (59)-(67) shows that the spatial ZA-prefixed verbs combine only with those prepositions that denote a relocation of a moving object into the goal region. Thus, the examples (59)-(67) serve as another empirical evidence for the previously raised claim that the moving object ends up within the boundaries of a goal region at the culmination of a motion event (Ferm, 1990). The comparison between the input and the output verbs w.r.t. the relevant prepositions is given in the following table 3.4.

<table>
<thead>
<tr>
<th>Prepositions</th>
<th>Input Motion Verb</th>
<th>Spatial Perfective ZA-Prefixed Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>v- (in)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>na- (on, on top of)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>k- (toward)</td>
<td>+</td>
<td>only under 'the place of X' reading, where X is an animate entity</td>
</tr>
<tr>
<td>za- (beyond)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>pod- (under)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>do- (up to)</td>
<td>+</td>
<td>only under 'a final boundary' reading</td>
</tr>
<tr>
<td>iz-, s- (from)</td>
<td>+</td>
<td>only when a source region is spatially adjacent to a goal region</td>
</tr>
</tbody>
</table>

One more point I shall mention with respect to the goal argument is the correlation between the spatial properties of a goal argument and the temporally minimal/non-minimal reading alternation of spatial ZA-prefixed accomplishments. Ferm 1990 notes
that the spatial prefix ZA- allows two possible interpretations in regard to the extent of the movement within the goal area: 1) a minimal extent of movement; i.e. just crossing an outer boundary of the goal region; 2) an extended movement deep into the goal region. Under the first reading the prefix ZA- is synonymous with the prefix V-, as in (68) below.

(68) a. Ivan zašel \textsc{prf} v dom v 12:00.
   Ivan ZA-went in house in 12:00
   'Ivan went into the house at 12:00.'
 b. Ivan vošel \textsc{prf} v dom v 12:00.
   Ivan V-went in house in 12:00
   'Ivan went into the house at 12:00.'

On the second interpretation, however, a spatial ZA-prefixed verb refers to a non-minimal intrusion into the goal area, which is not the case for a synonymous V-prefixed verb, as shown in (69).

(69) a. Ivan zašel \textsc{prf} daleko v les za čas.
   Ivan ZA-went far in forest in hour
   'Ivan went far into the forest in an hour.'
 b. * Ivan vošel \textsc{prf} daleko v les za čas..
   Ivan V-went far in forest in hour

A minimal intrusion into the goal area correlates with temporally minimal reading of a given accomplishment event. A non-minimal intrusion gives rise to a temporally extended accomplishment interpretation. As Ferm 1990 shows in her work, a possibility of alternation between a minimal and a non-minimal extent of incursion into the goal region seems to depend on the spatial properties of the goal area, making a temporally minimal/extended alternation of spatial accomplishments pragmatically

\footnote{Ferm also talks about additional meanings, associated with the prefix ZA-, such as an implication of staying for a short time at the destination area, an initial position of the moving object in some distance from the goal area and an implication of making a detour on the way to another goal, as in Ivan zašel \textit{na počtu po puti v biblioteku} (Ivan went into the post-office on his way to the library) (Ferm 1990:38). At the moment, I do not have an answer as to whether the source of these additional implications is a semantic or a pragmatic one, and I have decided to leave the research of these issues for other time.}
dependent. For instance, a relatively small goal area, such as door or chair, blocks the non-minimal incursion interpretation, consequently resulting in a temporally minimal accomplishment reading. On the other hand, a relatively large area, like a forest, implies that the moving entity went far or even too far into the destination region, making possible a non-minimal accomplishment reading in addition to a minimal one. In the case of a non-minimal incursion into the goal region, the extent of incursion can be measured by vague distance-measuring expressions, such as daleko (far away) and gluboko (deep), or by more explicit measures, such as na X kilometers (X kilometers).

The following examples (70)-(71) illustrate cases in which the spatial properties of goal arguments do not normally allow non-minimal incursions (and non-minimal accomplishment reading), while (72)-(73) demonstrate situations in which the goal region allows both minimal and non-minimal incursion (making both minimal and non-minimal accomplishment readings possible).

(70) a. Ivan zašel PRF v dver' v 12:00.
   Ivan ZA-went in door in 12:00
   'Ivan went far into the forest at 12:00.'
   b. * Ivan zašel PRF daleko v dver' za čas.
      Ivan ZA-went far in door in hour

(71) a. Ivan zalez PRF na stul v 12:00.
   Ivan ZA-climbed on chair in 12:00
   'Ivan climbed on the chair at 12:00.'
   b. * Ivan zalez PRF vysoko na stul za čas.
      Ivan ZA-climbed high on chair in hour

(72) a. Ivan zašel PRF v les v 12:00.
   Ivan ZA-went in forest in 12:00
   'Ivan went into the forest at 12:00.'
   b. Ivan zašel PRF daleko / na 10 kilometrov v les za čas.
      Ivan ZA-went far on 10 kilometers in forest in hour
      'Ivan went far/ten kilometers into the forest in an hour.'
(73) a. Ivan zalez $^{PRF}$ na derevo v 12:00
   Ivan ZA-climbed on tree in 12:00
   'Ivan climbed on the tree at 12:00.'

b. Ivan zalez $^{PRF}$ vsoko / na vysotu v tri metra na derevo za čas.
   Ivan ZA-climbed high on height in three meters on tree in hour
   'Ivan climbed high/the height of three meters on the tree in an hour.'

The non-minimal incursion reading is not available with the preposition $k$-, probably due to the fact that this preposition does not provide the goal region directly, but only hints at some vaguely defined place where an animate entity is located. Thus, an extent of the intrusion into the goal region is not measurable for this preposition.

(74) * Ivan zašel $^{PRF}$ daleko k drugu.
   Ivan ZA-walked far to friend

As for the preposition $do$-, being a marker of the final boundary of the goal region, it itself serves as a measure of a distance, covered by a moving object.

(75) Ja zaexal $^{PRF}$ v Tel-Aviv do samoj naberežnoj.
   I drove in Tel-Aviv up to itself sea front
   'I drove into Tel-Aviv, up to the sea front itself.'

It is interesting that the preposition $do$- is odd with additional distance modifiers, as in (76a). The situation improves when the $do$-headed PP is separated by an intonational pause from the rest of the sentence (example 79b). One possible reason for this oddness is the fact that both expressions – a distance modifier and a $do$-introduced final boundary – compete in measuring an extent of the path, thus, violating the Single Measure Constraint, advocated in Rothstein 2004$^{20}$ (see also Filip 2003).

$^{20}$ The Single Measure Constraint allows measuring an atomic event (such as achievement or accomplishment) in only one way. Since both $10$ km and up to Haifa measure an extent of a path within the goal region, the single measure constraint is violated and the sentence is ungrammatical. The comma that separates a second modifier probably points to the existence of the elliptical clause zaletel do Haify (flew up to Haifa) in which the matrix verb is repeated.
(76) a. * Samolet zaletel PRF v vozdušno prostranstvo Izraelja na 10 km do Haify.

Plane ZA-flew in air space of Israel on 10 km up to Haifa

b. ? Samolet zaletel PRF v vozdušno prostranstvo Izraelja na 10 km, do Haify.

Plane ZA-flew in air space of Israel on 10 km up to Haifa

'The plane flew 10 km into the Israel airspace, up to Haifa.'

Thus, there seems to be a correlation between a spatial configuration of a goal region, denoted by a goal argument, and a temporal duration of a spatial accomplishment event. A small goal region constrains an interpretation of a spatial accomplishment to a temporally minimal reading, while a large goal region allows both minimal and non-minimal temporal duration. Such correlation will be accounted for in the formal semantic analysis of the spatial ZA-prefixed accomplishments.

Having discussed the role of a goal argument in the lexical argument structure of the spatial ZA-prefixed verbs, I'd like to say a few words on the source argument and its compatibility with the spatial verbs. Ferm 1990 observes that it is possible to use a source argument, introduced by the prepositions s- and iz- (from), with the ZA-prefixed verbs, on the condition that a goal argument is explicitly stated as well. At the first sight, it would make both input and output motion verbs compatible with source-goal argument combinations. I observed, however, that there is a crucial difference in the way the source argument combines with the imperfective motion verbs and their perfective ZA-prefixed counterparts, as we can see in (77)-(78):

(77) a. Ivan bežal IMP na počtu s drugogo konča goroda.

Ivan ran on post-office from other end of town

'Ivan ran to the post-office from the other end of the town.'

b. Ivan zabezal PRF na počtu s ulizy / * s drugogo konča goroda.

Ivan ZA-ran on post-office from street from other end of town

'Ivan ran into the post-office from the street.'

(78) a. Ivan šel IMP iz centra goroda v les.

Ivan walked from center of town in forest

'Ivan walked from the center of the town to the forest.'
b. Ivan zašel \textsuperscript{PRF} v les s dorogi/ * iz centra goroda.

Ivan ZA-walked in forest from road from center of town
'Ivan walked into the forest from the road.'

The examples (77b)-(78b) show that the spatial ZA-prefixed verbs require that the spatial region, designated by the source argument, is spatially adjacent to the region, introduced by the goal argument. The imperfective motion verbs in (77a)-(78a), on the other hand, do not impose such requirement on their source arguments\textsuperscript{21}.

The last argument in the lexical argument structure that undergoes a change as a result of applying ZA- is a theme argument in transitive input verbs. This argument is reinterpreted as a holistic theme – an object that changes its location in the course of the motion event. In some cases, such reinterpretation affects the choice of an argument – a particular type of arguments that is used by an input verb cannot be assigned a role of holistic theme of its spatial ZA-prefix output. Let's take, for instance, the imperfective transitive verbs \textit{pisat}'\textsuperscript{IMP} (to write) and \textit{bit}'\textsuperscript{IMP} (to hit) that serve as inputs for the spatial prefix ZA-. Their spatial ZA-prefix outputs \textit{zapisat}'\textsuperscript{PRF} and \textit{zabit}'\textsuperscript{PRF} are best interpreted as \textit{to move X into Y by the means of writing} (= write down) and \textit{to move X into Y by hitting} (= hammer into). In the case of \textit{write a book}, it means that an incremental theme argument of an imperfective accomplishment in (79a) must be reinterpreted as a holistic theme argument of a spatial accomplishment in (79b). Thus, (79b) is acceptable only in a context in which the book is an existing object that is transferred into a location Y, rather than being created in the course of writing event.

\begin{enumerate}
\item (79) a. Ivan pisal \textsuperscript{IMP} knigu.
Ivan wrote book
'Ivan wrote a/the book.'
\item b. Ivan zapisal \textsuperscript{PRF} knigu na disk. [in the context of e-book]
Ivan ZA-wrote book on disk
'Ivan wrote the book down onto the disk.'
\end{enumerate}

\textsuperscript{21} As a matter of fact, it seems that the imperfective motion verbs prefer the source to be separated by some spatial interval from the goal of the motion. Thus, \textit{bežat}'s ulizy na počtu (to run from street to post-office) and \textit{idti v les s tropinki} (to go to forest from path) sound quite unnatural in Russian.
A similar situation arises with the verb \textit{bit''IMP} (to hit). In its transitive form, \textit{bit''IMP} takes an animate entity as its theme argument, as in (80a). The spatial prefix \textit{ZA-} transforms an input verb into the spatial accomplishment \textit{zabit''PRF} (to move in by hitting). The spatial accomplishment \textit{zabit''PRF} seems to take inanimate objects only as its holistic theme arguments. Thus, an animate theme argument in the lexical argument structure of \textit{bit''IMP} cannot be used as holistic argument in the argument structure of \textit{zabit''PRF}, as shown in (80).

(80) a. Ivan bil''IMP Marka / * gvozd'.
    Ivan hit Mark nail
    'Ivan hit Mark.'

b. Ivan zabil''PRF * Marka / gvozd'v stenu.
    Ivan ZA-hit Mark nail in wall
    'Ivan hammered the nail into the wall.'

To sum up, the findings in the section 3.4 provide the following picture. First, the prefix \textit{ZA-} is capable of acting as an aspectual shift operator. It applies to activity, semelfactive and accomplishment input verbs and derives accomplishments verbs as its output. Second, the spatial prefix \textit{ZA-} changes a lexical meaning of its input verbs, assigning them a uniform meaning of a motion into some goal area. For the input verbs that express a meaning of motion, such as determinate and semelfactive motion verbs, a change in the lexical meaning is less evident than in the input verbs that normally do not express a meaning of motion. Third, the spatial prefix \textit{ZA-} imposes a number of changes on a lexical argument structure of an input verb. It adds an obligatory goal argument to a lexical argument structure of a verb (or turns an implicit argument into obligatorily realized one) and restricts a source argument to denoting an area, spatially adjacent to the goal region. It also seems to reinterpret the thematic role of a theme argument in some transitive input verbs into a holistic theme. Such reinterpretation is especially evident in the case of imperfective accomplishment input verbs, such as \textit{pisat''IMP} (to write), in which the theme argument is incrementally affected in the course of an event. In the following section 3.5. I propose a formal analysis that explains these findings and provides semantics for the spatial prefix \textit{ZA-}. 
3.5 Formal Semantic Analysis of the Spatial Prefix ZA-

The empirical evidence in 3.4.1 points in favor of analyzing the spatial prefix ZA- as an aspectual operator that derives accomplishment verbs as its output. The concept of verbal prefixes as aspectual operators is not a new idea in linguistic literature: it has been implied in Janda 1985 and Brecht 1985 and independently argued for in Babko-Malaya 1999, among others. Thus, assuming that the prefix ZA- shifts unprefixed activities into accomplishment-type verbs (as corroborated by the results of temporal and incremental tests in 3.4.1), the spatial ZA-prefixed verbs in Russian shall be analyzed as accomplishments. However, the spatial ZA-prefixed accomplishments seem to differ from standard lexical accomplishments in some respects. First, contrary to normative lexical accomplishments, spatial ZA-prefixed accomplishments denote a change in a spatial goal location rather than in a theme object. Second, as manifested in 3.4.2, the given accomplishments impose specific restrictions on the extent of incursion into a goal area and on the adjacency of a source location to the goal area. Third, the spatial verbs are not genuine lexical accomplishments, but rather artificial ones, derived from mainly activity verbs. Thus, a natural question to ask is whether the spatial ZA-verbs are truly accomplishments, and if so, what kind of accomplishments they denote. To answer this question, we need first to define a notion of an accomplishment event in more detail.

As argued in Krifka 1998, a crucial property of accomplishment is a gradual incremental change in its theme. Krifka 1998 defines the notion of incrementality in an accomplishment event as a homomorphism between unique parts of an event and unique parts of an object, denoted by a theme argument of a given accomplishment. For instance, each unique subevent \( e \) in the denotation of \textit{build the house} event has a corresponding unique subpart \( x \) of the \textit{house} object. In a similar way, some motion verbs denote a homomorphism between a motion event to its path. Krifka 1998 discusses examples like \textit{Mary hiked the Vernal Falls Path} in the context of his theory of telicity and incrementality, arguing that the verbs like \textit{hike} express homomorphous relations between the subevents of the \textit{hiking} event and the parts of the \textit{Vernal Falls Path}. Krifka's (1998) analysis of \textit{hike} excludes back-and-forth, circular and \textit{treading on the spot} movements, restricting \textit{hike} to denoting a monotonic change in the position of its moving object with respect to the path. In such a case, the longer the motion event lasts, the further one progresses along the path.
At first sight, it seems tempting to apply Krifka's (1998) analysis to the situation with the spatial ZA-prefixed verbs in Russian. A strong correlation between the temporal duration of a spatial accomplishment event and the size of its goal area, observed in 3.4.2, indicates that the spatial ZA-prefixed verbs denote a strictly incremental monotonic progress of a moving object along its path. Thus, one can argue that the function of the prefix ZA- is simply to build homomorphous relations between motion events, denoted by the unprefixed verbs it applies to, and their paths (assuming that such events contain implicit or explicit paths in their denotation). Such analysis of ZA- would, however, be incorrect, since the spatial ZA-prefixed verbs denote a progress of a moving object along the path **within the goal location**. This follows from the incompatibility of spatial ZA-prefixed verbs with source locations, non-adjacent to the goal areas, as illustrated in (77)-(78). A possible explanation of this incompatibility is that the path of a motion event, denoted by a spatial ZA-prefixed verb, begins at the outer boundary of the goal location. Thus, any source location, which is not immediately adjacent to the goal area, is excluded from the path of a spatial ZA-prefixed accomplishment.

To account for the restrictions on the goal and source arguments, one would have to argue, then, that the prefix ZA- conducts two separate semantic operations: 1) carves a subpath of a motion event, which lies within the goal location, associated with the given event; 2) establishes homomorphous relations between that subpath and a corresponding motion subevent. The situation with the spatial accomplishments is more complicated, though. The spatial prefix ZA- not only requires a path of a motion event to be within a goal area, but also restricts the extent of motion along the given path to a spatial interval, ranging between some default point of entry to the end-point of a given location. Thus, an event of walking into the forest, denoted by zajti PRF v les (to walk into the forest), means in the out-of-blue context that the extent of one's walking into the forest can range between a minimal incursion into the forest and reaching the far end of it. In Krifka's (1998) theory of accomplishments, then, the prefix ZA- would have to define an interval on the path at which the given event holds, in addition to the two semantic operations above. Such account is undesirable, since it associates a single morphological element with three separate semantic operations. In the following subsections, I will argue that these three operations can be reduced to a single one in a different theoretical account of accomplishment events, such as the one advocated in Rothstein 2004.
3.5.1 Rothstein's (2004) Theory of Accomplishments

As mentioned in chapter I, many theories of lexical aspect analyze accomplishments as complex events that consist of an activity event and an event of change of state, also known as BECOME event (Dowty 1979, Pustejovsky 1995, Rappaport-Hovav and Levin 1998, Rothstein 2004). A crucial part of the accomplishment analysis is, then, the link between the activity and BECOME parts of an accomplishment event. Dowty 1979 proposes a causal relation between the two subevents – an activity event causes a BECOME event to occur. For instance, an accomplishment event of John closing the door is represented as follows:
[[DO (John, [close John]) CAUSE [BECOME [closed (door)]]].

On the other hand, Rothstein 2004 argues against the causal relation between subevents of an accomplishment for two reasons. First, the causal relation implies that activity event is a cause and BECOME event of change is its consequence. In such situation, one expects an activity to precede a corresponding BECOME event. It does not have to be the case, however. For instance, John built the house indicates that the process of building and the event of housing coming into existence (i.e., the BECOME BUILT subevent) developed simultaneously. Second, the activity event does not have to be a reason for the corresponding BECOME subevent to occur. Rothstein 2004 provides examples of resultative accomplishments, such as The people of Amsterdam danced the Canadians to Dam square and Every night the neighbor's dog barks me asleep. The dancing of the people of Amsterdam does not necessarily cause the Canadians to get to Dam square and barking of the dog does not make a speaker fall asleep. Instead, these activities just temporally coincide with the corresponding events of change. Thus, the relation between activity and BECOME subevents of an accomplishment event does not have to be a causal one, though there might be a pragmatic implication that there is a certain element of causality in bringing about an event of change. If so, what type of relation links an activity subevent of accomplishment to an event of change?

Rothstein 2004 argues that a singular accomplishment event consists of the sum of two events – an incremental temporally extended event of change (BECOME) and an activity event – that are linked together via the incremental relation. In contrast with the punctual event of change in achievements, the incremental BECOME event in accomplishments is internally complex, consisting of a series of stages, defined in (81).
(81) $e'$ is a stage of $e$ iff:
(i) $e' \subseteq e$; i.e. $e'$ is a temporal part of $e$
(ii) $e$ and $e'$ have the same temporal starting point;
(iii) $e$ is a development of $e'$; i.e. $e$ and $e'$ are qualitatively distinguishable, they have different properties.

The division of the BECOME event into relevant stages is contextually determined by the incremental chain $C(e_2)$ in (82).

(82) **Incremental Chain**

Let $e$ be a BECOME event:

An incremental chain $C(e)$ is a set of stages of $e$ such that:
(i) the smallest event in $C(e)$ is the initial bound of $e$
(ii) for every $e_1, e_2$ in $C(e)$, $e_1 > e_2$ or $e_2 < e_1$ or $e_1 = e_2$
(iii) $e \in C(e)$

In such way, an incremental chain divides a BECOME event into a set of temporally ordered stages, which start with its initial bound and develop into a complete event. This division is represented graphically in (83).

(83) **An incremental chain $C(e)$**

The incremental BECOME event sets a blueprint for the progress of an activity event by imposing an ordered developmental structure on activity. A contextually available function $\mu$ maps the pragmatically determined stages of the incremental event into that part of activity event $e_1$ that has the same running time as the incremental event. In such way, an incremental event of change monitors the progress of an activity component and, consequently, the development of a whole...
accomplishment event. The linking of BECOME and activity events is defined as incremental relations.

(84) **Incremental relations:**

Let $e_1$ be an activity, $e_2$ be a BECOME event, and $C(e_2)$ be an incremental chain defined on $e_2$.

The incremental relation maps the relevant incremental parts of the BECOME event $e_2$ (as obtained by the incremental chain $C(e_2)$), onto those parts of $e_1$, the activity event, that have the same running time. While the incremental chain $C(e_2)$ imposes an incremental structure on the BECOME event, the incremental relation imposes this structure onto the event as a whole, as illustrated in (85), where $e_1$ is the activity event and $e_2$ is the BECOME event, which imposes its temporal trace on the structure of the event as a whole.

(85) **Accomplishment event structure:**
The template for accomplishment verbs is provided in (86):

(86) **Accomplishment Template**

\[ \lambda x. \lambda y. P_e. \exists e_1, e_2[ e = S(e_1 \cup e_2) \land P_{ACTIVITY}(e_1) \land \text{Agent}(e_1) = x \land \text{Th}(e_1) = y \land \text{BECOME-P-ed}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] \]

According to the accomplishment template in (86), a lexical accomplishment verb denotes a complex event with an activity subevent \( e_1 \) and a BECOME subevent \( e_2 \), linked via the incremental relation, so that an activity event and a BECOME event share a theme argument. Thus, the theme argument, involved in an activity event, is at the same time affected by a change of state event, associated with an activity part. For instance, the theme argument *house* in an accomplishment event *build the house* is a participant in a building process, which BECOMES BUILT in the course of an incremental event of change. Thus, an accomplishment event *Jack built the house* has the following representation in (87).

(87) \[ \exists e \exists e_1, e_2[ e = S(e_1 \cup e_2) \land \text{BUILD}(e_1) \land \text{Agent}(e_1) = \text{Ivan} \land \text{Th}(e_1) = \text{the house} \land \text{BECOME BUILT}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] \]

there was a single accomplishment event of building with Ivan as its agent and the house as its theme, which is the sum of two subevents: an activity of building and an event of becoming built, which are incrementally related, and the theme of an activity event is the argument of BECOME BUILT event.

It is important to mention that a concept of *change* that a theme argument undergoes in the course of an accomplishment event allows broad interpretation. Such change does not necessarily have to be a physical one, although it is definitely the case with *creation* and *consumption* verbs, such as *build* and *eat*. Accomplishments can also denote changes with respect to some property of a theme argument, which does not necessarily result in a visible physical change in the entity, denoted by a theme. For instance, the theme *door* in an accomplishment event *unlock the door*, undergoes a change in its status from having a property *locked* into having a property *unlocked*. A different kind of change occurs in *read the book* in which the various
parts of the book become gradually accessible in the course of the reading event, though the book itself is not physically affected (unless a reader is careless and spoils the book with, say, his dirty fingers, which is exactly the type of change, denoted by the ZA-prefixed verb začítar\textsuperscript{PRF} [to damage by reading], which will be discussed in the next chapter). Another type of change is a change in location of a theme, as in \textit{close the window}, in which the affectedness of a theme is evaluated in terms of its spatial position, rather than some material transformation. In such a way, Rothstein 2004 theory of accomplishments provides a platform for a uniform analysis of lexical accomplishment verbs in English by allowing a construction of various kinds of contextually determined incremental events of change that are mapped onto corresponding activity events by a contextually salient function $\mu$.

The relevance of Rothstein 2004 theory of accomplishments for Russian has been demonstrated in Braginsky \& Rothstein 2008 on the basis of evidence with incremental modifiers. Braginsky \& Rothstein 2008 argues that the incremental modification operators, such as \textit{gradually} and \textit{X-by-X}, modify the structure of incremental subevents of change in accomplishment events. Thus, these operators are only applicable to the accomplishment events (since these are the only events that have an incremental stage structure) and, hence, allow distinguishing between imperfective activities and accomplishments, on the one hand, and perfective accomplishments and perfective delimited activities, on the other. For instance, the incremental modifiers \textit{gradually} in (88) and \textit{page-by-page} in (89) draw a line between an imperfective accomplishment čítat\textsuperscript{IMP} (to read) and an imperfective activity guljat\textsuperscript{IMP} (to walk), as well as between their perfective counterparts pročítat\textsuperscript{PRF} and poguljat\textsuperscript{PRF}, respectively (adopted from Braginsky \& Rothstein 2008).

(88) a. Ivan postepenno čítal\textsuperscript{IMP} knigu.
    Ivan gradually read book
    'Ivan gradually read a/the book.'

b. Ivan postepenno pročítal\textsuperscript{PRF} knigu.
    Ivan gradually read book
    'Ivan gradually read the book.'

c. * Ivan postepenno guljal\textsuperscript{IMP}.
    Ivan gradually walked
d. * Ivan postepeno poguljali\textsuperscript{PRF}.
   Ivan gradually walked for a while

(89) a. Ivan čital\textsuperscript{IMP} knigu stranica za stranicej.
   Ivan read book page by page
   'Ivan read a / the book page-by-page.'

b. Ivan pročital\textsuperscript{PRF} knigu stranica za stranicej.
   Ivan read book page by page
   'Ivan read the book page-by-page.'

c. * Ivan guljal\textsuperscript{IMPRF} šag za šagom.
   Ivan walked step by step

d. * Ivan poguljal\textsuperscript{PRF} šag za šagom.
   Ivan walked for a while step by step

One advantage of Rothstein's (2004) analysis of accomplishments has to do with the fact that it provides the type-shift operations from activity into accomplishment events and discusses the difference between the derived accomplishments, obtained by such type-shift operations, and the inherent lexical accomplishments, like \textit{build} in (87). Since it was assumed above that \textit{ZA} is an aspectual operator deriving activities into accomplishments, Rothstein's (2004) theory shall prove helpful in devising a formal semantic analysis of the particular type-shift operation, imposed by \textit{ZA}.

Another advantage of Rothstein's approach, which is evident in the analysis of accomplishments in Mehlig 2007 and Tatevosov & Ivanov 2007, is that the structure of accomplishments she suggests provides a natural set of parameters which can be used to classify accomplishments into subclasses. I shall investigate this in detail in the sections to come.

To conclude, I find Rothstein's 2004 theory of accomplishments most suitable for the purposes of my research - analyzing the semantics of the verbal prefix \textit{ZA}.

Having said that, I do not exclude a possibility that the semantic analysis of \textit{ZA}, proposed in this work, can be formulated in the framework of a different event-based theory of accomplishments, granted that such theory has the same explanatory power and makes the same predictions as the aforementioned Rothstein's theory.
3.5.2 Spatial ZA-Prefixed Verbs as Locative Accomplishments in Russian

Despite the appeal of a uniform analysis of accomplishments in Rothstein 2004, the crucial question is whether it can account for all the various types of accomplishment verbs in its present form. Rappaport-Hovav 2006 voices criticism of Rothstein's (2004) theory, arguing that accomplishment verbs in English are semantically heterogeneous and do not fit into a single template, such as the one proposed in (86). Rappaport-Hovav 2006 argues that some accomplishments do not have a BECOME subevent in their denotations, while others do not require that BECOME and activity subevents share the same running time. For instance, such verbs as *throw* in *John threw the ball into the basket*, may denote a complex accomplishment event in which the punctual event of change precedes a durative activity of traversing the bounded path, while the verbs like *vote* in *New Yorkers voted Hillary Clinton into the office*, denote accomplishments events in which a durative activity part is followed by the resultant punctual event of change. According to the given author, such examples provide evidence for the existence of various subtypes of accomplishment events, which cannot be captured by a single analysis. In light of the Rappoport-Hovav 2006 arguments, an obvious question to ask is whether Rothstein's (2004) theory of accomplishments can be extended to account for additional subtypes of accomplishment events (with respect to the Russian data).

A recent study by S. Tatevosov and M. Ivanov provides a positive answer to this question. Tatevosov & Ivanov 2007 discusses some lexical differences between the accomplishment verbs *otkryt'*PRF (to open) and *zapolnit'*PRF (to fill in) in Russian. As observed in Mehlig 2007, the secondary imperfective forms of these verbs, *otkryvat'*IMP (to open) and *zapolnjat'*IMP (to fill in), perfectivized with the delimitative prefix *PO-* , have different entailment properties, as illustrated in (90).

(90) a. Ivan pooktyryval*PRF dver' pja't minut (no ničego ne vyšlo).
   Ivan PO-opened door five minutes but nothing not got out
   'Ivan tried to open the door for five minutes (but nothing happened).'

b. Ivan pozapolnjal*PRF anketu pja't minut (* no ne zapolnil ni stročki).
   Ivan PO-filled in form five minutes but not filled in no line
   'Ivan filled the form in for five minutes (* but hasn't filled a single line).'

\(\)
In (90a), *pootkryvat’* PRF *dver’* (to be opening the door for a while) does not entail that there was any change in the position of the door, while *pozapolnjat’* PRF *anketu* (to be filling the form in for a while) in (90b) entails that some part of the form was filled in.

Tatevosov & Ivanov 2007 explains the data in (90) by arguing that *otkryt’* PRF (to open) and *zapolnit’* PRF (to fill in) denote two different types of accomplishments. The former gives rise to a *failed-attempt* reading in (90a), while the latter acquires a *partial-success* interpretation in (90b). Tatevosov & Ivanov 2007 analyzes the *zapolnit’* PRF-type verbs as standard accomplishment events in Rothstein's sense, but proposes an extension of Rothstein's (2004) theory to account for the *otkryt’* PRF-type accomplishments. Without getting into the technical details of their account, it suffices to say that Tatevosov & Ivanov 2007 changes a temporal relation between the two subevents of an accomplishment event by substituting the incremental relation, as it is defined in Rothstein 2004, by the *mapping-to-a-minimal-final-part* relation, which maps a punctual event of change onto the final moment of the corresponding activity subevent. In such case, *pootkryvat’* PRF *dver’* (to be opening the door for a while) describes a partial temporal stage of *opening the door* event, thus, excluding an actual event of change in the position of the door from its denotation.

Following Tatevosov & Ivanov 2007, I assume that Rothstein's (2004) theory of accomplishments can also be extended to account for the spatial ZA-prefixed accomplishment verbs in Russian. In particular, I shall propose two modifications of the accomplishment template in (86). The first modification concerns an incremental argument of the BECOME subevent of change, while the second modification involves the BECOME event itself.

As follows from (86), a standard accomplishment event takes a theme argument of a corresponding activity event as the argument of its incremental event of change (i.e., BECOME). For instance, the accomplishment verb *read* in *John read Lord of the Rings*, denotes an incremental event of change in which parts of the *Lord of the Rings* book gradually become accessible to *John* in the course of the reading activity. I suggest that, in contrast with the normative accomplishments, a spatial ZA-prefixed verb belongs to a different subtype of accomplishments, which denotes an event of change, *affecting a location denoted by a goal argument of an activity event, rather than its theme*. In other words, the BECOME subevent of a spatial ZA-prefixed verb selects the GOAL argument of the corresponding activity as its incremental argument. I assume that the incremental relation between the BECOME and the activity
subevents in the spatial $ZA$-prefixed accomplishments is the same as in the standard ones. Thus, each stage of the motion process, described by the activity subevent, corresponds to a stage of further incursion into the corresponding goal location. For instance, the spatial accomplishment $\textit{zajdti}^{\text{PRF}}$ (to walk into) in $\textit{Ivan zašel}^{\text{PRF}} \textit{v les}$ (Ivan walked into the forest), denotes an incremental event of change in which parts of the $\textit{forest}$ location gradually become accessible to $\textit{Ivan}$ in the course of the walking process. I shall call the spatial $ZA$-prefixed accomplishment events locative accomplishments to distinguish between them and the classic lexical accomplishments in (86) that take theme as an argument of the BECOME subevent.

Replacing the theme argument of an incremental event of change with the goal, however, does not account for the semantic properties of the locative $ZA$-prefixed accomplishments, discussed above. An accomplishment event of $\textit{zajdti}^{\text{PRF}} \textit{v les}$ (to walk into the forest) would simply be interpreted as a sum of a walking activity and an event of change BECOME WALKED, which takes a $\textit{forest}$ location as its incremental argument. BECOME WALKED is quite meaningless on its own, though, since it does not convey any lexical information on the nature of change, happening to the forest as a result of a walking activity. This brings us to a major distinction between standard and locative accomplishments, which has to do with the fact that the former are lexical accomplishments, while the latter are derived ones, in Rothstein's (2004) sense. This distinction concerns the nature of BECOME event in both types of accomplishments. As argued in Rothstein 2004, a lexical content of BECOME event in the standard lexical accomplishment is constructed without additional contextual support, since a speaker of a language possesses an extralinguistic real-world knowledge about a nature of a change, described by a given accomplishment. For example, the language user intuitively knows that the stages of an event of reading a book consist of reading one page after another, one chapter after another, or that the stages of an event of building a house include laying a foundation and then adding floor after floor in a certain order. Rothstein 2004 claims that derived accomplishments, on the other hand, require much more contextual support to fill in the lexical content of their BECOME events, so that a language user would be able to construct the incremental chain for such BECOME event on the basis of this information. Rothstein 2004 discusses cases of derived resultative accomplishments in
English in which lexical information about an event of change is supplied by the
resultative phrase, as illustrated in (91).

(91) a. John (*gradually) hammered the metal for an hour / * in an hour.
    b. John gradually hammered the metal flat in an hour / * for an hour.

Initially, *hammer* is a transitive activity verb, as indicated by the temporal and
incremental diagnostic tests in (90a). Adding the measure expression *flat* to the
*hammering* activity in (90b), however, shifts *hammer* into an accomplishment verb.
*Flat* provides additional contextual information that helps the reader construct an
incremental chain for the derived BECOME HAMMERED event, which presumably
includes stages, denoting different degrees of flatness of the metal.

I shall argue that, similarly to the resultative constructions, the prefix ZA- provides
a lexical content to the locative ZA-prefixed accomplishments. It does so by
introducing a completely new incremental event of change, call it BECOME AT,
which takes a goal of a motion activity event as its incremental argument. The
BECOME AT event comes with a predetermined incremental structure, which is
discussed in the following subsection 3.5.3. Thus, based on the above discussion, I
propose the following template for the locative ZA-prefixed accomplishments.

(92) Locative Accomplishment Template

\[
\lambda z \lambda x_1 \ldots x_N \lambda P \lambda e \exists e_1, e_2 \left[ e = E(e_1 \cup e_2) \wedge P_{\text{ACT.}}(e_1) \wedge \theta_{1 \ldots N}(e_1) = x_1 \ldots x_N \wedge \text{Goal}(e_1) = z \wedge \text{BECOME AT}(e_2) \wedge \text{Arg}(e_2) = \text{Goal}(e_1) \wedge \text{INCR}(e_1, e_2, C(e_2)) \right]
\]

In such a way, a derived locative accomplishment verb denotes a complex event
with an activity subevent \(e_1\) and a BECOME AT subevent \(e_2\), linked via the
incremental relation, so that an activity event and a BECOME AT event share a goal
argument. \(\lambda x_1 \ldots x_N\) stands for thematic arguments, other than goal, that may be present
in the thematic argument structure of a verb. Thus, the locative accomplishments
*zajdti* (to walk into) and *zabit*’ (to hammer into) have the following representations in
(93)-(94).
(93) Ivan zašel**PRF** v les

Ivan ZA-walked in forest
'Ivan walked into the forest'.

$$\exists e \exists e_1, e_2[ e = S(e_1 \cup e_2) \land \text{WALK}(e_1) \land \text{Agent}(e_1) = \text{Ivan} \land \text{Goal}(e_1) = z$$
$$\land \text{BECOME AT}(e_2) \land \text{Arg}(e_2) = \text{Goal}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))]$$

there was an accomplishment event with Ivan as its agent and forest as its goal, which consists of a sum of the incrementally related subevents: the walking activity and the incremental event of change in space, BECOME AT, and a goal of the walking event is the argument of the BECOME AT event.

(94) Ivan zabil**PRF** gvozd' v stenu.

Ivan ZA-hit nail in wall
'Ivan hammered the nail into the wall.'

$$\exists e \exists e_1, e_2[ e = S(e_1 \cup e_2) \land \text{HIT}(e_1) \land \text{Agent}(e_1) = \text{Ivan} \land \text{Theme}(e_1) = \text{the nail}$$
$$\land \text{Goal}(e_1) = z \land \text{BECOME AT}(e_2) \land \text{Arg}(e_2) = \text{Goal}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))]$$

there was an accomplishment event with Ivan as its agent and nail as its theme and wall as its goal, which consists of a sum of the incrementally related subevents: the hitting activity and the incremental event of change in space, BECOME AT, and a goal of a hitting event is the argument of the BECOME AT event.

While a locative accomplishment analysis in (92) improves our understanding of what a spatial ZA-prefixed verb stands for, it still does not account for some observations, made in section 3.4 and mentioned at the beginning of 3.5. For instance, (92) does not explain why there is a correlation between the size of a goal area and a temporal duration of a locative accomplishment event, or why the moving object has to end up (well) within the goal area at the culmination of the locative event. To answer these questions, one needs to take a closer look on the BECOME AT element and its semantic properties.
3.5.3 The Internal Structure of BECOME AT

As observed in 3.4.2 and mentioned above, there is a strong correlation between a temporal duration of a spatial ZA-prefixed accomplishment and the size of its goal location. Spatial ZA-prefixed accomplishments with small goal areas have minimal temporal duration, as in (95).

(95) a. Ivan zašel (*daleko) v dver' za paru sekund / (*za čas).
    Ivan ZA-walked far in door in few seconds in hour
    'Ivan walked into the door in a few seconds.'

b. Ivan zašel daleko v les ?za paru sekund / za čas.
    Ivan ZA-walked far in forest in few seconds in hour
    'Ivan walked far into the forest in an hour.'

The walking into the door event, denoted by zajdti (to walk into) in (95a) is restricted to a temporally short duration, while the walking into the forest event is compatible with far into measure modifier and is more natural with an extended temporal duration (in an hour) than with a minimal temporal interval (in a few seconds). I suggested earlier that such correlation indicates that the BECOME AT event of change imposes homomorphous relations between a motion event and its goal location, in the sense of Krifka 1998. It seems that the spatial ZA-prefixed verbs, such as the ones in (95), are restricted to denoting a monotonic incursion of their moving participants (agents or holistic themes) into the goal location. Since the motion event of walking in (95a) is barred from denoting backtracking or on the spot movements, it is unlikely that it takes Ivan an hour to get into such a small location as the door. On the other hand, in the case of a relatively big location area, such as forest in (95b), a longer duration of the walking event by Ivan would correspond to a larger incursion into the forest. Thus, the BECOME AT event seems to impose the monotonic (or monotonically increasing) change condition on the manner of change of its goal argument. It is important to mention, though, that in some contexts, the correlation between the size of a goal area and a temporal duration of a locative accomplishment event does not seem to hold. Let's say, Ivan wears magic boots that make him pass seven miles with each step (what is called in the Russian fairy tales semimi'nye sapogi – seven-mile boots). In such context, he can venture far into the forest in a few
seconds. Or, if Ivan is a handicapped person (or a turtle), he can walk for a long time, but cover only a small distance. The former case is described in (96a); the latter – in (96b).

(96) a. Ivan zašel<sub>PRF</sub> v les na sem’ mil’ za paru secund.  
Ivan ZA-walked in forest on seven miles in few seconds  
'Ivan walked seven miles into the forest in a few seconds.' 

b. Ivan zašel<sub>PRF</sub> v les na paru metrov za čas.  
Ivan ZA-walked in forest on pair of meters in hour 
'Ivan walked few meters into the forest in an hour.'

Another phenomenon, associated with the locative accomplishments, concerns the restrictions on their goal and source arguments. First, the spatial ZA-prefixed verbs require their moving participants to end up within the boundaries of a goal location at the culmination of the motion event. To put it differently, the goal location contains the path of the moving participant and does not let it transgress beyond its inner boundaries. This restriction on the goal argument allowed distinguishing the spatial ZA-prefixed verbs from the inchoative ZA-prefixed verbs, derived from the indeterminate motion verbs in 3.2 (examples 14-15). It is obvious that the indeterminate motion verbs do not apply such restriction on their goal arguments, which makes them unacceptable with the spatial ZA- even when the goal argument is explicit (I will discuss the issue of indeterminate motion verbs in more detail in chapters V and VI). In such case, the goal argument of the BECOME AT event of change has to satisfy the following restrictions in (97).

(97) **Entailments for a Goal Argument of Spatial ZA-Prefixed Verbs (GoalZA<sup>L</sup>)**

i. stationary (relative to a movement of agent/instrument/holistic theme) 
ii. exists independently of a motion event 
iii. contains a movement of another participant in the event, providing the end-point on its path. 
iv. accessible inner space.
The last requirement means that the goal area must allow a gradual incursion into its inner space. In such a way, the goal argument of a locative accomplishment cannot denote an area, which does not allow an incursion into its inner perimeter.

The BECOME AT event of change imposes additional requirement on its goal argument. As noted in Paillard 1995, the spatial meaning of ZA- not only asserts that the moving participant of an event went into some location, but also requires it to cover a (contextually) adequate distance within that area. This requirement is clearly manifested with large-sized goal locations, such as forest. Thus, Paillard 1995 notes that it can be said Ivan walked far into the forest, but not Ivan walked close into the forest, as illustrated in (98).

(98) Ivan zašel\textsuperscript{PRF} daleko (*blizko) / (??čut'-čut') v les.
  Ivan ZA-walked far close a little bit in forest
  'Ivan walked far into the forest.'

In such a case, however, the BECOME AT event not only establishes that the goal location was traversed (by the moving object) in the course of a motion event, but also measures the extent of incursion and delimits it to be above some contextual or conventional default, but below (or equal to) the final boundary of the goal area (since the moving entity stays inside the goal area at the culmination of a given event). Thus, zajti\textsuperscript{PRF} z les (to walk into the forest) is to be interpreted as to walk into the forest farther than some default point, but not beyond the final inner boundary of the forest. The prefix ZA- acts not only as the aspectual shift operator, but also as a measure function on the extent of incursion into the goal area (and, thus, on the extent of the entire motion event), as predicted by Filip 2000 and Filip & Rothstein 2006 theories of prefixation.

A different restriction is imposed by the BECOME AT event on a source argument of the ZA-prefixed verb. As shown in 3.4.2, a source argument in locative accomplishments can only refer to a point of space, which is spatially adjacent to the goal area. The corresponding examples (77)-(78) are repeated in (99)-(100).
Intuitively, the *spatial-adjacency-to-the-goal-area* restriction on the source arguments of locative accomplishments is more or less clear. According to the definition of a locative accomplishment event in (92), the BECOME AT event of change takes a goal of a motion activity subevent as its incremental argument and measures the affectedness of the goal in the course of the motion process. Since the stages of BECOME AT are temporally parallel to the stages of activity subevent (due to the properties of an incremental relation in Rothstein 2004), a temporal duration of an activity subevent is restricted to the temporal interval in which the goal area is traversed through. In other words, a motion process in a locative accomplishment cannot take place outside the goal area, because the BECOME AT event picks out only those parts of activity that affect the goal; namely, a motion inside the goal area. If it is the case, then, we need to explain why source arguments are not excluded at all from occurring with locative accomplishments. After all, examples (99)-(100) show that the source arguments are still possible with locative accomplishments, even if they denote locations with a spatial adjacency with the goal area.

A locative *ZA*-prefixed accomplishment denotes an event of moving into some location. Pragmatically, it means that the starting position of a moving object in a locative accomplishment event is on the outer edge of the goal area, or just outside it. Thus, the source of a locative accomplishment event can only be part of an event if it
is located in the immediate vicinity to the given location. I assume, thus, that the first stage of the incremental chain of BECOME AT includes a spatial location, adjacent to the goal location. Thus, Ivan can walk into the forest from the road, which is spatially adjacent to the forest, but cannot walk into the forest from the center of the city, because the latter location is not adjacent to the forest area and, consequently, is not a part of the incremental chain of the BECOME AT event. Note, however, that the expressions, denoting a source of the motion, can be used as nominal modifiers of the moving object, rather than modifiers of the locative accomplishment verb. Consider the following examples:

(101) a. Korabl' iz Odessy zapyl普 v Haiфskij port.
   Ship from Odessa ZA-swam in Haifa port
   'The ship from Odessa sailed into the Haifa port.'

b. Korabl' iz Odessy priply普 v Haiфskij port.
   Ship from Odessa PRI-swam in Haifa port
   'The ship from Odessa sailed to the Haifa port.'

c. * Korabl' zapyl普 v Haiфskij port iz Odessy.
   Ship ZA-swam in Haifa port from Odessa
   'The ship sailed into the Haifa port from Odessa.'

d. Korabl' priply普 v Haiфskij port iz Odessy.
   Ship PRI-swam in Haifa port from Odessa
   'The ship sailed to the Haifa part from Odessa.'

The example (101a) with the ZA-prefixed verb zapyl普 (to swim, sail into) is acceptable with the source modifier from Odessa only under the reading that the source phrase is used as a nominal modifier, so that being from Odessa is a property of the given ship. In contrast to (101a), (101b) with the PRI-prefixed verb priply普 (to sail to) is ambiguous between two readings: a) the ship has a property of being from Odessa; b) the ship sailed from Odessa to Haifa. When the source phrase occupies the post-verbal position, the ZA-prefixed verb in (101c) is disallowed, while the PRI-prefixed one in (101d) is still acceptable.

Now let me return to the issue of an incremental chain of the BECOME AT event, which plays an important role in understanding the semantics of the spatial ZA-.

As mentioned above, an incremental chain of the lexical BECOME subevent of change in
standard accomplishments is constructed on the basis of two factors: 1) one's extra-linguistic knowledge of the world; 2) contextual factors. Consider the lexical accomplishment verb build. In the case of a building the house event, one intuitively knows that the initial stage of building the house consists of laying its foundation, the final stage is putting the roof, and the middle stages include building the floors, one atop another. These stages come in a certain order, intuitively known to the language user (e.g., one does not start building the roof before laying the foundation or assembling the tenth floor before the first). The contextual factors interact with this general extra-linguistic knowledge by making a situation clearer. E.g., an event of building a 100-floor skyscraper in New York presumably has a much more fine-grained incremental chain structure than an event of building two-floor house in Tel Aviv. However, in the case of an artificial BECOME event, such as BECOME AT, the language user does not possess an intuitive knowledge of the stages, included in the incremental chain of such event of change, and their inner ordering. Such information must, then, be encoded by the BECOME AT event itself as a part of its internal semantics.

I assume that BECOME AT has a 'built-in' closed measure scale that governs the construction of an incremental chain of the given event by imposing a pre-determined ordering on the parts of an incremental argument. The concept of a measure scale is adopted from Kennedy 1997 and Hay, Kennedy & Levin 1999. I assume that degrees are two-place relations of the type \( <n, m> \), so that \( n \) is a member of a set of real numbers \( N \), and \( m \) is a member of a set of measure units \( M \). So, a degree of 5 kilometers on the scale of distance is \( <5, \text{km}> \). A scale itself consists of a set of degrees from a particular dimension, arranged in a total strict order with respect to each other.

(102) \( S_A \) is a scale along a dimension \( \text{DIM}_A \), if \( S_A \) is a set of degrees \( \text{DEG}_A \), such that:

a. \( \forall d_1 \exists d_2 \in |\text{DEG}_A| (d_1 < d_2 \lor d_2 < d_1 \lor d_1 = d_2) \)

For every two degrees which are in the set of degrees \( \text{DEG}_A \), either \( d_1 \) preceeds \( d_2 \); or \( d_2 \) preceeds \( d_1 \); or \( d_1 \) is equal to \( d_2 \).

b. \( \exists d \exists d' \forall (d \in |\text{DEG}_A| \land (d < d' \lor d' < d)) \rightarrow d' \in |\text{DEG}_A| \)

if a degree \( d \) is in the set of degrees \( \text{DEG}_A \) and stands in a partial order relation with \( d' \), then \( d' \) is also in the set of degrees \( \text{DEG}_A \).
The measure scale of BECOME AT tracks the extent of incursion into a goal area by measuring a distance, passed by a moving object, in some contextually-determined measure units of space (e.g., millimeters for door, miles/km for forest). The initial point on the measure scale of BECOME AT corresponds to a null degree of change in an affected argument, or simply zero. In the case of a goal argument, the zero value on the given measure scale is mapped to an outer boundary of a goal location, which may correspond to some source location, maximally adjacent to the goal area. This property of a measure scale explains the spatial-adjacency-to-the-goal-area restriction on the source arguments, discussed above. The given measure scale is a closed one, meaning that it includes some maximal point, or degree of change. This degree is contextually determined and is mapped to the final inner boundary of the goal location. In such case, the goal location needs to be closed as well, containing the motion event within its boundaries, which is exactly the case for the spatial ZA-prefixed verbs.

Moreover, the measure scale of BECOME AT includes a marked interval on the scale, which ranges from some default value to the maximal value on the scale. The default value corresponds to what counts as a normative incursion into a goal location, and is recovered from the properties of a given location and the context. I shall call this marked interval on the scale an interval of validation, since it determines the extent of incursion at which a given locative accomplishment is validated as true. For instance, if Ivan walked into the forest, but a degree of his incursion into the forest did not amount to the contextually defined minimum, the assertion that there was an event of ZA-walking into the forest is considered false in such context, since Ivan failed to satisfy the interval of validation, marked on the incremental chain of the BECOME AT event. A measure scale of the BECOME AT event, thus, determines the properties of its incremental chain by: a) homomorphously mapping between degrees on the scale and the proper parts of the goal area, denoted by the goal argument of BECOME AT; b) delimiting an extent of incursion into the goal area by introducing a marked interval of validation within a measure scale. This situation is graphically represented in (103).
A Spatial Built-In Scale of the BECOME AT Event of Change

The measure scale in (103) provides a general ordering criterion, which enables constructing an incremental chain of stages for a BECOME AT event. Naturally, particular details of that chain, such as a default incursion value, a maximal incursion value and the appropriate measure units, are recovered on the basis of the properties of a relevant goal argument and contextual factors. E.g., the interval of validation for a small location, such as door, is an extremely short one, measured in millimeters.

Now, let's suppose that a given location is forest as in the previously mentioned example Ivan zašelPRF v les (Ivan walked into the forest). Let's say that in this context a starting point of entering into the forest is its outskirts, the default entry point is ten meters into the forest; and the maximal value is the far end of the forest – say 10,000 meters into the forest. So the interval of validation for zabežatPRF v les (to run into the forest) amounts to the range of values between ten and 10,000 meters into the forest (a process of selecting one of these values as the most appropriate degree of change is related to the semantics of perfectivization, discussed in details in chapter VII). Then, the relevant incremental chain for the BECOME AT subevent of the given walking into the forest event can be schematically represented in (104).
The parts of the given chain are, then, homomorphously mapped onto the
temporally corresponding parts of a motion activity of walk, producing a locative
accomplishment event zajii\textsuperscript{PREF} v les (to walk [at least 10 meters] into the forest).

Having covered the semantics of the locative ZA-prefixed accomplishments, I
shall now provide an account for the mechanism of their derivation, which is what I
defined as the spatial meaning of the prefix ZA- at the beginning of this chapter.

3.5.4 The Spatial Prefix ZA- as an Aspectual Type-Shift Operator

I define the prefix ZA- is an aspectual type-shift operator from activity into
locative accomplishment verbs. I assume that intransitive activity verbs with indirect
goal objects are of the type \langle l,\langle d,\langle e, t \rangle \rangle \rangle and transitive activities with indirect goal
objects are of the type \langle l,\langle d,\langle d,\langle e, t \rangle \rangle \rangle. The symbol \textit{d} stands for individuals, \textit{e} – for
events and \textit{t} – for truth values. I introduce another type of entities, which are \textit{locations}
(cf. the discussion of locations in Asher & Sablayrolles 1995). Locations are derived
from individual-type entities by the spatial prepositions, such as \textit{v}, \textit{na}, \textit{pod} and \textit{za}-.
These prepositions are functions from individuals to locations of the type \langle d, l \rangle. In
such a way, an individual, such as forest, is shifted by a spatial preposition into a
location of type \langle l \rangle. This shift is necessary, since I assume that the BECOME AT
event of change differentiates between locations and individuals and takes only
location-type entities as its argument. I assume further that the prefix ZA- can take
both transitive and intransitive activities of the type \langle l,\langle d_n,\langle e, t \rangle \rangle \rangle (where the
subscript \textit{n} stands for numbers of individuals) and shift them into corresponding
transitive/intransitive locative accomplishments of the type \langle l,\langle d_n,\langle e, t \rangle \rangle \rangle. The
locative accomplishment shift operation is defined in (105) below:

\begin{equation}
\text{(105) Locative Accomplishment Shift for Activities}
\end{equation}

\begin{align*}
\text{ZA-SHIFT}_{\text{LOCATIVE}}( \lambda z \lambda x_1...x_N \lambda P(P_{ACT.}(e_1) \land \theta_{1...N}(e_1) = x_1...x_N \land \text{Goal}(e) = z))

&= \lambda z \lambda x_1...x_N \lambda P\forall e, \exists e_1, e_2[ e = \tilde{S}(e_1 \cup e_2) \land P_{ACT.}(e_1) \land \theta_{1...N}(e_1) = x_1...x_N \land \\
&\quad \land \text{Goal}(e_1) = z \land \text{BECOME AT}(e_2) \land \text{Arg}(e_2) = \text{Goal}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] 
\end{align*}

The spatial prefix ZA- takes a transitive/intransitive activity verb, which has a goal
argument in its lexical argument structure, and turns it into a locative ZA-prefixed
accomplishment by imposing the BECOME AT subevent of change on a given activity\textsuperscript{22}.

The ZA-shift rule in (105) defines an operation of deriving locative ZA-prefixed accomplishments from activity verbs. The question is whether the spatial prefix ZA- can apply to other aspectual types of verbs. There seems to be one example with the state verb \textit{pomnit}'IMP (to remember), which is shifted by ZA- into what seems to be a locative accomplishment verb \textit{zapomnit}'PRF (to memorize) [i.e., \textit{Za gody učeby Ivan postepенно zapomnil vse formuly v knige Susan} – In his student years, Ivan gradually memorized all the formulae in Susan's book]. Considering that the meaning of \textit{memorize} can be metaphorically viewed as a movement of information into the memory by the means of remembering it, \textit{zapomnit}'PRF may be the case of deriving a locative accomplishment out of a state verb. Thus, I assume that the ZA-shift rule in (105) can be extended to state verbs as well.

A more problematic mismatch between (105) and some input verbs arises in the case of the imperfective accomplishment verbs, which acquire a spatial meaning of ZA-, as in the case of the previously mentioned examples with \textit{pisat}'IMP (to write) and \textit{risovat}'IMP (to paint) that are shifted into the locative accomplishments \textit{zapisat}'PRF (to write into) and \textit{zarisovat}'PRF (to paint into). According to (105), the prefix ZA- adds the BECOME AT component to its input verbs. The lexical imperfective accomplishments, however, have their own BECOME event as a part of their denotations. One way to solve this mismatch is to assume that ZA- in some way substitutes the inherent BECOME event of \textit{pisat}'IMP (to write) and \textit{risovat}'IMP (to paint) by the BECOME AT event of change. If it is the case, then such substitution is expected to alter the lexical meaning of the given lexical accomplishments in some recognizable way. Indeed, as mentioned in 3.3.2 (example 79), \textit{pisat}'IMP (to write) and \textit{risovat}'IMP (to paint) lose their inherent lexical meaning of creating a new entity by the means of writing and painting. The ZA-derived output forms \textit{zapisat}'PRF (to write into) and \textit{zarisovat}'PRF (to paint into) can only mean that some existing object (information, landscape, etc.) moved into some location (notebook, album) by writing and painting, respectively. I shall illustrate this point in (106).

\textsuperscript{22} Some verbs do not originally have goal arguments, but still occur with the spatial prefix ZA-. Such cases are explained by the BAWP shift operation in section 3.5.5.
(106) a. Leonardo Da Vinci pisałIMP / nisovalIMP Mona Lizu.
    Leonardo Da Vinci wrote painted Mona Lisa
    'Leonardo Da Vinci painted the Mona Lisa.'

b. Leonardo Da Vinci napisalPRF / narisovalPRF Mona Lizu.
    Leonardo Da Vinci NA-wrote NA-painted Mona Lisa
    'Leonardo Da Vinci painted the Mona Lisa.'

    Leonardo Da Vinci ZA-wrote Mona Lisa

The verb *pisat'IMP (to write) can be used metaphorically in Russian to refer to creating a new painting in the same way as *risovat'IMP (to paint), as shown in (106a). Its standard perfective correlate napisat'PRF (to write) in (106b) is also compatible with this metaphoric extension of meaning. The ZA-prefixed zapisat'PRF (as well as zarisovalPRF) in (106c) is, however, infelicitous in such a context. This infelicity arises due to the fact that the BECOME WRITTEN event of change in the lexical accomplishment pisat'IMP (to write), which applies to a theme argument and can express a gradual event of creation of its theme, is replaced by the BECOME AT event of change in spatial location, which is not capable of expressing the meaning of creation in (106a-b), since it affects locations rather than themes.²³

If accomplishments can also serve as input verbs for the spatial ZA-, as is the case with write and paint, then there is an obvious mismatch with the activity type input verbs for the ZA-SHIFT operation in (105). There are two solutions to this problem:

1) devising a separate aspectual type-shift operation from standard accomplishments into locative ones; b) assuming that the standard accomplishments need to be shifted into activity predicates first in order to be compatible with the prefix ZA-. I find the second solution more plausible due to the fact that an accomplishment-activity shift seems to be a generally available aspectual operation in Russian. For example, the delimitative prefix PO- is generally used to derive pofectives (Piñón's 1993 term), which I view as perfection delimited activity verbs in Russian. Many imperfective accomplishments in Russian may have both a perfection accomplishment correlate and a perfective delimited pofective form (see the discussion of hybrid predications in

²³ As I will show in the following chapters, the prefix ZA- is generally incompatible with the meanings of creation/consumption, even when it measures the extent of change in a theme.
Mehlig 2007). The latter one does not entail any definite change in an incremental theme argument, but simply states that there was a certain process that took place for some (relatively short) time. In terms of the temporal modification, *pofectives* behave as activities, taking the *for X time* modifier over *in X time*. Moreover, *pofectives* reject an incremental modification, and a presence of a theme argument in *pofectives* is optional. Consider the following examples (107)-(108).

(107) a. Ivan postepenno čital IMP knigu.
   Ivan gradually read book
   'Ivan gradually read a/the book.'

b. Ivan postepenno pročital PRF knigu za čas.
   Ivan gradually PRO-read book in hour
   'Ivan gradually read the book in an hour.'

c. Ivan (*postepenno) počital PRF (knigu).
   Ivan gradually PO-read book
   'Ivan read (the book) for a while (and stopped).'</n
d. Ivan počital PRF (knigu) čas / * za čas.
   Ivan PO-read book hour in hour
   'Ivan read (the book) for an hour (and stopped).'</n

(108) a. Ivan postepenno risoval IMP kartinu.
   Ivan gradually painted painting
   'Ivan gradually painted a painting'

b. Ivan postepenno narisoval PRF kartinu za čas.
   Ivan gradually NA-painted painting in hour
   'Ivan gradually painted the painting in an hour.'

c. Ivan (*postepenno) porisoval PRF (kartinu).
   Ivan gradually PO-painted painting
   'Ivan painted (the painting) for a while (and stopped).'</n
d. Ivan porisoval PRF (kartinu) čas / * za čas.
   Ivan PO-painted painting hour in hour
   'Ivan painted (the painting) for an hour (and stopped).'
Examples (107a-b)-(108a-b) are imperfective and perfective accomplishments, respectively; while (107c-d)-(108c-d) are perfective delimited activities. Again, it is possible to analyze the prefix \(PO\)- as an aspectual shift operator from imperfective accomplishments into delimited activities. However, as demonstrated in chapter I, the delimitative \(PO\)- freely applies to imperfective activities, such as \(\text{gul"at}^{\text{IMP}}\) (to walk), \(\text{raborat}^{\text{IMP}}\) (to work) and states, such as \(\text{"žit"}^{\text{IMP}}\) (to live), \(\text{"bolet"}^{\text{IMP}}\) (to be sick), and shifts them into delimited activities and states – \(\text{pogul"at}^{\text{PRF}}\) (to walk for a while), \(\text{poraborat}^{\text{PRF}}\) (to work for a while), \(\text{"požit"}^{\text{IMP}}\) (to live for a while) and \(\text{pobopložit}^{\text{PRF}}\) (to be sick for a while). Thus, the analysis of \(PO\)- would require at least two type shift operations – from imperfective activities (and states) into perfective delimited activities, and from imperfective accomplishments into delimited activities. Such approach would lead to the situation in which \(ZA\)- and \(PO\)- (and possibly other verbal prefixes) would be associated with a number of type shift operations each. On the other hand, assuming that these prefixes take activity (and state) verbs as their input, and that there is a generally available type-shifting operation from imperfective accomplishments into imperfective activities in Russian, provides us with a more elegant theory of prefixation by reducing a number of semantic operations, associated with a given verbal prefix.

In fact, such accomplishment-into-activity type-shifting operation has been proposed in Rothstein 2004 to account for activity readings that arise with some accomplishment events in English, such as \(Dafna read the book for hours\). In such cases, the given shift operation extracts an activity part of an accomplishment event, separating it from the BECOME subevent. I propose a version of Rothstein's (2004) accomplishment-into-activity shift (let's call it the EXT operation), triggered by the prefix \(ZA\)- (and, presumably, other verbal prefixes), which applies to imperfective accomplishments in Russian and shifts them into imperfective activities.

(109) **Activity Extraction Operation [adopted from Rothstein 2004]:**

\[
\text{EXT}(\lambda x \lambda y \lambda P. \lambda e. \exists e_1, e_2 [ e = \delta (e_1 \sqcup e_2) \land P_{\text{ACT}}(e_1) \land \text{Agent}(e_1) = x \land \text{Th}(e_1) = y \land \text{BECOME-P-ed}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))])
\]

\[
\rightarrow \lambda x \lambda y \lambda P. e [ P_{\text{ACTIVITY}}(e) \land \text{Agent}(e) = x \land \text{Th}(e) = y]
\]
Thus, applying EXT operation to the transitive imperfective accomplishment 
*pisat*IMP (to write) results in extracting its activity part in (110)

\[(110) \text{EXT}(\lambda x \lambda y \lambda e. \exists e_1, e_2 [e = \overline{S}(e_1 \cup e_2) \land \text{WRITE}(e_1) \land \text{Agent}(e_1) = x \land \text{Th}(e_1) = y \\
\land \text{BECOME WRITTEN}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))])]

\[\rightarrow \lambda x \lambda y \lambda e [\text{WRITE}(e) \land \text{Agent}(e) = x \land \text{Th}(e) = y]

Adding a goal argument to the obtained writing activity in (110) and applying the 
locative ZA-SHIFT results in the derivation of the locative ZA-prefixed 
accomplishment verb *zapisat*PRF (to write into) in (111).

\[(111) \text{ZA-SHIFT}_{\text{act.}} \rightarrow \text{loc. accompl.}(\lambda x \lambda y \lambda e [\text{WRITE}(e) \land \text{Agent}(e) = x \land \text{Th}(e) = y \\
\land \text{Goal}(e) = z]) =
\lambda x \lambda y \lambda z \lambda e. \exists e_1, e_2 [e = \overline{S}(e_1 \cup e_2) \land \text{WRITE}(e_1) \land \text{Agent}(e_1) = x \\
\land \text{Theme}(e_1) = y \land \text{Goal}(e_1) = z \land \text{BECOME AT}(e_2) \land \text{Arg}(e_2) = \text{Goal}(e_1) \\
\land \text{INCR}(e_1, e_2, C(e_2))])

It is important to mention that the EXT operation is triggered by the prefix ZA-
whenever there is a mismatch between an aspectual class of a given input verb and the 
semantics of the ZA-shift. In such a way, the EXT operation works in tandem with 
ZA-, rather than being an independent semantic operation in Russian. Are there any 
independent *accomplishment-into-activity* shifts in Russian, not associated with verbal 
prefixes? I shall leave this question open for further research.

The proposed locative ZA-SHIFT in (105) accounts for the cases of ZA-prefixed 
verbs, derived from determinate, semelfactive and *pour* and *spray/load* input verbs, 
which are all compatible with expressing a directed motion and allow goal arguments 
in their lexical argument structure. A different kind of mismatch occurs, however, 
when ZA- applies to unprefixed input verbs, a priori incompatible with the idea of 
directed motion toward some goal location. As illustrated in 3.4.2, a fair number of

\[24 \text{I assume that the extracted activity is transitive, but its theme argument can be implicit, as in } \text{Ivan pisat}^{\text{IMP}} \text{ (Ivan was writing [something]). The locative accomplishment prefers an explicitly provided theme, but can also occur with an implicit contextually-provided one. Example: } \text{Kyda ty dela moj diplom? (Where did you place my diploma?)} \text{ – Zasunula v jaščik stola ([I] shoved [it] into the desk drawer.)}\]
input verbs for the spatial prefix ZA- do not denote a directed motion, nor have a goal argument in their lexical argument structures. Yet these verbs are shifted into the spatial ZA-prefixed accomplishments by ZA-, thus, undergoing a change in their lexical meanings and argument structures. The most radical examples of such shift are the empty-based verbs, where the meaning of the locative accomplishment is entirely based on the context, such as zafutbolit^{PRF} and zapuzyrit^{PRF} (vaguely interpreted as to kick with force). The aspectual ZA-shift in (105) does not account for these changes in lexical meaning and argument structure of some input verbs. Thus, I assume that there must be some lexical coercion process, triggered by the prefix ZA-, which precedes its application and adjusts those input verbs to occur with the ZA-shift in (105). This process, which I shall call By-Analogy-With-Prototype shift, is discussed in the following section.

3.5.5 By-Analogy-With-Prototype Shift (BAWP)

By-Analogy-With-Prototype mechanism (in short, BAWP) is a lexical coercion shift, which changes the lexical meaning of an input verb and/or its argument structure to make it suitable for the application of the prefix ZA-. In order to understand the way BAWP operates, one needs to address the issue of change of meaning of words in the language. Though the meaning change of a particular word is not always predictable, there are some forces in the language that account for such changes (Meillet 1921, Ullman 1967). One of such forces is the associative connection. A new word must have some association with the existing one with respect to its lexical meaning. Other major mechanisms of change of meanings are metonymic shifts and metaphoric drifts (Padučeva 2004: 157-176). In the case of verbs, a metonymic shift involves shifting focus from a central semantic component of the verb meaning and emphasizing a more peripheral component or an implication, associated with the lexical meaning of the given verb. Padučeva 2004 provides an example of metonymic shift with the verb zvenet^{IMP} (to ring). In ee golos zvenet^{IMP} (her voice rang), zvenet^{IMP} (to ring) describes the sound of one's voice, but in vdali zveneli^{IMP} golosa (some voices were heard ringing far away), the lexical meaning of ring is slightly shifted to emphasize the existence of the voices far away, rather than the way they sound (Padučeva 2004: 158).

I propose that the BAWP operation involves associative analogies and metonymic shifts, which interact in forming new lexical meanings (and modifying argument
structures) of its input verbs. In the particular case of the spatial prefix $ZA-$, the BAWP shift models the input verbs it applies to after some prototypical thematic class of input verbs that occur naturally with the given meaning of a prefix. For the spatial $ZA-$, such prototypical class is determinate motion verbs, which naturally satisfy the selectional restrictions of the prefix $ZA-$ (i.e., they are compatible with the meaning of progressive directed motion and have goal arguments in their argument structures).

In such a way, the BAWP coercion operation, triggered by the spatial $ZA-$, models unprefixed verbs after the determinate motion ones. In this modelling process, the given input verbs are shifted into the $<l,<d_n,<e,t>>$-type structure, resulting in the addition of a goal argument position to their lexical argument structure. For instance, the hit verbs $bit'\text{IMP}$ (to hit) and $kolotit'\text{IMP}$ (to beat), which do not have a goal argument position, undergo such shift prior to the application of the spatial $ZA-$.

(112) a. Ivan $bit'\text{IMP}$ (*gvozd'v stenu).
    Ivan hit nail in wall
b. Ivan $zabil\text{PRF}$ gvozd'v stenu.
    Ivan $ZA$-hit nail in wall
    'Ivan hammered the nail into the wall.'

Naturally, the BAWP conversion is not universally available, since not every verb in the lexicon can be derived into a locative $ZA$-prefixed accomplishment. I assume that the success of reconstructing the lexical meaning and argument structure of some unprefixed input verb by analogy with a determinate motion verb depends on the ability of the given verb to convey some idea of motion in its lexical meaning. The further a certain verb is from expressing a motion, the more contextual support it needs in order to be coerced into the spatial reading with $ZA$-. For instance, in the case of $bit'\text{IMP}$ (to hit), it is plausible that some motion takes place in the course of the hitting event. Thus, $bit'\text{IMP}$ is reinterpreted as to move toward by hitting by analogy with such transitive determinate motion verbs as $nesti\text{IMP}$ (to carry), and is also type-shifted into the $<l,<d_n,<e,t>>$-type verb, allowing it to take a goal argument. Then, the prefix $ZA$- applies to this newly coined verb, changing its meaning into to hammer into.
To sum up, the semantic analysis of the spatial prefix ZA- as an aspectual shift-operator, deriving activities into locative accomplishments, accounts for aspectual differences between the spatial ZA-prefixed verbs and their input counterparts, observed in the section 3.4.1. The spatial ZA- imposes a BECOME AT event on the activity event. The BECOME AT event takes a location, denoted by the goal argument of an activity event, as its incremental argument. A semantic behavior of a locative ZA-prefixed accomplishment (i.e., its monotonic manner of change, restrictions on its goal and source arguments, conditions of its validation) is explained by the properties of the BECOME AT event of change in 3.5.3. Though the application of the spatial ZA- is restricted to activity verbs, which have a goal argument position, the range of its input verbs can be expanded by the EXT and BAWP-shift operations that presumably work in tandem with the ZA-shift operation and precede its application.

One more point. A particular group of the locative ZA-prefixed accomplishments, derived from the semelfactive throw-class verbs, stands aside from other locative accomplishments by allowing only the temporally minimal accomplishment readings with single solid objects as their holistic themes. Rappaport-Hovav 2006 notes that throw verbs are odd with the in X time modifier, pointing to the infelicity of such examples as ?We launched the rocket out of the earth’s atmosphere in six minutes. This seems to be the case for Russian as well, judging by the oddness of the semelfactive putstit PRF (to launch) and its ZA-prefixed form zapustiti PRF (to launch into) in (113).

(113) a. ?Korolev putstit PRF raketu na orbitu za čas.
   Korolev launched rocket on orbit in hour
   'Korolev launched the rocket to the orbit in an hour.'

b. ?Korolev zapustiti PRF raketu na orbitu za čas.
   Korolev ZA-launched rocket on orbit in hour
   'Korolev launched the rocket to the orbit in an hour.'

Thus, it is plausible that the throw type semelfactives constitute a separate aspectual subclass of activity verbs in Russian. Consequently, their spatial ZA-prefixed outputs form a special subclass of locative ZA-prefixed accomplishments. Henceforth, I
consider the *throw*-type-based locative accomplishments as borderline cases of locative accomplishments, which may differ from mainstream locative accomplishments in their aspectual features. I shall leave this issue for further research and continue exploring the resultant and inchoative meanings of *ZA*- in the following chapters.
Chapter IV.
The Resultant Meaning of ZA-.

4.1 Introduction

The previous chapter provided a semantic analysis of the spatial meaning of ZA-: the mechanism of derivation of locative accomplishments, denoting incremental events of change, affecting locations. The current chapter IV discusses the resultant meaning of ZA-: the derivation of ZA-prefixed verbs, denoting a change in an entity, denoted by the theme argument, in the course of a given event.

As argued in the previous chapter, the concept of change that the argument of an incremental event undergoes is subjected to a broad interpretation. For instance, in the case of the locative accomplishments in Chapter III, the change in the location, denoted by a goal argument, meant that more and more parts of that location became accessible in the course of the motion process. Thus, such change is defined as a change in the accessibility of locations, denoted by goal arguments in locative accomplishments. Naturally, in the case of 'standard' accomplishment events, where the argument of the BECOME subevent is a theme, the range of changes that an entity, denoted by the theme, can undergo in the course of an event is considerably wider. An object can be created from a scratch, as letter in write a letter or house in build a house. Or it can be consumed, as in the case of sandwich in eat a sandwich, or lawn in mown a lawn. The thematic class of creation verbs, on the one hand, and the thematic class of consumption verbs, on the other, represent two polar types of accomplishments. Other accomplishments denote different types of changes in their theme arguments. Such accomplishments, as unlock the door and repair the computer, denote a change in one of the attributes of their themes, such as being unlocked and being fixed. Change of State accomplishments, such as thicken and lengthen, denote a change in some physical property of a theme argument, while fill in and cover denote a change in capacity of a theme. Hence, I assume that various accomplishments encode which types of change are imposed on their theme arguments as a part of their lexical semantics. In such a way, accomplishment verbs can be further classified into distinguishable thematic classes within a lexical aspectual class of accomplishment.
events in terms of what kind of changes they impose (and, consequently, which selectional restrictions they apply) on their themes.

On the other hand, the interpretation of derived accomplishments, such as *sing the baby asleep* and *hammer the metal flat*, is more dependent on the contextual environment, rather than the lexical semantic meaning of an input verb (Rothstein, 2004). As became evident from the previous discussion in chapter III, a verbal prefixation in Russian serves as another mechanism of deriving accomplishments from activities; supplying derived accomplishments with content on a par with context. Thus, the spatial prefix *ZA*- derives locative accomplishments by introducing the rigidly structured incremental event of spatial change, BECOME AT, which imposes particular restrictions on the choice and manner of change of its incremental argument. The fourth chapter is structured similarly to the previous one. I look at other types of *ZA*-prefixed verbs that affect objects, denoted by their theme arguments. I discuss these *ZA*-prefixed outputs, talk about their input counterparts, compare the prefixed forms with their input counterparts with respect to aspectual class, lexical meaning and argument structure, and propose a formal explanation for the obtained findings. I shall argue that, similarly to the spatial *ZA*-, the resultant prefix *ZA*- derives a new type of accomplishment, constraining the type of change of incremental process, and the choice of incremental argument.

### 4.2 The Resultant Meaning of *ZA*-

The term *resultant meaning* is a general label for a wide range of *ZA*-prefixed verbs, which bring about some change in their theme arguments. Such definition excludes locative *ZA*-prefixed verbs, discussed in chapter III, and inchoative *ZA*-prefixed verbs, discussed in chapter V. Thus, the *resultant meaning* is, in a sense, a super-category for a large number of *ZA*-prefixed verbs that can be further subcategorized into distinct thematic (sub)-classes, depending on the nature of a change in their denotations. I propose a four-class subcategorization of the resultant *ZA*-prefixed verbs, drawing on the works of Ovchinnikova 1979, Janda 1986 and Zaliznjak 1995. The first subclass of resultant *ZA*-prefixed verbs is the *accumulative* *ZA*-prefixed verbs that correspond to the *Change of State* verbs in Janda 1986 and BECOME class verbs in Zaliznjak 1995. The accumulative *ZA*-prefixed verbs denote an accumulation of some physical property of the theme argument in the course of the
given event. For instance, \textit{zagustet'}\textsubscript{PRF} (to thicken) denotes an accumulation of the \textit{thick} property by a theme argument in the course of the thickening event. The second subclass of resultant \textit{ZA}-prefixed verbs is \textit{cover} verbs, which denote a change in their theme arguments with respect to their external surface or capacity. Example of such verb is \textit{zasypat'}\textsubscript{PRF} (to pour) in \textit{zasypat'}\textsubscript{PRF} \textit{jamu peskom} (to fill the hole with sand), where the affected argument is a container that undergoes a change in its physical capacity in the course of the pouring of sand. The third class includes \textit{damage} verbs, denoting an infliction of damage upon their theme arguments, as in the case of \textit{zamučit'}\textsubscript{PRF} (to torture) and \textit{začitat'}\textsubscript{PRF} (to read [the book] to pieces). Finally, a fourth subclass of resultant \textit{ZA}-prefixed verbs – \textit{get} verbs – denote events in which a theme argument comes into possession of the agent, as in \textit{zavladet'}\textsubscript{PRF} (to take possession of) and \textit{zavoevat'}\textsubscript{PRF} (to conquer). These four thematic subclasses of \textit{ZA}-prefixed verbs can all be subsumed under the resultant accomplishment category, which will be formally explained in 4.4. In the following subsections, I analyze each of these four subclasses in terms of by-now-familiar Krongauz 1998 approach and discuss their input counterparts.

\textbf{4.2.1 The Accumulative ZA-Prefixed Verbs}

As mentioned above, the accumulative \textit{ZA}-prefixed verbs denote a gradual accumulation of some characteristic property of a theme argument in the course of a given event. Consider the following examples (1)-(5).

(1) Varen'e v banke zagustelo\textsubscript{PRF}.
   Jam in jar ZA-thickened
   'The jam in the jar thickened.'

(2) Gvozd' v stene sovsem zaružel\textsubscript{PRF}.
   Nail in wall totally ZA-became rusty
   'The nail in the wall became totally rusty.'

(3) Derevo v dvore zasoxlo\textsubscript{PRF}.
   Tree in yard ZA-became dry
   'The tree in the court dried up.'
(4) Na takom moroze reka bystro zamerzla\textsuperscript{PRF}.
On such frost river quickly ZA-froze
'The river quickly froze up due to the bitter frost.'

(5) Zerkalo na stene zamutnelo\textsuperscript{PRF}.
Mirror on wall ZA-grew dim
'The mirror on the wall grew dim.'

The theme arguments of the ZA-prefixed verbs in (1)-(5) undergo a gradable change with respect to some physical property. The \textit{jam} in (1) accumulates a certain degree of \textit{thickness}; the \textit{nail} in (2) changes with respect to its degree of rustiness; the \textit{tree} in (3) acquires some degree of dryness; the \textit{river} in (4) changes in terms of its property of \textit{being frozen}; while the \textit{mirror} in (5) undergoes a change with respect to its \textit{dimness}. Additional examples of the \textit{accumulative} ZA-prefixed verbs in Russian are \textit{zaželten'}\textsuperscript{PRF} (to become yellow), \textit{zakostenen'}\textsuperscript{PRF} (to stiffen), \textit{zakisnut'}\textsuperscript{PRF} (to turn sour), \textit{zakamenet'}\textsuperscript{PRF} (to petrify), \textit{zaderevenet'}\textsuperscript{PRF} (to become numb), \textit{zaparšivenet'}\textsuperscript{PRF} (to become mangy), \textit{zaspirtovat'}\textsuperscript{PRF} (to preserve in alcohol), \textit{zakonservirovat'}\textsuperscript{PRF} (to preserve in cans), \textit{zasušit'}\textsuperscript{PRF} (to dry out).

One important observation about the accumulative ZA-prefixed verbs concerns their de-adjectival nature (Zaliznjak, 1995). A significant part of the input counterparts for \textit{accumulative} verbs is derived from the scalar adjectives in Russian (see discussions of scalar adjectives in Bierwisch 1989, Kennedy 1997, Seuren 1978). Nonetheless, not every verb that is derived from a scalar adjective can serve as an input for the prefix ZA-. Janda 1986 points out that the accumulative ZA-prefixed verbs (\textit{Change of State} verbs in her terminology) are associated with a unidirectional change of degree that goes from the bottom to the top of a relevant scale. Thus, it is possible to have accumulative ZA-prefixed verbs, such as \textit{zamerznut'}\textsuperscript{PRF} (to freeze) and \textit{zakostenet'}\textsuperscript{PRF} (to stiffen), that denote an increase in the degree or extent of \textit{frost} and \textit{stiffness}, but not *\textit{zatajat'}\textsuperscript{PRF} (to ZA-melt) and *\textit{zamjagčit'}\textsuperscript{PRF} (to ZA-soften), which denote a decrease in the extent of these properties. I shall add on my part that the latter forms occur with the prefix RAZ-, as in \textit{raztajat'}\textsuperscript{PRF} (to melt) and \textit{razmjagčit'}\textsuperscript{PRF} (to soften). The prefixes ZA- and RAZ- appear to be complementary to each other with respect to \textit{accumulative} verbs, since *\textit{razmerznut'}\textsuperscript{PRF} (to RAZ-freeze)
and *razkostenet$^{\text{PRF}}$ (to RAZ-stiffen) are also infelicitous. Naturally, such data raises questions about which scales are associated with which properties. Rotstein & Winter 2004 propose a semantic account that distinguishes between two types of scalar adjectives in English – total and partial adjectives (Rotstein 2004, Rotstein & Winter 2004). Partial and total adjectives form antonymous adjectival pairs, such as dirty – clean, dangerous – safe, wet – dry. Partial adjectives, such as dirty, dangerous, wet, denote some degree of dirtiness, danger and wetness, while their total counterparts clean, safe, dry express a lack of dirtiness, danger, wetness in their denotations. Two types of adjectives differ with respect to some grammatical tests in English, such as their acceptability with almost. Consider the following examples in (6)-(7), taken from Rotstein 2004.

(6) a. The towel is wet, but it is almost dry.
   b. *The towel is dry, but it is almost wet.

(7) a. The glass is dirty, but it is almost clean.
   b. *The glass is clean, but it is almost dirty.

The total adjectives occurring with almost do not entail the negation of their partial counterparts, while the partial adjectives occurring with almost entail the infelicity of their total counterparts. Rotstein & Winter 2004 propose a scalar analysis of the total-partial adjectives in which each antonym is associated with a measure scale, which is inversed with respect to the scale of its counterpart. The scales of a total adjective and its partial antonym are related in such way that an initial point on the partial scale corresponds to the default value for a total adjective on the total scale. Moreover, a partial scale is unbounded at one end, while the total scale is bounded at both ends and can be equated to a single point (i.e., default value = maximum value). Such analysis is graphically represented in (8), adopted from Rotstein & Winter 2004.
In regard to the prefix \(ZA\)-, it seems that \(ZA\)- takes only those input verbs that are derived from total adjectives, while \(RAZ\)- applies to the ones, derived from partial adjectives. Consider the following T/P pairs of adjectives: \(syxoj\) (dry) – \(mokryj\) (wet), \(tverdyj\) (hard) – \(mjagkij\) (soft). The de-adjectival verbs, derived from the total members of these pairs, combine with \(ZA\)-. On the other hand, the verbs, derived from the partial members of adjectival pairs, occur with the prefix \(RAZ\)-. As a result, we have \(zasoxnut_{PRF}\) (to dry up), \(zatverdet_{PRF}\) (to harden) vs. \(razmoknut_{PRF}\) (to grow soaked, wet), \(razmjaknut_{PRF}\) (to soften). Note that there are also exceptions to this generalization, such as \(čistić_{IMP}\) (to clean), which is compatible with both \(ZA\>- and \(RAZ\>- forming \(začistić_{PRF}\) (to cleanse) and \(razčistić_{PRF}\) (to clean an area, to unclog).

Nonetheless, there seems to be a strong correlation between the de-adjectival verbs, derived from total adjectives and the resultant prefix \(ZA\)-. The reasons for this correlation are given in the formal analysis section 4.4 and in the chapter VI. For now, it will suffice to say that the prefix \(ZA\)- shows 'preference' for bounded scales, where a default value is a constant. The total adjectives (and, consequently, their verbal derivatives) provide such type of scales in their denotations.

The accumulative \(ZA\)-prefixed verbs have both transitive and intransitive forms. Some intransitive verbs, such as \(gustet_{PRF}\) (to thicken) and \(soxnut_{PRF}\) (to dry) are basic, while the others are derived from the corresponding transitive verbs by the independent operation of reflexivization, triggered by the reflexive particle \(-sja\), as in the case of \(zakonservirovat_{PRF}\) (to preserve) - \(zakonservirovat'_{sja}\) \(PRF\) (to become preserved), \(zasušit_{PRF}\) (to dry up) - \(zasušit'_{sja}\) \(PRF\) (to become dried up). In the case of intransitivization by \(-sja\), a theme argument of the transitive verb is raised from the direct object position to the syntactic subject position of the derived intransitive verb.
The intersection of the diatheses of *accumulative* verbs provides the following model of control.

### The Model of Control of the Resultant Accumulative ZA-Prefixed Verbs

<table>
<thead>
<tr>
<th>Intransitive verbs</th>
<th>Transitive verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case</strong></td>
<td><strong>Case</strong></td>
</tr>
<tr>
<td>X</td>
<td>ZA-VERB</td>
</tr>
<tr>
<td>nominative</td>
<td>nominative</td>
</tr>
<tr>
<td><strong>Thematic Role</strong></td>
<td><strong>Thematic Role</strong></td>
</tr>
<tr>
<td>THEME</td>
<td>THEME</td>
</tr>
</tbody>
</table>

Intransitive accumulative verbs have an obligatory theme argument that occupies a syntactic subject position and acquires nominative case. Transitive accumulative verbs have two obligatory participants – an agent or an instrument that occupies a subject position (and acquires nominative case), and a theme argument that takes a direct object position and is assigned accusative case by the verb. *Accumulative* ZA-prefixed verbs have the following interpretation structure.

**Interpretation Structure for the Resultant Accumulative Cluster Meaning of ZA-**

1. [for intransitive verbs] An object X undergoes a gradual change with respect to one of its physical properties in a manner V, so that the accumulated extent of change in X is equal to or above some conventional norm at the culmination of the given event.

2. [for transitive verbs] A person or object X causes or leads to a situation in which an object Y undergoes a gradual change with respect to one of its physical
properties in a manner $V$, so that the accumulated extent of change in $X$ is equal to or above some conventional norm at the culmination of the given event.

The next step is to propose a grammatical test that distinguishes the *accumulative* subclass of resultant $ZA$-prefixed verbs from other thematic subclasses. One of the options is to paraphrase a de-adjectival accumulative verb with the $BECOME \ X$ phrase, where $X$ stands for the adjective that the given verb is derived from.

(9) a. Varen'je zagustelo $^{\text{PRF}}$.
    Jam    $ZA$-thickened
    'The jam thickened.'

b. Varen'je stalo $^{\text{PRF}}$ gustym.
    Jam    became thick
    'The jam became thick.'

(10) a. Derevo zasoxlo $^{\text{PRF}}$.
    Tree    $ZA$-dried
    'The tree dried up.'

b. Derevo stalo $^{\text{PRF}}$ suxim.
    Tree    became dry
    'The tree became dry.'

(11) a. Ivan zasušil $^{\text{PRF}}$ griby.
    Ivan $ZA$-dried mushrooms
    'Ivan dried the mushrooms up.'

b. Ivan sdelal $^{\text{PRF}}$ tak, čtoby griby stali $^{\text{PRF}}$ sušennumi.
    Ivan made so that mushrooms became dried up
    'Ivan made the mushrooms become dry up.'

In such way, the $BECOME +$ adjective phrases in (9b-11b) correspond to the lexical meanings, expressed by the accumulative $ZA$-prefixed verbs in (9a)-(11a). The problem with this test, however, is that not all accumulative class verbs are de-
adjectival. Some accumulative verbs, such as zamerznut'\textsuperscript{PRF} (to freeze), are inherently basic and their corresponding adjectives are deverbal, as in (12b).

(12) a. Reka zamerzła\textsuperscript{PRF}.
    River ZA-froze
    'The river froze up.'

b. Reka stala\textsuperscript{PRF} zamerźżej.
    River became frozen
    'The river became frozen.'

In (12b), the adjective zamerżsaja (frozen) is derived from the accumulative verb in (12a), and not the other way around. Since deverbal adjectives can be derived from other resultant verbs as well, as in zastroy\textsuperscript{PRF}\textsuperscript{'} pusty\textsuperscript{'} (to build up an empty area) – zastroennyj pustyr' (a built-up empty area), the \textit{BECOME X} paraphrasing test fails to distinguish between the verbs like zamerznut'\textsuperscript{PRF} (to freeze) and other types of resultant verbs. In such case, I propose an additional grammatical test, based on the complementary distribution between the prefixes ZA- and RAZ- with respect to accumulative verbs. As I mentioned above, an accumulative ZA-prefixed verb generally has a RAZ-prefixed antonym that denotes a reversal of the process, expressed by an accumulative verb. Thus, if a ZA-prefixed verb denotes an event of freezing of the river, we expect to find a RAZ-prefixed verb that denotes a reverse event of melting of the river. Such verb is rastajat' (to melt) in (13b).

(13) a. Reka zamerzła\textsuperscript{PRF}.
    River ZA-froze
    'The river froze up.'

b. Reka rastajala\textsuperscript{PRF}.
    River RAZ-melted
    'The river melted.'

The combination of the \textit{BECOME X} and the verbal RAZ-prefixed antonym tests provides means to draw a line between accumulative and other resultant ZA-prefixed verbs in Russian. This is not to say that other resultant verbs do not have RAZ-
prefixed variations in the lexicon. These forms, however, do not seem to stand in an antonymic relation with the given ZA-prefixed verbs. For instance, \textit{zavešat'}\textsuperscript{PRF} \textit{stenu kartinami} (to cover wall by hanging paintings) has a RAZ-prefixed alternative form \textit{razvešat'}\textsuperscript{PRF} \textit{kartiny na stene} (to hang a lot of paintings all over the wall), but these verbs are not antonyms.

The input verbs for the accumulative class of the ZA-prefixed verbs are generally de-adjectival Change of State verbs (Levin 1993), derived from total scalar adjectives in Russian. They denote a gradual change of their themes with respect to some physical property. Examples of such input verbs are \textit{gустет'}\textsuperscript{IMP} (to thicken), \textit{ржавет'}\textsuperscript{IMP} (to become rusty), \textit{сохнут'}\textsuperscript{IMP} (to become dry), \textit{kаменет'}\textsuperscript{IMP} (to become petrified), \textit{суšит'}\textsuperscript{IMP} (to dry), \textit{консервироват'}\textsuperscript{IMP} (to preserve). Note, however, that some input verbs have become archaic or shifted their meanings in the contemporary Russian. For instance, the corresponding input forms of \textit{zakostenet'}\textsuperscript{PRF} (to stiffen) and \textit{zaderevenet'}\textsuperscript{PRF} (become numb) – \textit{kostenet'}\textsuperscript{IMP} (to stiffen) and \textit{derevenet'}\textsuperscript{IMP} (become numb) – are found in the literature, but are rarely used in the colloquial Russian. An input verb for \textit{zamerznut'}\textsuperscript{PRF} (to freeze) – \textit{мерзнут'}\textsuperscript{IMP} (to freeze) – appears to have undergone a semantic drift in its lexical meaning (Ullman 1967). The historical lexical meaning of \textit{мерзнут'}\textsuperscript{IMP} (to freeze) was presumably synonymous to the meaning of its perfective counterpart \textit{zameznut'}\textsuperscript{PRF} (to freeze), describing a gradual process of change in which an object becomes frozen. Evidence for this assumption comes from a line in the 19\textsuperscript{th} century poem \textit{Gypsies} by Alexander Pushkin "\textit{i merzla bystraja reka...}" (and the fast river was freezing). However, \textit{мерзнут'}\textsuperscript{IMP} (to freeze) has a different meaning in the contemporary Russian, which is best translated as \textit{being in the state of experiencing cold}. As a consequence, \textit{мерзнут'}\textsuperscript{IMP} (to freeze) and \textit{zameznut'}\textsuperscript{PRF} (to freeze) have a different selection of arguments, as illustrated in (14).

\begin{align*}
&\text{(14) a. * Reka merzla} \textsuperscript{IMP} \text { na moroze.} \\
&\quad \text { river froze on frost} \\
&\text{b. Ivan merz} \textsuperscript{IMP} \text { na moroze.} \\
&\quad \text { Ivan froze on frost} \\
&\quad \text {'Ivan froze in the bitter frost.'}
\end{align*}
c. Reka zamerzla \text{PRF} na moroze.
\hspace{1cm} River froze on frost
\hspace{1cm} 'River froze up in the bitter frost.'

The imperfective input verb \textit{merznut}'IMP (to freeze) rejects the theme argument \textit{river} in (14a), taking instead the experiencer argument \textit{Ivan} in (14b). In such a case, it is possible that the accumulative \textit{ZA}-prefixed verb \textit{zamerznut}'PRF (to freeze) is no longer associated with its input verb, but rather should be viewed as a basic perfective verb in Russian.

\textbf{4.2.2 The \textit{Cover} ZA-Prefixed Verbs}

A major subclass of resultant \textit{ZA}-prefixed verbs is \textit{cover} verbs (Zaliznjak, 1995), which denote a gradual change in the physical capacity of some object in the course of an event. A theme argument of the \textit{cover} verbs is interpreted as some physical surface or container. Some examples of the \textit{cover} verbs are provided in (15)-(17) below.

\begin{itemize}
\item (15) Ivan zaasfaltiroval \text{PRF} dorogu.
\hspace{1cm} Ivan ZA-asphalted road.ACC
\hspace{1cm} 'Ivan asphalted the road.'
\item (16) David zapolnil \text{PRF} vanu (vodoj).
\hspace{1cm} David ZA-filled bath.ACC with water.INSTR.
\hspace{1cm} 'David filled the bath (with water).'
\item (17) Robert zabryzgal \text{PRF} stol (kraskoj).
\hspace{1cm} Robert ZA-splashed table.ACC with paint.INSTR.
\hspace{1cm} 'Robert splashed the table (with paint).'
\end{itemize}

In (15), the theme \textit{road} is covered with asphalt; in (16), the \textit{bath} is filled with water; and in (17) the \textit{table} is splashed with paint. An optional instrument argument, such as \textit{water} in (16) and \textit{paint} in (17), describes an object or substance, which is used to cover the corresponding surface/container, denoted by the theme argument. In some \textit{cover} verbs, such as \textit{zabetonirovat}'PRF (to cover with concrete) and \textit{zakrasit}'PRF
(to cover with paint), the filling substance is implicitly provided by the lexical meaning of the verb itself. For instance, \textit{zaasfaltirovat}'^\text{PRF} \, (to asphalt) in (15) entails as a part of its lexical meaning that it was \textit{asphalt} that covered the road. Thus, \textit{zaasfaltirovat}'^\text{PRF} \, \textit{dorogu asfaltom} \, (to asphalt the road with asphalt) sounds odd in Russian, since an explicit realization of the instrument argument is redundant in this case.

Additional examples of the \textit{cover} verbs are: \textit{zakrasit}'^\text{PRF} \, <\textit{stenu}> \, (to paint the wall all over), \textit{zastroit}'^\text{PRF} \, <\textit{ploščadku}> \, (to build the area up), \textit{zaselit}'^\text{PRF} \, <\textit{rajon}> \, (to populate a neighborhood), \textit{zarisovat}'^\text{PRF} \, <\textit{dosku}> \, (to paint the blackboard all over), \textit{zaglušit}'^\text{PRF} \, <\textit{radio}> \, (to jam a radio transmission), \textit{zabarrikadirovat}'^\text{PRF} \, <\textit{ulicu}> \, (to barricade the street), \textit{zacementirovat}'^\text{PRF} \, <\textit{šel}> \, (to cement a hole), \textit{zagruzit}'^\text{PRF} \, <\textit{gruzovik}> \, (to load the truck up). The \textit{cover} verbs are generally transitive, though there are some exceptions. For instance, the verbs \textit{zarosti}'^\text{PRF} \, (to overgrow) and \textit{zatonut}'^\text{PRF} \, (to sink) seem to be borderline cases, which may belong to both \textit{accumulative} and \textit{cover} classes of resultant verbs. On the one hand, they denote a gradual change in the property of an object, as in \textit{Sad postepenno zaros}^\text{PRF} \, (the garden gradually became overgrown) and \textit{Korabl' postepenno zatonul}^\text{PRF} \, (the ship gradually sank). On the other hand, they may denote a process of covering the garden with vegetation, or of filling of the ship with water. Some transitive \textit{cover} verbs can be intransitivized by the reflexive particle -\textit{sja}, as in \textit{Ivan zastroil}'^\text{PRF} \, \textit{pustyr'} \, (Ivan built the empty area up) – \textit{Pustyr'} \, \textit{zastroilsja} \, (The empty area became built up).

Another way to intransitivize the transitive \textit{cover} verb is to passivize them, as in \textit{Ivan zastroil}'^\text{PRF} \, \textit{pustyr'} \, (Ivan built the empty area up) – \textit{Pustyr'} \, \textit{byl zastroen} \, [\textit{Ivanom}] \, (The empty area was built up [by Ivan]).

The intersection of the diatheses of the \textit{cover} \textit{ZA}-prefixed verbs provides the following model of control.
The Model of Control of the Resultant Cover ZA-prefixed verbs

<table>
<thead>
<tr>
<th>Transitive verbs</th>
<th></th>
<th></th>
<th></th>
<th>(Z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>X</td>
<td>ZA-VERB</td>
<td>Y</td>
<td>instr.</td>
</tr>
<tr>
<td>Syntactic Position</td>
<td>subject</td>
<td>direct object</td>
<td>indir. object</td>
<td></td>
</tr>
<tr>
<td>Thematic Role</td>
<td>AGENT / INSTRUMENT</td>
<td>THEME</td>
<td>INSTR.</td>
<td></td>
</tr>
</tbody>
</table>

A theme argument in the cover verbs occupies the syntactic subject position and is assigned nominative case. The cover verbs have two obligatory participants – an agent/instrument that occupies a subject position and acquires nominative case; and a theme argument that occupies a direct object position and is assigned accusative case. An optional instrument argument, when explicitly present, takes the indirect object and acquires the instrumental case. The cover ZA-prefixed verbs have the following interpretation structure.

**Interpretation Structure for the Resultant Cover Cluster Meaning of ZA-**

A person or object X covers the surface (or fills a container) Y (with an object or substance Z) in a manner V, so that the extent of change in Y is equal to or above some conventional norm at the culmination of the given event.

Since the cover ZA-prefixed verbs normally denote situations in which a two-dimensional surface is covered (or a three-dimensional container is filled) in the course of an event, I propose a grammatical test that paraphrases cover verbs with the verbs pokryt’PRF (to cover with) and zapolnit’PRF (to fill with).

(18) a. Mary zapudrilaPRF lizo.
    ‘Mary ZA-powdered face
    'Mary powdered her face.'

b. Mary pokrylaPRF lizo pudroj.
    Mary covered face with powder
    'Mary covered her facer with powder.'
(19) a. Ivan zagruzil PRF gruzovik mebel’ju.
   Ivan ZA-loaded truck with furniture
   'Ivan loaded the truck up with furniture.'

b. Ivan zapolnil PRF gruzovik mebel’ju.
   Ivan ZA-filled truck with furniture
   'Ivan filled the truck up with furniture.'

In some cases, though, a theme argument of a cover verb represents a surface in a metaphorical sense, rather than the physical one. E.g., reputation in zapjatnat PRF reputatziju (to stain one’s reputation = to bring shame upon oneself) is a metaphorical surface that is ‘covered’ with shame. In such a case, a literal paraphrase of zapjatnat PRF reputatziju as * pokryt PRF reputatziju pjatnami (to cover one’s reputation with stains) is inadmissible in Russian, though one can say pokryt PRF sebja pozorom (to cover oneself with shame).

The input verbs for the cover subclass of resultant verbs come from various lexical classes of verbs. As in the previous chapter, we can characterize these input verbs in terms of a thematic class and their compatibility with the meaning of cover, expressed by their outputs. A high compatibility means that an input verb undergoes minor changes in its lexical meaning and argument structure, while a low compatibility accounts for more visible changes in the lexical meaning and argument structure. A bulk of the input verbs for cover subclass belongs to the verbs of putting thematic class (Levin 1993). Many input verbs come from the butter thematic class, such as asfaltirovat IMP (to asphalt), betonirovat IMP (to concrete), krasit IMP (to paint), lakirovat IMP (to varnish); fill class, such as mazat IMP (to smear), tzementirovat IMP (to cement), klejet IMP (to glue); pour class, such as lit IMP (to pour liquid) and sypat IMP (to pour sand); spray/load class, such as bryzgat IMP (splash), gruzit IMP (load); spatial configuration verbs of putting, such as stavit IMP (to place), vešat IMP (to hang), tknut PRF (to shove). Some throw verbs, such as brosat IMP (to throw), seem to serve as inputs for the borderline cases between cover and damage subclasses of resultant ZA-prefixed verbs, as in zabrosat PRF Ivana kamnjami (to stone Ivan, lit. to cover Ivan by throwing stones). Some creation verbs, such as stroit IMP (to build), risovat IMP (to draw, paint) and sejat IMP (to sow), give rise to the cover verbs zastroit PRF (to build up), zarisovat PRF (to paint over) and zasejat PRF (to sow with). In terms
of the compatibility with the meaning of *cover*, the verbs above show mixed results. The *butter* and *fill* verbs do not show a significant change in their meaning with respect to their ZA-prefixed counterparts, while *pour, spray/load* and other classes of the input verbs for *cover* verbs undergo a more visible change in their lexical meanings in the process of ZA-prefixation. I will discuss the issue of lexical meaning shifts in more details in the comparison section 4.3. The partial classification of the input verbs for the meaning of *cover* is provided in the following table 4.1.

<table>
<thead>
<tr>
<th>Natural Thematic Class</th>
<th>Compatibility with the meaning of <em>cover</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. butter verbs:</strong></td>
<td>High</td>
</tr>
<tr>
<td><em>asfaltirovat</em> IMP (to asphalt)</td>
<td></td>
</tr>
<tr>
<td><em>lakirovat</em> IMP (to varnish)</td>
<td></td>
</tr>
<tr>
<td><strong>2. fill verbs:</strong></td>
<td>High</td>
</tr>
<tr>
<td><em>tzementirovat</em> IMP (to cement)</td>
<td></td>
</tr>
<tr>
<td><em>mazat</em> IMP (to smear)</td>
<td></td>
</tr>
<tr>
<td><strong>3. pour verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>lit</em> IMP (to pour water)</td>
<td></td>
</tr>
<tr>
<td><em>sypat</em> IMP (to pour sand)</td>
<td></td>
</tr>
<tr>
<td><strong>4. spray/load verbs</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>bryzgat</em> IMP (splash)</td>
<td></td>
</tr>
<tr>
<td><em>gruzit</em> IMP (load)</td>
<td></td>
</tr>
<tr>
<td><strong>5. spatial configuration verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>stavit</em> IMP (to place)</td>
<td></td>
</tr>
<tr>
<td><em>vesat</em> IMP (to hang)</td>
<td></td>
</tr>
<tr>
<td><strong>6. throw verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>brosat</em> IMP (to throw)</td>
<td></td>
</tr>
<tr>
<td><em>kidat</em> IMP (to cast, throw)</td>
<td></td>
</tr>
<tr>
<td><strong>7. creation verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>strojat</em> PRF (to build)</td>
<td></td>
</tr>
<tr>
<td><em>sejat</em> PRF (to sow)</td>
<td></td>
</tr>
</tbody>
</table>
4.2.3 The Damage ZA-Prefixed Verbs

A subclass of ZA-prefixed resultant damage verbs describes cases in which the theme argument denotes an entity, which is damaged or destroyed in the course of a given event. Such entity can be an animate or a material object. The interpretation of damage is in the broad sense and varies from a relatively minor degree of damage to a total annihilation of an object, denoted by a theme argument. Examples of damage ZA-prefixed verbs are given in (20)-(22) below.

(20) Volki zagryzli\textsuperscript{PRF} Ivana v lesu.
    Wolves ZA-gnawed Ivan in forest
    'The wolves gnawed Ivan in the forest.'

(21) Tom zamučil\textsuperscript{PRF} košku Murku.
    Tom ZA-tortured cat Murka.
    'Tom tortured Murka the cat.'

(22) Roni začital\textsuperscript{PRF} Vlastelina Koletz.
    Roni ZA-read Lord of Rings
    'Roni read Lord of the Rings to pieces.'

The wolves in (20) inflict damage on Ivan by gnawing him. In (21), Murka the cat undergoes a process of being tortured by Tom. In (22), the book Lord of the Rings is damaged in the course of the reading event. Some damage verbs allow an optional instrument argument, which describes the tool the damage was inflicted with, such as nož (knife) in Brutus zarezal\textsuperscript{PRF} Cezarja nožom (Brutus slaughtered Caesar with the knife). Examples of additional damage verbs are zaigrat\textsuperscript{PRF} <\textit{plastinku}> (to wear the record off by playing), zarubit\textsuperscript{PRF} <\textit{vraga}> (to chop the enemy), zalečit\textsuperscript{PRF} <\textit{čeloveka do smerti}> (to kill a man by an excessive healing), zakoldovat\textsuperscript{PRF} kogo-to (to bewitch someone), zadušit\textsuperscript{PRF} (to strangle), zakolot\textsuperscript{PRF} (to stab to death), zanosit\textsuperscript{PRF} <\textit{futbolku}> (to wear the T-shirt off by wearing it for too long). As in the case of cover verbs, the damage verbs are generally transitive. Some verbs can be intransitivized by adding the reflexive particle –\textit{sja}, but this operation seems to be restricted. For instance, the damage verb zagryzit\textsuperscript{PRF} (to gnaw) in (20) is incompatible
with -sja. Zacitat’\textsuperscript{PRF} (to read to pieces) in (22) changes its meaning into začitatsja\textsuperscript{PRF} (to spend too much time reading), which is a different lexical meaning than damage. Only zamučit’\textsuperscript{PRF} in (21) undergoes an intransitivization with -sja without a radical change in its lexical meaning, as in Koška Murka zamučilas’\textsuperscript{PRF} lovit’ myšej (Murka the cat became tormented\textsuperscript{exhausted from catching mice). The intersection of the diatheses of the damage verbs provides us with the following model of control.

### The Model of Control of the Resultant Damage ZA-Prefixed Verbs

<table>
<thead>
<tr>
<th>Transitive verbs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>ZA-VERB</td>
<td>Y</td>
<td>(Z)</td>
</tr>
<tr>
<td>Case</td>
<td>nominative</td>
<td>accusative</td>
<td>instr.</td>
</tr>
<tr>
<td>Syntactic Position</td>
<td>subject</td>
<td>direct object</td>
<td>indir. object</td>
</tr>
<tr>
<td>Thematic Role</td>
<td>AGENT / INSTRUMENT</td>
<td>THEME</td>
<td>INSTR.</td>
</tr>
</tbody>
</table>

Damage verbs require two obligatory participants – an agent/instrument that occupies a subject position and acquires nominative case; and a theme argument that occupies a direct object position and is assigned accusative case. An optional instrument argument, when explicitly present, takes the indirect object position and acquires the instrumental case. Damage ZA-prefixed verbs have the following interpretation structure.

#### Interpretation Structure for the Resultant Damage Cluster Meaning of ZA-

A person or object X causes or leads to a situation in which a material animate/inanimate entity Y is damaged or negatively affected in a manner V (by the means of Z), so that the extent of change in Y is equal to or above some conventional norm at the culmination of the given event.

Since the damage verbs describe an extent of damage to their themes, they can be modified by expressions that measure a degree of damage. In the case of the damage to an animate entity, a corresponding ZA-prefixed verb can be modified by do smerti
(to death); in the case of a material object, a verb can be modified with *do polnogo uničtoženija/isčeznovenija* (up to the total destruction/disappearance).

(23) Oni zabili PRF Ivana kamnjami do smerti.
   They ZA-hit Ivan with stones to death
   'They stoned Ivan to death'.

(24) Mary zastirala PRF pjetno na plat'je do polnogo isčeznovenija.
   Mary ZA-washed stain on dress till full disappearance
   'Mary washed the stain off of the dress, till it disappeared completely.'

Some verbs of the *damage* subclass, however, seem to refer to an emotional or mental damage, rather than a physical one, making the test above unsuitable for them. Such verbs are *zasmejat* PRF (to mock) and *zarugat* PRF (to reprimand excessively). In these cases, the meaning conveyed by the verb is the one of excess, associated with some negative implications. For instance, *Ivan* in *Roditeli zarugali* PRF Ivana (The parents reprimanded Ivan) is not physically hurt in the course of the reprimanding event, though *zarugat* PRF has a negative flavor of excess in its meaning. Following Zaliznjak 1995, I consider such *excess* verbs as a special subtype of *damage* ZA-prefixed verbs in Russian. The verbs like *zakoldovat* PRF (to bewitch), *zavorozhit* PRF (to enchant) appear to be a borderline case between *damage* and *get* subclasses of resultant verbs (the latter to be discussed in 4.2.4). On the one hand, they express some negative meaning of applying magic upon some person; on the other hand, they take control over a person by the means of bewitching and enchanting.

The input verbs for the *damage* class show diversity in their distribution across lexical classes. Many of the input verbs for *damage* class belong to the thematic classes of *killing* and *hurt* verbs, such as *kolot* IMP (to stab), *bit* IMP (to hit), *rezat* IMP (to cut), *dušit* IMP (to strangle), *mučit* IMP (to torture, torment) (Levin 1993). Some verbs belong to *amuse* class, such as *koldovat* IMP (to bewitch), *vorožit* IMP (to tell fortune). Other input verbs, such as *čitat* IMP (to read), *igrat* IMP (to play), *stirat* IMP (to wash), *nosit* IMP (to carry), come from a variety of lexical classes, which themselves are not associated with the meaning of *damage*. Thus, the attempt to
classify the input verbs for damage with respect to their lexical class and compatibility with the meaning of damage provides the following picture in table 4.2.

### Table 4.2
A Partial Classification of the Input Verbs for the Damage Z4-Prefixed Verbs

<table>
<thead>
<tr>
<th>Natural Thematic Class</th>
<th>Compatibility with the meaning of cover</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. killing verbs:</strong></td>
<td>High</td>
</tr>
<tr>
<td><em>dušit</em>&lt;sup&gt;IMP&lt;/sup&gt; (to strangle)</td>
<td>High</td>
</tr>
<tr>
<td><em>mučit</em>&lt;sup&gt;IMP&lt;/sup&gt; (to torture)</td>
<td>Low</td>
</tr>
<tr>
<td><strong>2. hurt verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>rezat</em>&lt;sup&gt;IMP&lt;/sup&gt; (to cut)</td>
<td>Low</td>
</tr>
<tr>
<td><strong>3. amuse verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>koldovat</em>&lt;sup&gt;IMP&lt;/sup&gt; (to enchant)</td>
<td>Low</td>
</tr>
<tr>
<td><strong>4. learn verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>citat</em>&lt;sup&gt;IMP&lt;/sup&gt; (to read)</td>
<td>Low</td>
</tr>
<tr>
<td><strong>5. wipe verbs:</strong></td>
<td>Low</td>
</tr>
<tr>
<td><em>stirat</em>&lt;sup&gt;IMP&lt;/sup&gt; (to wash)</td>
<td>Low</td>
</tr>
</tbody>
</table>

Finally, some damage verbs can be derived out of 'empty-based' inputs. Such is the case of *zastrelit*<sup>PRF</sup> (to kill by shooting) and *zasmejat*<sup>PRF</sup> (to ridicule) in (25). The verb *strelit*<sup>PRF</sup> is archaic in modern Russian, though imperfective activity *streljat*<sup>IMP</sup> (to shoot) and a perfective semelfactive *strelnut*<sup>PRF</sup> (to fire one shot) are available in the lexicon. A verb *smejat*<sup>PRF</sup> is not used in the lexicon, though there exists the imperfective *smejatsja*<sup>IMP</sup> (to laugh) in Russian.

    Dantes ------ at Pushkin

b. Dantes *zastrelil*<sup>PRF</sup> Puškina
    Dantes ZA-shot Pushkin
    'Dantes killed Pushkin by shooting him.'

c. *Bill smejal Heraldo.*
    Bill -------- Heraldo
d. Bill zasmejal\textsuperscript{PRF} Heraldo.

Bill ZA-laughed Heraldo

'Bill ridiculed Heraldo.'

Obviously, the empty-based input verbs cannot be compared to their ZA-prefixed outputs in terms of lexical meaning and argument structure, since they lack a coherent lexical meaning of their own.

4.2.4 The Get ZA-Prefixed Verbs

A small group of resultant ZA-prefixed verbs express a meaning of taking possession over some entity. Some examples of get verbs are given in (26)-(28) below.

(26) Rimljane zavoevali\textsuperscript{PRF} gottov.

Romans ZA-fought Goths

'Romans conquered the Goths.'

(27) Soldaty zaxvatili\textsuperscript{PRF} vragov v plen.

Soldiers ZA-caught enemies in captivity

'Soldiers captured their enemies.'

(28) Arkadij zarabotal\textsuperscript{PRF} mnogo deneg v etom godu.

Arkadij ZA-worked lots of money in this year

'Arkadij earned lots of money this year.'

An entity that is taken over can be a spatial location, as in (26), where Goths indirectly refers to the territory, controlled by the Goths. It can also be people, such as enemies in (27), or a physical entity, such as money in (28). Additional examples of get verbs are zavladet\textsuperscript{PRF} (to take possession of), zarezervirovat\textsuperscript{PRF} (to reserve, book), zabronirovat\textsuperscript{PRF} (to book), zaslužit\textsuperscript{PRF} (to earn), zapolučit\textsuperscript{PRF} (to obtain). Some get verbs occur with an optional instrument argument, which usually describes a manner in which taking possession of a given entity took place, such as obman (deception) in Ivan obmanom zavadel\textsuperscript{PRF} zemljoj (Ivan took possession of the land.
by deception). The *get* verbs seem to be transitive. Their intransitivization by the reflexive particle –*sja* either fails to apply or changes their lexical meanings, as in the case of *zarabotat’* _prf_ (to earn) – *zarabotat'sja* _prf_ (to spend too much time working). The intersection of the lexical entries of the *get* verbs provides the following model of control.

**The Model of Control for the resultant damage ZA-prefix verbs:**

<table>
<thead>
<tr>
<th>Transitive verbs</th>
<th>X</th>
<th>ZA-VERB</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case</strong></td>
<td>nominative</td>
<td></td>
<td>accusative</td>
</tr>
<tr>
<td><strong>Syntactic Position</strong></td>
<td>subject</td>
<td></td>
<td>direct object</td>
</tr>
<tr>
<td><strong>Thematic Role</strong></td>
<td>Recipient</td>
<td></td>
<td>Theme</td>
</tr>
</tbody>
</table>

The transitive *get* verbs take two obligatory participants – a recipient that occupies a subject position and acquires nominative case; and a theme argument that occupies a direct object position and is assigned accusative case. An optional instrument argument, when explicitly present, takes the indirect object position and acquires the instrumental case. The *get* ZA-prefix verbs have the following interpretation structure.

**Interpretation Structure of the Resultant Get Cluster Meaning of ZA-**

A person X takes possession over some entity Y (land, property, people, etc.) in a manner V, so that the extent of possession of X over Y is equal to or above some conventional norm.

The diagnostic test for the *get* verbs relies on paraphrasing them with *perejti vo vladenie* (to come into possession) for inanimate entities and locations and *popast’ vo vlast’* (to come under the influence / to become overpowered) for animate entities.
(29) a. Ivan zabroniroval PRF nomer.
   Ivan ZA-booked room
   'Ivan booked the room [in the hotel].'

   b. Nomer peresel PRF vo vladenije Ivana.
   Room came in possession of John
   'The room came into possession of Ivan.'

(30) a. Harry zaxvatil PRF Draco v plen.
   Harry ZA-caught Draco in captivity
   'Harry took Draco as his prisoner.'

   b. Draco popal PRF pod vlast' Harry.
   Draco fell under power of Harry
   'Harry was overpowered by Harry.'

As for the input verbs for get verbs, they come from different thematic classes. The main input thematic classes for get are verbs of changing possession (Levin 1993); namely, the obtain verbs, such as bronirovat' IMP (to book), reservirovat' IMP (to reserve), polučit' PRF (to obtain). Some other input verbs that acquire get meaning with ZA- are čitat' IMP (to read) and voevat' IMP (to wage war), which are shifted into začitat' PRF (to borrow and fail to return) and zavoevat' PRF (to capture), respectively. The obtain verbs are most compatible with the lexical meaning of the get ZA-prefixed verbs, while other types of input verbs undergo more apparent shifts in their lexical meanings. The attempt to classify the input verbs for get with respect to their lexical class and compatibility with the meaning of get provides the following picture in the table 4.3.
To sum up, the resultant ZA-prefixed verbs in Russian are subdivided into four classes of verbs: accumulative, cover, damage and get verbs. Such division depends on the type of a change that a theme undergoes in the course of an event. A theme of an accumulative ZA-prefixed verb undergoes a change with respect to one of its physical properties. A theme of a cover verb is being covered or filled in the course of an event, while a theme of a damage verb is physically damaged or otherwise negatively affected. A theme of a get verb changes possession in the course of a given event. I do not exclude a possibility of proposing a more fine-grained subdivision within the four classes of resultant verbs. Zaliznjak 1995, for instance, distinguishes between COVER and FILL subtypes of the cover meaning. In the first case, the theme is two-dimensional surface, while in the second case the theme is a three-dimensional container. The DAMAGE verbs are also divided into KILL, ANNIHILATE, REDUCE and EXCESS subclasses in Zaliznjak 1995 classification, with each class corresponding to a different type or extent of damage, inflicted upon a theme argument. Another important issue is whether all resultant ZA-prefixed verbs in Russian fall under the four-class classification, proposed in section 4.2. For instance, both Janda 1986 and Zaliznjak 1995 describe an additional sub-class FIX that consists of ZA-prefixed verbs, denoting a relocation of some physical or abstract object into some domain. I believe that many verbs in the FIX category, such as zarytsja PRF (to dig into), zapisat’ PRF (to write down), zaprotokoliravat’ PRF (to record <court

<table>
<thead>
<tr>
<th>Natural Thematic Class</th>
<th>Compatibility with the meaning of get</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. obtain verbs:</td>
<td>High</td>
</tr>
<tr>
<td>bronirovat’ IMP</td>
<td></td>
</tr>
<tr>
<td>reservirovat’ IMP</td>
<td></td>
</tr>
<tr>
<td>2. possession verbs:</td>
<td>Low</td>
</tr>
<tr>
<td>vladet’ (to own)</td>
<td></td>
</tr>
<tr>
<td>3. other lexical verbs:</td>
<td>Low</td>
</tr>
<tr>
<td>čitat’ IMP</td>
<td></td>
</tr>
<tr>
<td>voavat’ IMP</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.3
A Partial Classification of the Input Verbs for the Get ZA-Prefixed Verbs
hearing>), zaregistrirovat’PRF (to register), zazubrit’PRF (to memorize) actually express the spatial meaning of ZA-: relocation into a goal area (which may be an abstract location, such as memory in to memorize). There are, however, some examples of FIX, such as zanumerovat’PRF stranizy (to number the pages) that may prove to be a sort of exception or a borderline case. Thus, the proposed division of the resultant ZA-prefixed verbs takes into account the most prominent meanings, such as cover and damage, which can be independently argued for on the basis of the distinctive grammatical modification tests. Having said that, I allow for a possibility that some marginal groups of the resultant ZA-prefixed verbs with unique sub-meanings have been left out of this analysis. For instance, two following verbs, zakupit’PRF (to buy a lot of) or zagotovit’PRF (to prepare a lot of), seem to measure a change in the quantity of their theme arguments, rather than their physical properties (while Paillard 1995 also ascribes the in advance interpretation to these verbs).

The input verbs for the aforementioned classes of resultant verbs belong to various thematic classes in Russian, which display different levels of compatibility with their ZA-prefixed outputs. Each subclass of the resultant verbs has a corresponding thematic class (or classes) of input verbs that show a high compatibility with the lexical meaning of the output forms. This compatibility is especially clear in the case of the accumulative verbs, where the input change of state verbs express a gradual change in some property of the theme, synonymous with the meanings of their ZA-prefixed counterparts. The butter and fill verbs show a high degree of compatibility with their cover ZA-prefixed outputs; killing and hurt verbs are highly compatible with the damage verbs; while obtain verbs are lexically similar to their get outputs. I shall call those classes of input verbs that display a high similarity with their outputs with respect to their lexical meaning and argument structure the prototypical input classes. The prototypical input class for the accumulative verbs is the change of state verbs, which also seems to be the only input category, available for the accumulative verbs. Other subclasses of resultant ZA-prefixed verbs – cover, damage and get – occur with additional non-prototypical input verbs that have lexical meanings, distinct from the meanings of their ZA-prefixed outputs. I provide a more detailed comparison between the input verbs and their resultant ZA-prefixed forms with respect to their lexical meanings in the following comparison section 4.3. As in the previous chapter III, I shall check whether any aspecual shifts occur in the process of deriving the resultant ZA-prefixed verbs from their input counterparts.
4.3 The Comparison: The Resultant ZA-Prefixed Verbs vs. their Inputs

The previous section provided an overview of the four major subclasses of the resultant ZA-prefixed verbs, as well as their input forms. This section presents a comparison between the input and the output forms for each of the four subclasses with respect to aspectual shifts in lexical class and shifts in lexical meaning and argument structure. I also discuss some properties of theme arguments in the aforementioned classes of resultant verbs. The overall findings, obtained in the course of the following discussion, will serve as the basis for a formal analysis of the resultant ZA-prefixed verbs and the resultant prefix ZA- in section 4.4.

4.3.1 Aspectual Shifts in the Input Verbs

As in the case of the spatial ZA-prefixed verbs, I analyze the resultant verbs and their input counterparts with respect to their Vendlerian aspectual class and check whether any aspectual shifts occur. Naturally, the 'empty-based' input verbs are excluded from such comparison, though the output form itself can be analyzed in terms of its Vendler class. I provide a separate analysis for each subclass of resultant verbs, mentioned in section 4.2.

4.3.1.1 Aspectual Shifts in the Input Verbs for Accumulative Resultant Verbs

As in the case of the spatial ZA-prefixed verbs, I analyze the resultant verbs and their input counterparts with respect to their Vendlerian aspectual class and check whether any aspectual shifts occur. Naturally, the 'empty-based' input verbs are excluded from such comparison, though the output form itself can be analyzed in terms of its Vendler class. I provide a separate analysis for each subclass of resultant verbs, mentioned in section 4.2.

The change of state input verbs for the accumulative resultant verbs in (31-33a) provide a problem for the Vendlerian classification of verbs. At the first sight, they behave as imperfective accomplishments, passing the incremental modification test with gradually. Note that the output accumulative verbs in (31-33b) are also compatible with incremental modification. Thus, it seems that both output accumulative verbs and their inputs are accomplishment class verbs.

(31) a. Varen'e postepenno gustelo IMP celyj čas25.
   Jam gradually thickened entire hour
   'A/the jam gradually thickened for an hour.'

25 For some reason, the time modifier v techenie X time (during X time) sounds more natural than X time modifiers with examples (31a)-(32a). The during X time modifier is, however, compatible with both imperfective inputs in (31a)-(32a) and perfective ZA-prefix output in (31b)-(32b). Hence, I decided to use the standard X time (for X time) modification with (31a)-(32a).
b. Za čas varen'е postepenno zagustelo \(^{\text{PRF}}\).

In hour jam gradually ZA-thickened
'The jam gradually thickened in an hour.'

(32) a. Derevo postepenno soxlo \(^{\text{IMP}}\) ves' god.

Tree gradually dried all year
'A/the tree gradually dried for a year.'

b. Za god derevo postepenno zasoxlo \(^{\text{PRF}}\).

In year tree gradually ZA-dried
'The tree gradually dried up in a year.'

(33) a. Gvozd' v stene postepenno ržavel \(^{\text{IMP}}\) mnogo let.

Nail in wall gradually became rusty many years
'A/the nail in the wall was gradually becoming rusty for many years.'

b. Gvozd' v stene postepenno zaržavel \(^{\text{PRF}}\) za mnogo let.

Nail in wall gradually ZA-became rusty in many years
'The nail in the wall gradually became all rusty in many years.'

On the other hand, the accomplishment analysis of the imperfective change of state verbs presupposes that they consist of two subevents – an activity event and an incremental event of change that structures the progress of activity with respect to its incremental chain. Now, take the change of state verb ržavel\(^{\text{IMP}}\) (to become rusty) in (33a). Under an accomplishment analysis, this verb needs to be decomposed into the BECOME RUSTY event of change and BE RUSTY activity event, as in (34).

\[
\lambda y. \lambda e. \exists e_1, e_2 [ e = ^e (e_1 \cup e_2) \land \text{BE RUSTY}(e_1) \land \text{Theme}(e_1) = y \\
\land \text{BECOME RUSTY}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))]
\]

The problem with (34) is that BE RUSTY is not an activity, but rather a state, which violates accomplishment analysis requirements. In particular, it is unclear how the incremental event of change can assign any structure of development to a state of being rusty. It looks like to become rusty denotes a pure change in the extent of
rustiness of its theme argument along some measure scale. Thus, the change of state verbs in (31a)-(33a) cannot be captured by a standard accomplishment analysis.

I assume that the change of state verbs denote scalar activities – a new subtype of in Russian (cf. an analogous proposal in Součkova 2004 with regard to similar change of state verbs in Czech). As noted in Rothstein 2007, activity events are formed by the means of the S-summing operation. The S-summing operation takes two temporally adjacent instances of an activity event and sums them into a single more extended activity event of the same kind. Since activities are homogeneous down to minimal activity events, the S-summing operation is used to form an extended activity event from the singular sum of such minimal activity instances. The S-summing operation in the verbal domain is formally defined as follow [adopted from Rothstein 2007].

(35) The S-Summing Operation in the Verbal Domain

\[ \forall e, e' : P(e) \land P(e') \land R(e,e') : S\text{-sum}(e,e') \rightarrow P(\bar{S}(e\cup e')) \]

For any two events e and e' in the denotation P which stand in the R relation, S-sum applied to e and e' yields a singular event formed out of the sum of e and e' and which is also in the denotation of P.

In the case of activity events, R stands for a temporal adjacency relation, so that \( \tau(e) \) and \( \tau(e') \) overlap (where \( \tau \) is the function from events to their temporal traces, as defined in Krifka 1998). So if the S-summing operation applies to the two temporally adjacent events of walking: walk from 09:00 to 10:00 and walk from 10:00 to 11:00, which overlap at the temporal juncture point of 10:00, it yields a single activity event of walking from 09:00 to 11:00. Naturally, due to the homomorphism between times and events, the temporal traces of the relevant input events are also summed together, so if each individual event last an hour, their S-sum has a temporal duration of two hours. In contrast with the standard activities, the scalar activities establish the homomorphism relation not only between parts of event and their running times, but also between parts of event and degrees on some relevant totally ordered measure scale. In other words, if X is a scalar activity verb in Russian, than it is associated with some relevant scale, so that there is a one-to-one homomorphous mapping function \( N(e) \) from parts of a given event to degrees on that scale. In such case, when the S-summing operation applies to two temporally adjacent scalar activity events, it
sums not only their temporal duration, but also their corresponding degrees of change on the relevant measure scale. Suppose that there were two following temporally adjacent events: an event of the nail in the wall becoming 20 degrees rusty from 2006 to 2007 and an event of the nail in the wall becoming 20 degrees rusty from 2007 to 2008. Then, the S-summing operation produces a single event of the nail becoming 40 degrees rusty. The scalar activities, thus, express a triple homomorphism relation between an event, its running time and the degrees on the relevant scale. One of the implications of such analysis is the longer the temporal duration of a scalar activity event is, the higher its degree of X-property will be. I propose, then, to define scalar activities as BECOME X-er events, where X stands for the relevant measured property. In such case, the scalar activity \( r\text{ravert}^{\text{IMP}} \) (to become rusty) shall be analyzed as follows.

\[
(36) \quad \lambda y \exists e [\text{BECOME RUSTIER}(e) \land \text{Theme}(e_1) = y]
\]

It is important to mention that the scalar activities are atelic, meaning that the measure scales they are associated with are open scales, having no inherent maximal points that may delimit the BECOME X-er process. Their \( \text{za} \)-prefixed counterparts, on the other hand, impose a certain measure restriction on the extent of change in their themes, as will be shown later on. Thus, I assume that \textit{change of state} input verbs are best analyzed as scalar activities, while their \textit{accumulative} \( \text{za} \)-prefixed counterparts denote accomplishment verbs. If this is the case, then the prefix \( \text{za} \)- acts as an aspectual shift-operator, deriving \textit{resultant accumulative} accomplishments out of scalar activity verbs.

### 4.3.1.2 Aspectual Shifts in the Input Verbs for Cover Resultant Verbs

As we have seen in 4.2.2, the input verbs for the \textit{cover} verbs come from various lexical classes. In terms of the aspectual Vendlerian classification, the input verbs for the \textit{cover} \( \text{za} \)-prefixed verbs include both accomplishments in (37a)-(38a) and activities in (39a)-(40a), as determined by the \textit{gradually} modification test. The \textit{cover} verbs in (37-40b) behave as accomplishments with respect to the temporal and incremental modification tests.
(37) a. Ivan postepenno asfaltiroval IMP dorogu ves' den'.
Ivan gradually asphalted road all day
'Ivan gradually asphalted a/the road for the whole day.'
b. Za den' Ivan postepenno zaasfaltiroval PRF dorogu.
In day Ivan gradually ZA-asphalted road
'Ivan gradually asphalted the road in a day.'

(38) a. Ivan postepenno stroil IMP dom ves' god.
Ivan gradually built house all year
'Ivan gradually built a/the house for a year.'
b. Za god Ivan postepenno zastroil PRF pustyr' domami.
In year Ivan gradually ZA-built area with houses
'Ivan gradually built the empty area up with houses in a year.'

(39) a. Dani *postepenno čas lil IMP vodu s balkona.
Dani gradually hour poured water from balcony
'Dani poured water from the balcony for an hour.'
b. Za čas Dani postepenno zalil PRF kvartiru sosedej.
In hour Dani gradually ZA-poured apartment of neighbors.
'Dani gradually flooded the neighbors' apartment by pouring water.'

(40) a. Ivan *postepenno bryzgal IMP krasku na stol desjat' minut.
Ivan gradually splattered paint on table ten minutes
'Ivan splattered paint on the table for ten minutes.'
b. Ivan postepenno zabryzgal PRF stol kraskoj za desjat' minut'.
Ivan gradually ZA-splattered table with paint in ten minutes
'Ivan gradually splattered the table with paint in ten minutes.'

Thus, some input verbs for cover, such as lit' IMP (to pour) in (39a) and bryzgat' IMP (to splatter) in (40a), are activities that undergo an aspectual shift into the cover accomplishment verbs. On the other hand, the imperfective asfaltirovat' IMP (to asphalt) and stroit' IMP (to build) in (37a)-(38a) are accomplishment verbs and seem not to undergo an aspectual shift in their lexical class. In terms of the shifts in lexical
meaning, the ZA-prefixed verbs in (38b)-(40b) seem to select different theme arguments as a result of applying ZA-. The lexical meaning shifts will be discussed separately in the following subsections.

4.3.1.3 Aspectual Shifts in the Input Verbs for Damage Resultant Verbs

The input verbs for the damage class are mainly activities, as evident from the incremental and temporal modification tests in (41a)-(42a). An example of an accomplishment input verb that is *citati*’IMP (to read) in (43a). The damage ZA-prefixed verbs in (41b)-(43b) behave as accomplishments with respect to the incremental and temporal modification.

(41) a. Tom čas *postepenno mučil* IMP košku Murku.
    Tom hour gradually tortured cat Murka
    'Tom tortured Murka the cat for an hour.'

    b. Za čas Tom postepenno zamučil PRF košku Murku.
    In hour Tom gradually ZA-tortured cat Murka
    'Tom gradually tortured Murka the cat in an hour.'

(42) a. Babuška *postepenno kormila* IMP rebenka konfetami čas.
    Grandmother gradually fed child with candies hour
    'The grandmother fed the child with candies for an hour.'

    b. Babuška postepenno zakormila PRF rebenka konfetami za leto.
    Grandmother gradually ZA-fed child with candies in summer
    'The grandmother gradually overfed the child with candies this summer.'

(43) a. Ivan postepenno čital IMP knigu.
    Ivan gradually read book
    'Ivan gradually read a/the book.'

    b. Ivan postepenno začital PRF knigu.
    Ivan gradually ZA-read book
    'Ivan gradually damaged the book by reading it.'
4.3.1.4 Aspectual Shifts in the Input Verbs for Get Resultant Verbs

In contrast to the previous classes, it seems that *get* verbs can also be formed from state verbs, in addition to activities and accomplishments. For example, *zavladet*_{PRF} (to take possession of) is formed from a state verb *vladet*_{IMP} (to own). A number of tests distinguish between activity and state verbs (Vendler, 1967; Dowty, 1979, Rothstein, 2004) and some of these tests can be applied to the Russian data as well. In particular, a state verb *vladet*_{IMP} is incompatible with *deliberately* and *forced to* constructions, while an activity *voevat*_{IMP} (to fight, to go to war) occurs with them, as shown in (44).

(44) a. * Ivan  namerenno  vladel  \text{IMP}  zemljoj.
    Ivan deliberately owned land

b. ?? Dani  zastavil  Ivana  vladet  \text{IMP}  zemljoj.
   Dani forced Ivan to own land

c. Rimljane  namerenno  voevali  \text{IMP}  s  Gallami.
   Romans deliberately fought with Gauls
   'Romans deliberately fought with Gauls.'

d. Rimljane  zastavili  narod  voevat  \text{IMP}  s  Gallami.
   Romans forced people to fight with Gauls
   'Romans forced the people to fight with Gauls.'

The output Class III verbs can be derived from both state and activity verbs, as shown in (45a)-(45c). The ZA-prefixed output verbs seem to fit an accomplishment pattern, based on the results of incremental and temporal diagnostic tests (examples 45b-45d).

(45) a. Ivan *postepенно  vladel  \text{IMP}  zemljoj.
   Ivan gradually owned land
   'Ivan owned the land.'

b. Za god  Ivan  postepенно  zavladel  \text{PRF}  zemljoj.
   In year Ivan gradually ZA-owned land
   'In a year, Ivan gradually took possession over all the land.'
c. Rimljane dolgo postepenno voevali IMP s Gallami.
Romans long gradually fought with Gauls
'Romans fought with Gauls for a long time.'

d. Rimljane postepenno zavoevali PRF Gallov za paru desjatkov let.
Romans gradually ZA-fought Gauls in couple tens of years
'Romans gradually conquered the Gauls in a few dozen years.'

Thus, the input verbs for the get ZA-prefixed verbs are Vendler activities and states. To sum up, the input verbs for the resultant meaning of ZA- consist of a number of aspectual types of events, such as activities, accomplishments and, in some exceptional cases, states. The output verbs, on the other hand, are accomplishment events. Thus, it seems that the resultant ZA- can serve as an aspectual shift operator, deriving activities and states into resultant ZA-prefixed accomplishments. The question that rises at this point is what happens when the input verbs are imperfective accomplishments. In the previous section, we saw that the spatial prefix ZA- derived a new type of accomplishments – locative accomplishments – out of standard lexical imperfective accomplishments in Russian. Are the resultant ZA-derived accomplishments a new subtype of accomplishments as well, distinct from their lexical accomplishment inputs? I shall answer this question in the following section 4.3.2, which deals with the shifts in lexical meaning from input to output forms. The findings in the current section 4.3.1 provide us with the following classification of Vendlerian aspectual classes of the output resultant ZA-prefixed verbs and their inputs in table 4.4.
Table 4.4

The resultant ZA-prefixed verbs and their inputs with respect to Vendlerian Class

<table>
<thead>
<tr>
<th>Vendlerian Classification Analysis</th>
<th>Input Counterpart</th>
<th>Perfective ZA-Prefixed Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulative Verbs</td>
<td>Scalar Activity</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Cover Verbs</td>
<td>Activity /</td>
<td>Accomplishment</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td></td>
</tr>
<tr>
<td>Damage Verbs</td>
<td>Activity /</td>
<td>Accomplishment*</td>
</tr>
<tr>
<td></td>
<td>Accomplishment*</td>
<td></td>
</tr>
<tr>
<td>Get Verbs</td>
<td>State* / Activity</td>
<td>Accomplishment</td>
</tr>
</tbody>
</table>

* a limited number of cases.

As can be seen from table 4.4, the output resultant ZA-prefixed verbs generally belong to a lexical class of accomplishments. The input verbs for an accumulative subclass of resultant verbs are scalar activities. The inputs of cover and damage subclasses are mainly activity verbs, though some imperfective accomplishments are also allowed. The input verbs for get class are usually activities, though there are few exceptional cases, where states occur as inputs of get. Thus, the findings in table 4.4 seem to indicate that the resultant prefix ZA- derives four different subtypes of resultant accomplishments out of input verbs which are mostly activities. In order to understand what it means to be a resultative ZA-prefixed accomplishment in the verbal lexicon of Russian, we need to address a second type of shifts, associated with applying the resultant prefix ZA-: the shifts in the lexical meaning and/or argument structure of an input verb. Such shifts are discussed in the following section 4.3.2.
4.3.2 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs

In this section, I take a look on possible shifts in the lexical meaning and argument structure of the input verbs for each of the four resultant subclasses. Since the theme argument is an affected entity in the course of resultant events, I shall also discuss some properties of theme arguments and the extent to which they are affected.

4.3.2.1 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs for Accumulative Resultant Verbs

As mentioned earlier, accumulative verbs take a prototypical class of change of state verbs, as their inputs. The input verbs for accumulative subclass are intransitive and transitive scalar activity, denoting a change in the theme arguments with respect to some physical property. The input verbs seem to have the same argument structure as their accumulative ZA-prefixed outputs. The intransitive input verbs become intransitive accumulative outputs, while the transitive inputs become transitive accumulative forms. Some of the transitive forms can be later intransitivized by the reflexive -sja, but this is a secondary derivation, which does not affect the fact that intransitive ZA-prefixed verbs are derived from intransitive inputs, while the transitive ones are derived from transitive inputs. Thus, there seems to be no shift in the lexical argument structure from the input change of state verbs to their accumulative outputs, as illustrated in (46)-(47).

(46) a. Varen'je gustelo IMP.

    Jam thickened
    'A/the jam thickened.'

    b. Varen'je zagustelo PRF.

    Jam ZA-thickened
    'The jam thickened.'

(47) a. Ivan solil IMP ogurzy.

    Ivan salted cucumbers
    'Ivan salted (the) cucumbers.'

    b. Ivan zasolil PRF ogurzy.

    Ivan ZA-salted cucumbers
    'Ivan salted the cucumbers.'
The next issue is the changes in the lexical meaning from the input to output forms. At the first sight, it seems that the input change of state verbs express the same lexical meaning as their ZA-prefixed outputs. But is it really the case? As mentioned earlier, the prefix ZA- in accumulative ZA-prefixed verbs seems to set a requirement that the theme argument is affected to an extent, which is equal to or above some default value with respect to some property of the theme. So if a theme is a jam that undergoes a process of thickening, then its value on the scale of thickness will be equal to or above the default for thick jams at the culmination of the thickening event. Assuming that a default value is not necessarily the maximal one, the extent of affectedness of a theme argument in accumulative verbs ranges between the default value and the top of the scale. Thus, the accumulative ZA-prefixed verbs occur with various degree modifiers, with a preference for the ones that denote a significant or maximal extent of change in the theme argument.

(48) a. Varen'e ? čut'-čut' / napolovinu / sil'no / sovsem zagustelo PRF.
   Jam a little bit on half strongly totally ZA-thickened
   'The jam thickened (?a little bit) / half way / significantly / completely.'

b. Gvozd' ? čut'-čut' / napolovinu / sil'no / sovsem zaržavel PRF.
   Nail a little bit half way strongly totally ZA-became rusty
   'The nail became (?a little bit) / half way / significantly / completely rusty.'

Examples (48a)-(48b) show that the expressions that denote a complete or significant degree of change – completely, significantly and half way – are more natural than the expressions of a lesser extent of change, such as a little bit. The latter, however, is also acceptable as a modifier of the accumulative verbs in (48). The point is that the extent of affectedness of a theme argument of an accumulative verb reaches a norm on the relevant scale of measure or surpasses it. So the jam in (49a) reaches what is considered a standard value for jams on the scale of thickness, and the nail in (48b) is sufficiently affected to be considered rusty at the culmination of becoming rusty event.

Interestingly enough, the input change of state verbs do not occur with any measure expressions that delimit the extent of affectedness of their themes (E.g.,
* Varen'e čut'-čut'/napolovinu/sil'no gustelo\(^\text{IMP}\) - The jam thickened a little bit / half way / significantly). One reason for that might be that the imperfective verb \textit{gustet}^{\text{IMP}} (to thicken) denotes an ongoing thickening process, and it is impossible to measure an extent of thickness of its theme before this process is completed. However, as argued in chapter I, the semantics of imperfective aspect in Russian allows perfect and habitual readings of imperfective verbs. Thus, the imperfective \textit{gustet'}^{\text{IMP}} (to thicken) should in principle acquire a complete or habitual interpretation, compatible with an explicit measure of degree of affectedness of its theme. Yet the given verb (as well as other change of state verbs) seem to block such complete and habitual interpretations. I do not have an explanation for such behavior of change of state verbs at this point, though I believe it may have to do with their special lexical aspectual status of scalar activities. I shall leave this issue open for a further research on the interaction of grammatical and lexical aspects in Russian.

The equal to or above the default requirement, imposed by the prefix \textit{ZA}- on the extent of affectedness of a theme argument in the \textit{ZA}-prefixed accumulative verbs, becomes visible in contrast with the prefix \textit{PO}-, which does not require the theme to reach a default value on the relevant scale (see analysis of the prefix \textit{PO}- with the change of state verbs in Czech in Součkova 2004).

(49) a. Varen'je pogustelo\(^\text{PRF}\), no ego ešče trudno nazvat' gustym.
   Jam \textit{PO}-thickened but it yet hard to call thick
   'The jam thickened a bit, but it is hard to define it as thick yet.'

b. * Varen'je zagustelo\(^\text{PRF}\), no ego ešče trudno nazvat' gustym.
   Jam \textit{ZA}-thickened but it yet hard to call thick

(50) a. Gvozd' poržavel\(^\text{PRF}\), no ego ešče trudno nazvat' ržavym.
   Nail \textit{PO}-became rusty but it yet hard to call rusty
   'The nail became a bit rusty, but it is hard to define it as rusty yet.'

b. * Gvozd' zaržavel\(^\text{PRF}\), no ego ešče trudno nazvat' ržavym.
   Nail \textit{ZA}-became rusty but it yet hard to call rusty

As we can see in (49a)-(50a), the \textit{PO}-prefixed variations, derived from the \textit{change of state} input verbs, are acceptable in the situations, in which the extent of
affectedness of a theme argument is less than default, while the ZA-prefixed
accumulative verbs in (49b)-(50b) are infelicitous in such contexts.

The properties of an incremental theme also play a certain role in determining the
range of its affectedness, as noted in Janda 1986. Typical incremental themes of
accumulative ZA-prefixed accomplishments are physical objects, capable of
undergoing a gradable change with respect to some physical property. Thus, jam
undergoes a change in its degree of thickness, a river – in its degree of density (from a
liquid water to a solid ice), a nail – in its degree of rustiness. Having said that,
accumulative resultant ZA-prefixed accomplishment are not restricted to taking
physical objects only as their themes, but can also be an animate entity, as in the case
of Ivan zasnul PRF (Ivan fell asleep). Some accumulate verbs, such as zamerznut' PRF
(to freeze), allow both animate and inanimate entities as their themes. In such case,
there seems to be a difference with respect to the extent of affectedness between
animate and inanimate theme. For instance, zamerznut' PRF (to freeze) allows a lesser
extent of affectedness with the animate theme Ivan in Ivan čut'-čut' zamerz PRF (Ivan
froze slightly), but not with an inanimate river in * Reka čut'-čut' zamerzla PRF (The
river froze up a little). In the latter example, there is a strong implication that the river
froze up completely, reaching the maximum value on the scale of frozen things. It is
obvious that a theme argument of an accumulate verb must allow a certain degree of
change with respect to some property or dimension, as in, for instance, gips
zakamenel PRF (the plaster became hard as a stone). Choosing a stone as a theme in the
same situation leads to an infelicitous sentence * kamen' zakamenel, since a stone by
definition has a fixed value, which is the maximal value on the relevant scale of stone-
hard things, and hence cannot undergo any further change in its density.

To sum up, the accumulate resultant ZA-prefixed verbs maintain the same
lexical argument structure as their input counterparts. In terms of the lexical meaning,
however, the prefix ZA- imposes the restriction on the extent of affectedness of a
theme argument, so that the degree of change in the theme argument with respect to to
some property is equal to or above some predetermined default value on the
 corresponding measure scale. In other words, the prefix ZA- yields a subset of change
of state events in which the extent of change is considered normative or above
normative. Since the imperfective change of state scalar activity verbs that serve as
inputs for accumulate verbs express a gradual scalar change in their theme
arguments, the semantic effect of $ZA$- is not directly visible. It becomes apparent, though, in the comparison with the prefix $PO$- (examples 49-50) that has a different restriction on the extent of change of a theme argument.

4.3.2.2 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs for Cover Resultant Verbs

The situation with the input verbs of cover $ZA$-prefixed verbs with respect to the shifts in lexical meaning and argument structure is more complicated. The cover verbs have prototypical categories of input verbs, which are butter and fill verbs, but also take other types of lexical verbs as an input for $ZA$-. The prototypical input verbs maintain the same lexical argument structure as their $ZA$-prefixed outputs, as illustrated in (51)-(52).

(51) a. Ivan asfaltiroval $IMP$ dorogu.
    Ivan asphalted road
    'Ivan asphalted a/the road.'
    b. Ivan zaasfaltiroval $PRF$ dorogu.
    Ivan ZA-asphalted road
    'Ivan asphalted the road.'

(52) a. Ivan cementiroval $IMP$ breš v stene.
    Ivan cemented gap in wall
    'Ivan cemented a/the gap in the wall.'
    b. Ivan zacementiroval $PRF$ breš v stene.
    Ivan ZA-cemented gap in wall
    'Ivan cemented the gap in the wall.'

The input verbs, which are generally transitive, are shifted into transitive cover $ZA$-prefixed verbs in the course of $ZA$-derivation. Some of the output cover forms can later be intransitivized by the reflexive -$sja$. In regard to the lexical meaning, the prefix $ZA$- again seems to act as a pure perfectivizer with the butter and fill input verbs. Nonetheless, the prefix $ZA$- alters a lexical meaning of an input verb by
introducing its *equal or above the norm* requirement on the extent of affectedness of the theme. Consider the following examples in (53)-(54):

(53) a. Ivan asfaltirovalIMP dorogu, no bOl'saja čast' dorogi ostalos' nezatrongnutoj.

    Ivan asphaltered road but bigger part of road remained not touched
    'Ivan asphaltered a/the road, but most of the road remained unaffected.'

b. * Ivan zaasfaltirovalPRF dorogu, no bOl'saja čast' dorogi ostalos' nezatronnutoj.

    Ivan ZA-asphalted road but bigger part of road remained not touched

(54) a. Ivan cementirovalIMP dyru v stene, no bOl'saja čast' dyry ostalos' nezapolnennnoj.

    Ivan cemented hole in wall but bigger part of hole remained not filled
    'Ivan cemented a/the hole in the wall, but most of the hole remained unfilled.'

b. * Ivan zacementirovalPRF dyru v stene, no bOl'saja čast' dyry ostalos' nezapolnnennnoj.

    Ivan ZA-cemented hole in wall but bigger part of hole remained not filled

As mentioned in the Chapter I, the imperfective verbs in Russian can refer to complete events as well as the partial ones. Let's assume that the imperfective input verbs in (53a)-(54a) refer to complete events of *asphalting road* and *cementing the hole in the wall*, respectively. In such case, the difference between the input verbs in a-examples, and their *cover* ZA-prefixed outputs in b-examples, becomes apparent. The imperfective verbs do not impose any restriction on the extent of affectedness of their themes, and, hence, are compatible with contexts in which most of the theme is unaffected, as in (53a)-(54a). The ZA-prefixed verbs, however, are infelicitous in such contexts, as we can see from the ungrammaticality of (53b)-(54b).

What is, then, the default extent of affectedness for the theme arguments of *cover* verbs? The following examples in (55a)-(55c) indicate that the *cover* verbs are felicitous in a situation, where at least half of the object, denoted by a theme argument, is affected in the course of the corresponding *cover* event.

(55) a. Ivan * čut'-čut' / * nemnogo / napolovinu / polnost'ju zaasfaltirovalPRF dorogu.

    Ivan a little bit slightly half way entirely ZA-asphalted road
    'Ivan asphalted the road half the way / completely.'
b. Mark * čut'-čut' / * nemnogo / napolovinu / polnost'ju zastroyl ploščadku.
Mark a little bit slightly half way entirely ZA-built site
'Mark built the site up completely / half way.'
c. David * čut'-čut' / * nemnogo / napolovinu / polnost'ju zalil bak vodoj.
David a little bit slightly half way entirely ZA-poured tank with water
'David filled the tank completely / half the way with water.'

The cover verbs in (55) seem infelicitous with a little bit and slightly, but allow half way and completely extent modifiers. Thus, the default extent of change for the cover verbs seems to be the one in which at least half of a theme is affected.

The input verbs that do not belong to the prototypical categories of butter and fill verbs, display more visible shifts in their argument structure and lexical meaning in comparison to their ZA-prefixed outputs. Consider examples (56)-(57).

(56) a. Ivan sypal pesok (v jamu).
Ivan poured sand in hole
'Ivan poured sand (in a hole).' b. * Ivan sypal jamu (peskom).
Ivan poured hole with sand
c. Ivan zasypal jamu (peskom).
Ivan ZA-poured hole with sand
'Ivan filled the hole by pouring (sand).' (57) a. Ivan stroil dom.
Ivan built house
'Ivan built a/the house.' b. * Ivan stroil pustyrg.'
Ivan built empty area
c. Ivan zastroil pustyrg' (domami).
Ivan ZA-built empty area with houses
'Ivan built up the empty area (with houses).'
The imperfective *pour* verb *sypat* \(^{\text{IMP}}\) (to pour) in (56a) is compatible with the theme argument *sand*, denoting a substance that is poured, and with an optional goal argument *hole*. It cannot take the optional goal argument *hole* as its theme in (56b). The ZA-prefixed cover verb *zasypat* \(^{\text{PRF}}\) in (56c), on the other hand, takes *hole* as its theme argument and its lexical meaning is shifted into *fill by pouring*. The *sand* substance becomes an optional instrument argument of *zasypat* \(^{\text{PRF}}\), taking an indirect object position and acquiring instrumental case\(^{26}\). A similar shift occurs with the imperfective verb *stroit* \(^{\text{IMP}}\) (to build), which can take a *house* as its theme argument in (57a), but is disallowed with *empty area* in (57b). The ZA-prefixed counterpart *zastroit* \(^{\text{PRF}}\) (to build up) is, however, compatible with an *empty area* as its theme (and is bad with *house*). It also allows an optional instrument argument *houses*, which describes what entities were used to build up the empty area. If present, the instrument argument of *zastroit* \(^{\text{PRF}}\) takes an indirect object position and acquires instrumental case.

What actually happens with the *cover* verbs in (56)-(57) is that the prefix ZA- changes the lexical meaning of an input verb from denoting a process \(X\) into *to cover/ fill by the means of \(X\)*. Naturally, *butter* and *fill* verbs already express such meaning, so a shift in their lexical meanings is nearly invisible. The other input verbs, however, are forced to change their selectional restrictions with respect to an incremental theme. As mentioned earlier, a theme argument of a *cover* verb normally denotes a physical entity, which is a two-dimensional surface or a three-dimensional container. Thus, things that denote substances, like *sand* and *paint*, cannot serve as themes for *cover* verbs. The goal arguments of the input verbs, on the other hand, denote spatial locations, which can be covered or filled in the course of event. Thus, an optional goal argument of an input verb can fill the theme argument position of the *cover* ZA-prefixed output verb. The substance-denoting theme of the input verb, in its turn, can occupy an optional argument position of the *cover* output, such as *sand* in (57c).

Some *cover* verbs require explicit instrument arguments, as in the case of *throw* -based *cover* verbs in (58).

\(^{26}\) Note that the ZA-prefixed verbs, derived from *pour* verbs, such as *zasypat*’ , can take *sand* as its theme and *hole* as its goal argument, as in the case of *Ivan zasypal pesok v jamu* (Ivan poured all the sand into the hole). Thus, the ZA-preixed *pour*-based verbs alternate between spatial and cover meanings of ZA-, similarly to the *spray/load* verbs in English (Levin, 1993). Such alternation, however, is impossible for the imperfective input *pour* verbs that have a spatial meaning only.
(58) a. Ivan brosal\textsuperscript{IMP} kamni (v kolodec).
   Ivan threw stones in well
   'Ivan threw stones (in the well).'</b.

b. Ivan zabrosal\textsuperscript{PRF} kolodec kamnjami.
   Ivan ZA-threw well with stones
   'Ivan filled the well up by throwing stones.'

To sum up, the \textit{cover resultant} ZA-prefixed verbs show different levels of compatibility with their input counterparts with respect to lexical meaning and argument structure. The prototypical input verbs of \textit{butter} and \textit{fill} thematic classes maintain the same argument structure as their \textit{cover} outputs and express a similar lexical meaning. The only difference in lexical meaning in the case of these input verbs is that the prefix ZA- imposes restrictions on the extent of affectedness of a theme argument that are not entailed by the input \textit{butter} and \textit{fill} verbs. Other lexical classes of input verbs, such as \textit{pour} and \textit{load} verbs, undergo more visible changes in their lexical meaning and argument structure. Since their original lexical meaning $X$ is shifted into \textit{cover/fill by $X$}, they take a different theme argument that denotes a surface or container. For the input verbs that have an optional goal argument, such goal argument may serve as a theme of the derived \textit{cover ZA}-prefixed output. On the other hand, if an input verb has a theme argument, denoting a substance that is moved in the course of an event, such theme argument can take a position of an optional instrument argument of the \textit{cover} output.

\textbf{4.3.2.3 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs for Damage Resultant Verbs}

The \textit{damage} ZA-prefixed verbs, similarly to \textit{cover} verbs, have prototypical categories of input verbs, such as \textit{killing} and \textit{hurt} verbs, and can take other types of input verbs and coerce them into the \textit{damage} meaning. The ZA-prefixed verbs, derived from \textit{killing} and \textit{hurt} have the same argument structure and express a similar lexical meaning, as illustrated in (59)-(60).
(59) a. Ivan dušil$^{\text{IMP}}$ Toma.
   Ivan strangled Tom
   'Ivan strangled Tom.'

   b. Ivan zadušil$^{\text{PRF}}$ Toma.
   Ivan ZA-strangled Tom
   'Ivan strangled Tom.'

(60) a. Tom mučil$^{\text{IMP}}$ košku Murku.
   Tom tortured cat Murka
   'Tom tortured Murka the cat.'

   b. Tom zamučil$^{\text{PRF}}$ košku Murku.
   Tom ZA-tortured cat Murka
   'Tom tortured Murka the cat.'

The ZA-prefixed form, however, restricts an extent of affectedness of a theme argument, which is not the case for the input forms. Let's assume again that the imperfective forms in (61a)-(62a) denote complete events.

(61) a. Ivan dušil$^{\text{IMP}}$ Toma, no tot počti ne postradal.
   Ivan strangled Tom but him almost not hurt
   'Tom strangled Tom, but he was virtually unhurt.'

   b. * Tom zadušil$^{\text{PRF}}$ Toma, no tot počti ne postradal.
   Tom ZA-strangled Tom, but that almost not hurt

(62) a. Tom mučil$^{\text{IMP}}$ košku Murku, no ta počti ne postradal.
   Tom tortured cat Murka but her almost not hurt
   'Tom tortured Murka the cat, but it was virtually unhurt.'

   b. * Tom zamučil$^{\text{PRF}}$ košku Murku, no ta počti ne postradal.
   Tom ZA-tortured cat Murka but her almost not hurt

The input hurt verbs in (61a)-(62a) are compatible with a situation in which the individual, denoted by the theme argument was virtually unhurt, but their ZA-prefix outputs in (61b)-(62b) are infelicitous in such contexts. It seems that the prefix ZA-
requires an extent of damage, inflicted to the theme argument, to be relatively high, as corroborated by the following examples in (63a)-(63c).

(63) a. Ivan zamučil košku Murku (*do legkogo nedomoganiya) / do smerti.
   Ivan ZA-tortured cat Murka to slight indisposition to death
   'Ivan tortured Murka the cat to death.'

b. Vrači zalečili Davida (*do legkogo nedomoganiya) / do obmoroka / do smerti.
   Doctors ZA-healed David to slight indisposition to faint to death
   'The doctors caused David to faint / to die with all their healing.'

c. Robert začital knigu * čut'-čut' / do dyr.
   Robert ZA-read book a little bit to holes
   'Robert damaged the book by reading to the extent of having holes on the pages.'

The data in (63) indicate that the damage ZA-prefix verbs denote inflicting a relatively high degree of damage to their themes (both objects and individuals). As the result of torturing and excessive healing, the extent of damage to the health of Murka the cat and David in (63a)-(63b), respectively, is relatively high, with death as the maximal value on the scale of health damage. The book in (63c) is significantly damaged in the course of the reading event.

When the input verbs for damage class belong to a different category than killing and hurt verbs, the lexical shifts in their lexical meaning and argument structure become more apparent.

(64) a. Roditelji rugali rebenka.
   Parents reprimanded child
   'Parents reprimanded their child.'

b. Roditelji zarugali rebenka.
   Parents ZA-reprimanded child
   'Parents reprimanded their child excessively.'

(65) a. Mary stirala bel'je / *pjatno.
   Mary washed clothes stain
   'Mary washed clothes.'
b. Mary zastrira^{PRF} pjetno / ?beł'je.
   Mary ZA-washed stain clothes
   'Mary washed the stain off / washed stains off of clothes.'

(66) a. Harry koldoval^{IMP}.
   Harry cast spells
   'Harry cast spells.'

b. Harry zakoldoval^{PRF} drakona.
   Harry ZA-cast spell dragon
   'Harry put spell on the dragon.'

The input verb rugat^{IMP} (to reprimand) in (64a) changes its lexical meaning into zarugat^{PRF} (reprimand excessively), implying that the reprimanding was excessive and had a negative effect on the child. The input verb stirat^{IMP} (to wash) in (65a) is shifted into zastrirat^{PRF} (to wash off, remove by washing) in (65b), replacing the theme argument clothes by stain. Finally, the intransitive verb koldovat^{IMP} (to cast spells) in (66a) is shifted into the transitive verb zakoldovat^{PRF} (to put spell, to enchant) in (66b). Thus, the input verbs for damage undergo changes in their lexical meaning, a choice of a theme argument and an argument structure. The lexical meaning of the input verbs for damage is changed from denoting doing X into damage or negatively affect by doing X. Consequently, a theme argument of the damage verbs denotes an entity that can be damaged or negatively influenced. An incremental theme for damage verbs usually makes reference to an animate entity (a person or an animal) or a physical object (a book, a stain on the clothes). A degree of damage may vary, from an absolute destruction or death to a less severe form of damage (as in zakormit^{PRF} rebenka konfetami [to feed a child too much with candies]). Some damage verbs allow both usages, resulting in different lexical interpretations. Thus, zalečit^{PRF} ranu (to heal a wound) has an interpretation of to make the wound disappear, while zalečit^{PRF} čeloveka do smerti (to heal a person to death) has a sarcastic flavor, meaning to kill a person by an excessive and inappropriate healing.

On the other hand, other damage verbs restrict their theme arguments to be either an animate or a physical entity. For instance, zabit^{PRF} (to ZA-hit) in its damage interpretation takes an animate object and acquires a meaning of to beat, as in
zabit'\textsuperscript{PRF} Ivana palkoj (to beat Ivan severely with a stick) vs. *zabit'\textsuperscript{PRF} stenu (to beat a wall). These restrictions on selection of a theme argument may differ from an input counterpart, as in the case of rezat'\textsuperscript{IMP} (to cut) which allows both rezat'\textsuperscript{IMP} derevo (to cut wood) and rezat'\textsuperscript{IMP} kuritzu (to cut a chicken). Its ZA-prefixed output form, however, takes an animate object only as its theme argument (Cf. zarezat'\textsuperscript{PRF} kuritzu [to slaughter chicken] vs. * zarezat'\textsuperscript{PRF} derevo [to slaughter wood]).

A theme of a DAMAGE ZA-prefixed verb may also refer to an abstract entity in which case a verb is metaphorically used, as in Paillard's 1995 example zapit'\textsuperscript{PRF} gore (literally, to cover grief by drinking), which is an idiom in Russian, meaning forget one's sorrow/calamity by getting drunk. Zaliznjak 1995 provides an even more metaphorical example zasidet'\textsuperscript{PRF} talant inženera v kanzeljarijax (literally, to sit over an engineer's talent in offices) which, in this context, means to waste one's talent in engineering because of bureaucracy / an administrative work.

The resultant damage ZA-prefixed verbs are transitive and some of them allow an optional instrument argument, which takes an indirect object position and acquires an instrumental case. Example (66) shows that the prefix ZA- can shift some intransitive input verbs into the transitive damage resultant verbs. Thus, the shifts in the lexical meaning and argument structure in the input verbs for the damage class range from a minor shift in lexical meaning in the killing and hurt verbs to visible shifts in other types of input verbs, as demonstrated in examples (64)-(66).

### 4.3.2.4 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs for Get Resultant Verbs

The get verbs show minor shifts in lexical meaning, when the input verbs belong to prototypical category of obtain verbs, such as bronirovat'\textsuperscript{IMP} (to book). The prefix ZA- imposes a restriction that an extent of affectedness of the theme argument is above the norm. In the case of get verbs, it means that the act of transition of possession is at least half way complete, as illustrated by the following examples in (67).

(67) a. Ivan * čut'-čut' / napolovinu / polnost'ju zavladel\textsuperscript{PRF} zemlej.
    Ivan a little bit half way completely ZA-owned land
    'Ivan completely/ half the way took possession over the land.'
b. Voiska *čut'-čut' / napolovinu / polnost'ju zaxvatiliPRF gorod.
Troops a little bit half way completely captured city
'The troops captured the city completely / half way.'

The lexical meaning of other input verbs that are not obtain verbs is shifted from doing X or being in a state of X into taking possession by the means of X. For instance, an activity verb voevat'IMP (to wage war) in (68a) is shifted into zavoevat'PRF (to take possession by waging war) in (68b). The shift in lexical meaning is coupled with the shift in argument structure, since voevat'IMP (to wage war) is intransitive, while zavoevat'PRF (to take possession by waging war) is a transitive verb.

(68) a. Rimljane voevaliIMP's Gallami.
Romans fought with Gauls
'Romans fought with Gauls.'
b. Rimljane zavoevaliPRF Gallov.
Romans ZA-fought Gauls
'Romans conquered the Gauls.'

The meaning of zavoevat'PRF in (68b) is best translated as to conquer, which basically means to take possession over the territory of Gauls by waging war against them. A more complicated shift into the get verb occurs with the state verb vladet'IMP (to own) in (69a). It undergoes a shift into the get accomplishment zavladelPRF (to take possession of) in (69b).

(69) a. Ivan vladelIMP zemljoj.
Ivan owned land.INSTR
'Ivan owned the land.'
b. Ivan zavladelPRF zemljoj.
Ivan ZA-owned land.INSTR.
'Ivan took possession of the land.'

While the argument structure of an input verb in (69) is the same as of its output, the shift with vladet'IMP (to own) seems to be an exceptional case for a number of
reasons. First, the input verb in (69a) takes an indirect object with instrumental case, rather than a direct accusative object. The output form in (69b) does not change land into a direct object with accusative case, as we would expect, based on the intransitive/transitive shift in (68). Second, the meaning of zavladet'PRF cannot be interpreted as taking possession over the land by the means of owing it, since own is a non-dynamic state, rather than process. Thus, it seems that zavladet'PRF is not a real accomplishment, but rather a degree achievement, containing only an incremental event of change in its denotation without the corresponding activity subevent. I will, therefore, treat zavladet'PRF as an exceptional case of get verbs.

The theme of get verbs is not necessarily restricted to physical objects or locations. It can also refer to animate entities, as in zaxvatiťPRF vragov v plen (to capture one's enemies). The get verbs may carry a pragmatic implication that an agent invested significant efforts in order to come into a possession of a given property, as in Kot v sapogax zavladeťPRF zamkom, pobedivPRF ludoeda (Puss-in-Boots took possession over the castle by defeating the ogre).

To sum up, the sections 4.2 and 4.3 compared the four subclasses of resultant ZA-prefixed verbs to their inputs with respect to Vendlerian aspectual class, shifts in lexical meanings and argument structure and the properties of incremental themes. The number of general remarks about the resultant prefix ZA- can be made on the basis of obtained findings.

First, the resultant ZA- shifts activities, which constitute a majority of its input verbs, into the resultant ZA-prefixed accomplishments. Second, a resultant prefix ZA- allows shifts in the argument structure of the input verbs in some of the resultant subclasses. Thus, the shifts of intransitive activities into transitive accomplishments were observed in some input verbs for the damage and get resultant subclasses. The accumulative and cover subclasses did not attest the cases of shifts from intransitive input forms into transitive outputs. Third, the prefix ZA- introduces a restriction on the extent of affectedness of an incremental theme in all cases of resultant accomplishments. This restriction says that the theme argument is affected above or equal to some default value. The default value is contextually or extra-linguistically defined for each specific case. Fourth, the theme argument must be an existing material object. In such way, the verbs of creation are excluded from occurring with resultant accomplishments, unless they shift their lexical meaning, as in the case of
stroit' \textsuperscript{IMP} (to build), which becomes \textit{zastroit'\textsuperscript{PRF}} (to fill by building). The overall findings in sections 4.2 and 4.3 are summarized in table 4.5.

\textbf{Table 4.5}

\textit{Resultant ZA}-prefixed verbs: Overall Results

<table>
<thead>
<tr>
<th>Vendlerian Classification Analysis</th>
<th>Input Counterpart</th>
<th>Perfective ZA-Prefixed Output</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accumulative Verbs</strong></td>
<td>Scalar Activity</td>
<td>Accomplishment</td>
</tr>
<tr>
<td><strong>Cover Verbs</strong></td>
<td>Activity / Accomplishment*</td>
<td>Accomplishment</td>
</tr>
<tr>
<td><strong>Damage Verbs</strong></td>
<td>Activity / Accomplishment*</td>
<td>Accomplishment</td>
</tr>
<tr>
<td><strong>Get Verbs</strong></td>
<td>State* / Activity /</td>
<td>Accomplishment</td>
</tr>
</tbody>
</table>

* a limited number of cases.
<table>
<thead>
<tr>
<th>Class I: Accumulative</th>
<th>Properties of Theme</th>
<th>Extent of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulative</td>
<td>an entity that can undergo a gradable change with respect to some physical property (thickness, density, awareness, etc)</td>
<td>variable, depending on a verb and context</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class II: Cover</th>
<th>Properties of Theme</th>
<th>Extent of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>surface, three-dimensional container, sound, abstract entity as 'metaphoric surface' (table, hole, radio transmission, reputation)</td>
<td>at least half of the surface of the covered object</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class III: Damage</th>
<th>Properties of Theme</th>
<th>Extent of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage</td>
<td>a physical object or animate entity. (book, stain, person, chicken)</td>
<td>a significant damage to the health condition of animate entity, or to a physical condition of an object</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class IV: Get</th>
<th>Properties of Theme</th>
<th>Extent of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get</td>
<td>a property that changes possession</td>
<td>at least half of the property in question</td>
</tr>
</tbody>
</table>

Based on these findings, I can now present a formal analysis of the resultant meaning of the prefix ZA-.

### 4.4 Formal Semantic Analysis of the Resultant Prefix ZA-

The task now is to explain the findings, observed in the comparison section 4.3. In the previous chapter, we have seen that the spatial prefix ZA- derives locative accomplishments out of (mainly) activity input verbs. In section 4.3.1, I have shown that the resultant prefix ZA- also behaves as an aspectual shift operator, deriving accomplishment-type events out of activities and lexical accomplishments. In section 4.3.2, I provided evidence that such accomplishments, derived by ZA-, differ from their input counterparts in terms of their lexical meaning, even in those cases when such difference seems to be undetectable at the first sight. In particular, the resultant ZA- imposes a restriction on the extent of affectedness of a theme argument, while the input verbs lack such restriction. Thus, I assume that the resultant prefix ZA- derives a
different subtype of accomplishments, which I call the resultants accomplishments. If so, the first step in exploring the semantics of the resultant ZA- is to provide the definition for resultant accomplishments. Then, I can formulate a shift operation for the resultant ZA- that derives the input verbs into resultant accomplishments.

In Chapter III, we have seen that the semantic behavior of locative accomplishments is largely determined by the properties of the BECOME AT event of change, imposed by the spatial prefix ZA- on the input activity verbs. The BECOME AT event picked up a location, denoted by a goal argument, as its incremental argument; defined an incremental change as an incursion into the goal area; and restricted a culmination of a motion event to occur within the borders of a goal area. By analogy with BECOME AT, I assume that the resultant prefix ZA- imposes its own incremental event of change on activity verbs. I call this resultant event of change – BECOME AFFECTED event, or in a shorter form BECOME AFF. A resultant ZA-prefixed accomplishment event is represented in (70).

(70) Resultant Accomplishment Template

\[ \lambda y \lambda x_1 \ldots x_N \lambda P \lambda e. \exists e_1, e_2\{ e = S(e_1 | U e_2) \land P_{\text{ACTIVITY}}(e_1) \land \theta_{1\ldots N}(e_1) = x_1\ldots x_N \land \text{Theme}(e_1) = y \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) \} \]

A derived resultative accomplishment verb denotes a complex event with an activity subevent \( e_1 \) and a BECOME AFF subevent \( e_2 \), linked via the incremental relation, so that an activity event and a BECOME AFF event share a theme argument. \( \lambda x_1 \ldots x_N \) stands for thematic arguments, other than theme, that may be present in the thematic argument structure of a verb. For instance, the ZA-prefixed resultant accomplishments zaguster'IMP (to thicken), zastroit'PRF (to build up), zamučit'PRF (to torture) and zavoèvat'PRF (to conquer) have the following representations in (71)-(74).
(71) Varen'je zagustelo\textsuperscript{PRF}.
Jam ZA-thickened
'The jam thickened.'
\[\exists e. \exists e_1, e_2[ e = ^S(e_1 \cup e_2) \land \text{BECOME THICKER}(e_1) \land \text{Theme}(e_1) = \text{Jam} \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) ]\]
there was an accomplishment event with \textit{jam} as its theme, which consists of a sum of the incrementally related subevents: the scalar activity of becoming thicker and the incremental event of change in the theme argument, BECOME AFF, and the theme of the become thicker event is the argument of the BECOME AFF event.

(72) Ivan zastroil\textsuperscript{PRF} pustyr'.
Ivan ZA-built empty area
'Ivan built up the empty area.'
\[\exists e. \exists e_1, e_2[ e = ^S(e_1 \cup e_2) \land \text{BUILD}(e_1) \land \text{Agent}(e_1) = \text{Ivan} \land \text{Theme}(e_1) = \text{the empty area} \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) ]\]
there was an accomplishment event with \textit{Ivan} as its agent and the empty area as its theme, which consists of a sum of the incrementally related subevents: the building activity and the incremental event of change in the theme argument, BECOME AFF, and the theme of the building event is the argument of the BECOME AFF event.

(73) Tom zamučil\textsuperscript{PRF} košku Murku.
Tom ZA-tortured cat Murka
'Tom tortured\textsuperscript{PRF} Murka the cat.'
\[\exists e. \exists e_1, e_2[ e = ^S(e_1 \cup e_2) \land \text{TORTURE}(e_1) \land \text{Agent}(e_1) = \text{Tom} \land \text{Theme}(e_1) = \text{Murka} \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) ]\]
there was an accomplishment event with \textit{Tom} as its agent and Murka the cat as its theme, which consists of a sum of the incrementally related subevents: the torturing activity and the incremental event of change in the theme argument, BECOME AFF, and the theme of the torturing event is the argument of the BECOME AFF event.
(74) Rimljane zavoevali\textsuperscript{PRF} Gottov.

Romans ZA-fought Goths

'The Romans conquered the Goths.'

\[ \exists e_1, e_2 \ (e = S(e_1 \cup e_2) \land \text{FIGHT}(e_1) \land \text{Agent}(e_1) = \text{Romans} \land \text{Theme}(e_1) = \text{Goths} \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] \]

there was an accomplishment event with Romans as its agent and Goths as its theme, which consists of a sum of the incrementally related subevents: the fighting activity and the incremental event of change in the theme argument, BECOME AFF, and the theme of the fighting event is the argument of the BECOME AFF event.

The observations, made about resultant accomplishments in the previous sections, allow reconstructing the semantic properties of the BECOME AFF event. In particular, the BECOME AFF imposes restrictions on: a) the choice of its argument; b) the affectedness of its argument; c) the nature of an incremental change. Let's review these factors step-by-step.

4.4.1 The Internal Structure of BECOME AFF

As I claimed at the beginning of this chapter, all the resultant ZA-prefixed accomplishments describe the affectedness of a theme argument in the course of an event. At this point, I'd like to stress that my understanding of the term \textit{affectedness} differs from some approaches in the linguistic literature. An affected argument is generally understood as an argument that measures out and delimits the event, denoted by the given verb (Tenny 1992). In other words, an argument itself in some sense delimits the extent of an event. I, however, propose that the measuring out and delimitation of an event occurs as the result of an interaction between the incremental event of change, imposed by the prefix ZA-, and its incremental theme argument.

Thus, in my view, the affected theme argument is simply the argument that undergoes some change in the course of an event, while the function of delimiting a given event is relegated to the prefix. Having made this important clarification, let me return to the discussion of the properties of the BECOME AFF event of change.

According to (70), the BECOME AFF event of change takes a theme of an activity event as its incremental argument. In this respect, the BECOME AFF element
does not differ from the standard BECOME subevents in the normative lexical accomplishments. On the other hand, the BECOME AFF event imposes a number of specific selectional restrictions on its incremental argument (i.e., a theme argument of the corresponding activity subevent). One of these requirements is a presupposition of a continued existence of an entity, denoted by theme argument, throughout the development of a given event. A theme argument of the BECOME AFF event is often associated with an existing physical object or animate entity, though there are also cases of more abstract themes, as in *zapjatnat'PREF reputatziju* (to stain a reputation = to shame oneself), where the theme is an abstract entity, rather than a material one. Nonetheless, an object, denoted by the theme argument of the BECOME AFF event, must have some form of a material existence in the real world. As a consequence, the resultant ZA-prefixed accomplishments do not express the meanings of creation and consumption.

This is not to say that the resultant prefix ZA- cannot apply to *creation* and *consumption* verbs. Such verbs, however, change their lexical meaning with the resultant ZA-. For instance, the *creation* verb *stroit'IMP* (to build) in *stroit'IMP dom* (to build a house) is shifted into the *cover* verb *zastroit'PREF pustyj* (to build up an empty area). Another *creation-to-cover* shift occurs in the case of *sejat'IMP pšenizu* (to sow wheat), which becomes *zasejat'PREF pole* (to sow the field up). A similar situation occurs with *consumption* verbs in which a theme argument ceases to exist as a physical real-world object in the course of a consumption event. For instance, the *food consumption* verbs *est'IMP* (to eat) and *pit'IMP* (to drink) undergo a shift in their lexical meanings with the resultant ZA-, becoming *zaest'PREF* (to take one food after another, to suppress one taste by eating another kind of food) and *zapit'PREF* (to suppress one taste by drinking another type of drink), as in *zapit'PREF lekarstvo čaem* (to suppress the taste of a medicine by drinking tea). Janda 1986 classifies *zaest'PREF* and *zapit'PREF* as special cases of the *cover* verbs. Hence, it seems that the BECOME AFF event of change, introduced by the resultant prefix ZA- is incompatible with the meanings of *creation*, in which the theme object either does not exist in the real world prior to a given event, and *consumption*, in which a real-world object is in some sense 'erased' from existence.

Another selectional restriction that applies on the theme argument of BECOME AFF concerns its ability to undergo an incremental change with respect to a relevant
property. As mentioned in the previous discussion, an object that has a fixed value on the measure scale, corresponding to a given property, cannot be compatible with the incremental event of change, introduced by the resultant ZA-. A previously introduced example with *gips zakamenel* PRF (the plaster became hard as a stone) vs. an infelicitous *kamen’ zakamenel* PRF seems to adequately illustrate this point.

The entailments on a theme argument of BECOME AFF event of change can, thus, be summarized as follows.

(75) **Entailments for a Theme Argument of Resultant ZA-Prefixed Verbs**

(ThemeZA)

i. causally affected by another participant

ii. undergoes a change of state

iii. continued real-world existence, independently of a given event

iv. allows gradual change in its property up to some maximal degree.

The last property presupposes that a process of change in an affected argument cannot last indefinitely and there is some absolute value at which a further change will no longer be possible. The reason for introducing such requirement will become obvious later on, as I present the semantics for the BECOME AFF event of change.

Another important property of the BECOME AFF event is that it defines a range of extent of change in an affected argument between some conventional norm and the maximal value on a relevant measure scale. This requirement became evident in the comparison between some ZA-prefixed cover verbs and their input verbs in (53)-(54) and between ZA-prefixed and PO-prefixed forms of scalar activities in (49)-(50).

Thus, the resultant prefix ZA- combines both the features of an aspectual shift operator and a measure function on an extent of change of a given event (similarly to its spatial colleague in chapter III).

As for its restrictions on the manner of change, it seems that the BECOME AFF event imposes the homomorphism relation between an extent of change in its theme and a temporal duration of a given event. This homomorphism is clearly evident in the case of accumulative ZA-prefixed verbs, derived from the *change of state* scalar activities. This cannot be used as a valid argument, however, since the *change of state* verbs denote such homomorphism relations as a part of their own semantics at the
first place. Thus, one needs to take a look on other ZA-prefixed verbs to support the above statement. Consider the following example in (76).

(76) a. Ivan уже асфальтировалIMP oidin i tot že učastok dorogi paru raz.
    Ivan already asphalted same area of road few times
    'Ivan asphalted the same part of the road a number of times.'

b. ??Ivan уже азасфальтировалPRF oidin i tot že učastok dorogi paru raz.
    Ivan already ZA-asphalted same area of road few times

An imperfective verb асфальтироват'IMP (to asphalt) in (76a) can acquire a perfect reading, meaning that there was a complete event of asphaltating the same part of the road several times. Its ZA-prefixed perfective counterpart in (76b), however, is infelicitous with a single complete event interpretation, indicating that the BECOME AFF component does not allow back-tracking in the process of covering the road with asphalt. The only way (76b) can be felicitous is by making reference to several non-temporally adjacent asphaltating events (i.e., the same part of the road became broken after each asphaltating event and needed to be asphalted again). Thus, (76) provides further evidence that the BECOME AFF event denotes a monotonic change in its theme.

I shall now propose an explanation for the aforementioned phenomena, associated with the BECOME AFF event. Let me start with the incompatibility of the resultant prefix ZA- with creation and consumption events. A key to solving this problem is related to the previously made observation in 4.2.1 about the behavior of ZA- with de-adjectival change of state scalar activity verbs. Section 4.2.1 pinpointed the fact that the resultant ZA- attaches mainly to those de-adjectival verbs that are formed from total scalar adjectives, while the prefix RAZ- is used with partial scalar adjectives. In Rotstein & Winter 2004 analysis, total adjectives differ from partial ones in two respects. First, total adjectives have clearly defined default values. A default value for a total adjective is an initial point on the measure scale of a partial adjective. For instance, a default value for the total adjective dry is zero degrees of wetness. In other words, a default value for a total adjective is not strictly context-dependent, but is rather conventionally predetermined, stemming from our real-world knowledge about dryness. On the other hand, the criteria for establishing a default value for wetness are
vague and much more context-dependent (e.g., a towel can be considered particularly wet in a certain context, but not wet enough in another).

Second, total adjectives have bounded measure scales, while partial scalar adjectives are associated with (partially) unbounded scales. So, in the case of dry, there is always some maximal degree of dryness on the scale, while for wet there seems to be no absolute degree of wetness. It seems to me that creation and consumption verbs are semantically close to partial adjectives, being associated with unbounded measure scales with no predetermined default values. Let's take a transitive creation verb build that forms the VP build the house. Since there are many different types of houses in the world, there is no predetermined default value for what a built house is. Furthermore, the creation scale for a building event seems to be unbounded, since it is unclear what constitutes an absolute maximum value for an event of creation of a house (i.e., in principle, you can always add another floor). In a similar way, there is no default conventional norm for what constitutes a normative eating a sandwich event, though, naturally, an eating event will be over when a sandwich is entirely consumed. The fact that both creation and consumption verbs and de-adjectival scalar activities, derived from partial scalar adjectives, are incompatible with the BECOME AFF event, and are not associated with bounded measure scales with predetermined default values, suggests that there might be a connection between these two phenomena.

In particular, I assume that the BECOME AFF event of change is associated with a closed measure scale, which naturally makes it incompatible with creation and consumption verbs, as well as with de-adjectival change of state scalar activities, based on partial adjectives. In fact, I have argued in chapter III that the spatial BECOME AT event of change comes with a 'built-in' closed measure scale of change in space, which regulates the ordering of an incremental chain, accounting for a semantic behavior of locative accomplishment verbs.

By analogy with BECOME AT, I shall assume that the BECOME AFF event also contains a closed measure scale, built into its inner semantic structure. Such material change scale measures an extent of change in an affected argument by incrementally (and homomorphically) mapping parts of a theme to the relevant measure degrees on the given scale. Such manner of mapping ensures a monotonically increasing event of change. Moreover, similarly to the spatial measure scale in locative accomplishments, the material change scale comes with a marked interval of
validation, which ranges between a conventional value of change and some maximal value on the scale. The initial point on the material change measure scale is zero (no change), which is constant for all resultant events. Other relevant values (such as a measure dimension, types of degrees on the scale, conventional and maximal values) are recovered from the meaning of an input verb, properties of an affected argument and context. E.g., resultant accomplishments, based on the damage verbs, measure an extent of affectedness of their themes in degrees of health damage for animate themes (with death corresponding to the maximal value on the damage scale), or degrees of physical destruction for inanimate ones (with total destruction corresponding to the maximal value on the damage scale). A material change scale of the BECOME AFF event is illustrated in (77) below.

(77) A Material Change Built-In Scale of the BECOME AFF Event of Change

The scale in (77) regulates the construction of an incremental chain of the BECOME AFF event on par with such semantic factors, as the meaning of an input verb, properties of its theme argument and further contextual support. The scale above only provides a skeletal structure for an event of change, setting a general pattern of development for a given event (what Janda 1985, 1986 calls setting the plot). I assume that particular values on the scale (e.g., a default value of change) are pragmatically defined for each case scenario on the basis of our real world knowledge (see also a discussion on prefixes in Filip 2000, 2003). For instance, assuming that the language user has a vague idea of what counts as a thick jam in the real world, he can then use the prefix Za- with the verb thicken to express the meaning that some specific jam has reached the state of default thickness and may have gone beyond it. Naturally, the default value for thick jams (and their units of measure) differs from the default value and units of measure for, say, sinking ships or rusty nails. Thus, the BECOME AFF event itself does not define the default value per se, but imposes a correlation between the default value (which comes as a predetermined norm, defined by the combination
of contextual and extra-linguistic considerations), the extent of affectedness of a theme argument and the culmination of a given event. Since the BECOME AFF event is associated with the closed measure scale (which has predetermined normative values), the extent of affectedness of its theme argument ranges between a default value and a maximal value on a relevant measure scale. The contribution of the BECOME AFF to the semantics of an input verb results in imposing a requirement that a theme argument X was affected in the course of a given event Y in such way that the extent of affectedness is equal to or above the predetermined default value on some relevant measure scale at the upper bound (=culmination) of the derived accomplishment event. For instance, suppose that the default value for thick jams is 50 degrees of density, while the maximal value is 100 degrees. In this context, the incremental chain of the BECOME AFF event of *thickening jam* is represented as follows.

(78) **An incremental chain of the BECOME AFF THE JAM event of change**

```
Material Change Measure Scale

<table>
<thead>
<tr>
<th>zero degree of change</th>
<th>default thickness of the jam</th>
</tr>
</thead>
<tbody>
<tr>
<td>zero thickness of the jam</td>
<td>= 50 degrees density</td>
</tr>
<tr>
<td>interval of validation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>monotonic material change</th>
</tr>
</thead>
<tbody>
<tr>
<td>maximal thickness of the jam</td>
</tr>
</tbody>
</table>
```

The fact that the scale in (77) is closed accounts for the *definite limit of change* restriction, imposed on a theme argument of BECOME AFF. Since the measure scale in (77) has a maximal value, a change in a theme object has to stop at some relevant point. Thus, ZA-prefixed resultant accomplishments are incompatible with objects that can undergo an indefinite change, as shown in (79).

(79) # John zalil [PRF] vodoj bezdonnuju bočku.

    John ZA-poured water bottomless barrel
    'John filled up the bottomless barrel.'

A *continued existence* restriction on a theme argument also stems from the properties of the measure scale in (77). As said above, the *material change* scale has
an inner validation interval for a given event, which ranges from some default to a maximal value on the scale. As I argued above, the default value is determined not only by the context, but to a great extent by an extra-linguistic knowledge of a language user. Knowing what counts as a thick jam allows comparing between the extents of thickness of two jams as in (80).

(80) Moê klubničnoë varen'je zagustelo\textsuperscript{PRF} sil'nee čem tvoë.

My strawberry jam ZA-thickened harder than yours

'My strawberry jam became thicker than yours.'

However, in order to compare between extent of change in thickness of two jams, we need to have some predetermined comparison class for the jam objects. In the same fashion, a sentence like Jumbo is a small pink elephant can be validated only if we have a comparison class of pink elephants, so that we can check whether Jambo is small or not relative to the other pink elephants. The point is that in order to establish a conventional default value for a certain object with respect to some measure criteria, there has to be a comparison class of existing objects of that type. On the other hand, one cannot compare houses, which have not yet come to existence, as in the case of the creation verb build (e.g., # my house is built more than yours).

Having discussed the properties of BECOME AFF element of a resultant accomplishment event, brought in by the resultant prefix ZA-, I shall now define an aspectual shift operation, imposed by the given prefix on its input verbs.

4.4.2 The Resultant Prefix ZA- as an Aspectual Type-Shift Operator

I regard the resultant prefix ZA- as an aspectual shift operator from input activity verbs into resultant accomplishments. It applies to activities of the type $<d_n,<e,t>>$ and yields resultant accomplishment events of the type $<d_n,<e,t>>$, where a subscript $n$ stands for n-number of individuals. The resultant ZA-shift operation is defined in (81).
(81) Resultant Accomplishment Shift for Activities

\[ ZA-\text{SHIFT}_{\text{RESULT}}: (\lambda y \lambda x_1 \ldots x_N \lambda P(ACT.) \land \Theta_{1 \ldots N} (e_1) = x_1 \ldots x_N \land \text{Theme}(e) = y) = \]
\[ = \lambda y \lambda x_1 \ldots x_N \lambda P(e) \cdot \exists e_1, e_2 [ e = S(e_1 \cup e_2) \land P_{\text{ACTIVITY}}(e_1) \land \Theta_{1 \ldots N} (e_1) = x_1 \ldots x_N \]
\[ \land \text{Theme}(e_1) = y \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] \]

The problem for the type-shifting operation in (81) is that some input verbs for the resultant prefix ZA- are imperfective accomplishments, as observed in section 4.3.1. To resolve a mismatch between accomplishment inputs and the resultant ZA-shift in (81), I propose once again to rely on the EXT operation that extracts an activity part of an imperfective accomplishment. The EXT operation is defined in (82), repeated from (109) in Chapter III.

(82) Activity Extraction Operation:

\[ \text{EXT}(\lambda y \lambda x_1 \ldots x_N \lambda P \cdot \exists e_1, e_2 [ e = S(e_1 \cup e_2) \land P_{\text{ACTIVITY}}(e_1) \land \Theta_{1 \ldots N} (e_1) = x_1 \ldots x_N \]
\[ \land \text{Theme}(e_1) = y \land \text{BECOME P-ed}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] \]
\[ \rightarrow \lambda y \lambda x_1 \ldots x_N \lambda P(e) [P_{\text{ACTIVITY}}(e) \land \Theta_{1 \ldots N} (e) = x_1 \ldots x_N \land \text{Th}(e) = y] \]

Thus, applying the EXT operation on the transitive accomplishment betonirovat\(^{\text{IMP}}\) (to cement) yields a corresponding activity part in (83).

(83) \[ \text{EXT}(\lambda x \lambda y \lambda P \cdot \exists e_1, e_2 [ e = S(e_1 \cup e_2) \land \text{CEMENT}(e_1) \land \text{Agent}(e_1) = x \]
\[ \land \text{Theme}(e_1) = y \land \text{BECOME CEMENTED}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \]
\[ \land \text{INCR}(e_1, e_2, C(e_2))] \]
\[ \rightarrow \lambda x \lambda y \lambda P(e) [\text{CEMENT}(e) \land \text{Agent}(e) = x \land \text{Th}(e) = y] \]
Applying the resultant \(ZA\)-shift to the extracted activity in (83) yields a resultant cover accomplishment \(zabetonirovat'\)\(^{\text{PRF}}\) (to fill up by cementing) in (84).

(84) \(ZA\)-SHIFT \(\text{RESULT.} \left( \lambda x \lambda y \lambda P \lambda e \left[ \text{CEMENT}(e) \land \text{Agent}(e) = x \land \text{Th}(e) = y \right] \right) = \lambda x \lambda y \lambda P \lambda e. \exists e_1, e_2 \left[ e = e_1 \sqcup e_2 \land \text{CEMENT}(e_1) \land \text{Theme}(e_1) = y \land \text{BECOME AFF}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, \text{C}(e_2)) \right] \)

Thus, the lexical \(\text{BECOME CEMENTED}\) event of change in the imperfective accomplishment \(betonirovat'\)\(^{\text{IMP}}\) (to cement) is substituted by the \(\text{BECOME AFF}\) event of change in the derived resultant accomplishment \(zabetonirovat'\)\(^{\text{PRF}}\) (to fill up by cementing). Since the \(\text{BECOME AFF}\) event measures the extent of affectedness of a theme argument with respect to some predetermined default, such substitution explains the differences between the input imperfective \(\text{cover}\) accomplishments and their accumulative resultant \(ZA\)-prefixed outputs with respect to the degree of affectedness of the theme, observed in section 4.3.2.2. The lexical accomplishments do not impose any restrictions on the degree of affectedness of their themes, since their lexical \(\text{BECOME}\) subevents do not entail such restrictions at the first place. When these \(\text{BECOME}\) subevents are substituted by \(\text{BECOME AFF}\) subevent, introduced by the resultant \(ZA\)-, the \(\text{BECOME AFF}\) subevent imposes a comparison relation between an extent of affectedness of a theme and an interval of validation on the closed measure scale of the incremental event of change. Thus, we observe changes in the lexical meaning of the lexical accomplishment events that serve as inputs for resultant \(ZA\)-prefixed verbs.

It is important to mention that the \(\text{BECOME AFF}\) event of change is an artificial construction, having no lexical content of its own. Thus, it only guarantees that a theme argument underwent some change in the course of an event; that such change was gradual and the extent of affectedness of a theme is equal to or above the norm; but it does not provide any specific information on how the theme argument underwent a change. In such case, the missing lexical content for the \(\text{BECOME AFF}\) is retrieved from: a) the lexical content of an activity verb it attaches to; b) the properties of an incremental theme argument; c) the extra-linguistic knowledge of the world. Since the resultant accomplishments are derived and the \(\text{BECOME AFF}\) replaces the original lexical \(\text{BECOME}\) event, we may expect to see a greater
flexibility in ZA-prefixed forms in denoting additional meanings, unavailable for the imperfective input accomplishments. Some evidence for this claim comes from the pair $ržavet^{IMP}$ - $zaržavet^{PRF}$ (to become rusty) in (85).

(85) a. #Moj frantzuskij rzavel$^{IMP}$.
    My French became rusty
b. Moj frantzuskij zarzavel$^{PRF}$.
    My French ZA-became rusty
    'My French became rusty = My French is rusty.'

The perfective ZA-prefixed accomplishment verb $zaržavet^{PRF}$ (to become rusty) allows a metaphoric extension of the meaning of *become rusty*, referring to forgetting the French language. However, the imperfective scalar activity $ržavet^{IMP}$ (to be becoming rustier) is not acceptable with such interpretation.

The resultant ZA-shift operation in (81) accounts for some simple cases of deriving resultant accomplishments in which there is no significant change between the lexical meaning and argument structure of input verbs and their ZA-prefixed correlates. In other words, each of the four thematic subclasses of resultant ZA-prefixed accomplishments – *accumulative, cover, damage* and *get* - has a corresponding prototypical thematic class of input verbs, as shown in (86).
(86) Prototypical Thematic Classes of Input Verbs for the Resultant Prefix ZA-

<table>
<thead>
<tr>
<th>Thematic Class of Input Verb</th>
<th>Thematic Class of ZA-Prefixed Output Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change of State</td>
<td>Accumulative</td>
</tr>
<tr>
<td><em>gustet'</em> (to thicken),</td>
<td><em>zagustet'</em> (to thicken up)</td>
</tr>
<tr>
<td><em>konservirovat'</em> (to</td>
<td><em>zakonservirovat'</em> (to preserve)</td>
</tr>
<tr>
<td>preserve)</td>
<td></td>
</tr>
<tr>
<td>Butter, Fill</td>
<td>Cover</td>
</tr>
<tr>
<td><em>asfaltirovat'</em> (to asphalt)</td>
<td><em>zaasfaltirovat'</em> (to asphalt)</td>
</tr>
<tr>
<td>Kill, Damage</td>
<td>Damage</td>
</tr>
<tr>
<td><em>mučit'</em> (to torture)</td>
<td><em>zamučit'</em> (to torture to death)</td>
</tr>
<tr>
<td>Acquisition</td>
<td>Get</td>
</tr>
<tr>
<td><em>kupit'</em> (to buy)</td>
<td><em>zakupit'</em> (to buy a lot of)</td>
</tr>
</tbody>
</table>

The problem is that, as observed in 4.3.2, many non-prototypical input verbs acquire the meanings of *cover, damage* and *get* with the resultant ZA-, undergoing a change in their lexical meaning and/or lexical structure. Such changes can be divided into three types. In the first case, an input verb that has a theme argument, but does not express a meaning of accumulation, cover, damage or get (e.g., *creation* and *consumption* verbs) undergoes a change in its lexical meaning (and, consequently, a change in its selectional restrictions on its theme) with the prefix ZA-, as *citat'*IMP (to read) in (87).

(87) a. Ivan čital IMP knigu.
    Ivan read    book
    'Ivan read a/the book.'

b. Ivan začital PRF knigu.
    Ivan ZA-read    book
    'Ivan read the book to pieces.'
The imperfective verb *citāt’*IMP (to read) in (87a) is shifted into the resultant *ZA-* prefixed accomplishment *zacitāt’*PRF (to damage by reading, to read to pieces) of the thematic class of *damage* verbs.

The second type of shifts involves a change in both lexical meaning and argument structure of an input verb, as in (88).

(88) a. Rimljane voevali IMP s Gallami.
    Romans fought with Gauls
    'Romans fought with Gauls.'

   b. Rimljane zavoevali PRF Gallov.
    Romans ZA-fought Gauls
    'Romans conquered the Gauls.'

The intransitive activity *voevat’*IMP (to fight) changes into the transtitive *get* accomplishment *zavoevat’*PRF (to conquer, to take possession by waging war), undergoing a shift in its lexical meaning and an addition of a theme argument position to its syntactic argument structure.

Finally, the resultant prefix *ZA*- creates resultant accomplishments out of (presumably denominalized) empty-based input verbs that do not have a coherent meaning of their own, as in (89).

(89) a. Vsemirnaja pautinasovsem zaputala PRF, zapautinila PRF Mišu.
    World-wide web totally ZA-entangled ZA-pautinila Miša
    'The world-wide web totally tied, entangled Miša in its net.'

   b. Ivan zafrendid PRF Mašu v as’ku.
    Ivan ZA-frendil Maša in ICQ
    'Ivan added Maša to his list of friends in ICQ.'

    [Thanks to Helena Kagan for this example]

In (89a), the prefix *ZA-* seems to coin the *cover* accomplishment *zapautinit’*PRF (to entangle) directly from the noun *pautina* (spider's web), since the corresponding denominalized verb *pautinit’*IMP has no lexical content of its own. In (89b), *ZA-* creates the resultant *get* accomplishment *zafrendid’*PRF (to add as a friend) from an
English noun *friend* (though the base verb *frendit*'IMP (to add friends) now seems to be used in the internet slang in Russian as well).

The ZA-shift operation in (81) cannot account for the shifts in (87)-(89) by itself. In the previous chapter, I suggested that a separate semantic *By-Analogy-With-Prototype* shift operation applies to input verbs prior to the application of the prefix ZA-. The BAWP shift makes such verbs compatible with ZA- by modeling them after some prototypical thematic class of input verbs. Examples (87)-(89) provide further evidence for such operation, which models the input verbs after one of the four prototypical meanings. Such modeling or *by analogy* interpretation is based on pragmatic factors and real-world knowledge. For instance, *zastroit'PRF pustyr'* (to build up an empty area) can hardly be perceived as an event of damaging the empty area by building, since we cannot construct an appropriate context for such interpretation. It, obviously, does not mean that the *empty area* underwent a change with respect to some physical property or changed possession by building. Thus, the most natural interpretation that *zastroit'PRF* (to build up) can be modeled after is the meaning of *cover*, so that the *empty area* is covered (with houses) by building. Naturally, this meaning is available only when a theme can be covered or filled.

Can a certain non-prototypical unprefixed verb be modeled after a number of different prototypical meanings? If so, then there should be some internal alternations between the four subclasses of resultant ZA-prefixed verbs in the lexicon. Such alternations do exist in the lexicon, as can be seen in examples (90)-(92).

(90) a. Ivan začitalPRF knigu do dyr.

        Ivan ZA-read  book  to holes
          'Ivan read the book to holes on its pages'.

        b. Ivan začitalPRF moju knigu i govorit, čto ne možet jee najti.

        Ivan ZA-read  my  book  and  says  that  not  can  her  find
          'Ivan borrowed my book to read and failed to return, saying he can't find it.'

(91) a. Novaja maz'  bystro zalečilaPRF ranu.

        New  ointment  quickly  healed  wound
          'The new ointment healed the wound quickly.'
b. Vrači zalečili\textsuperscript{PRF} Ivana do smerti.

Doctors ZA-healed Ivana to death
'The doctors killed Ivan with their excessive healing.'

(92) a. Ivan zabrosal\textsuperscript{PRF} kolodec kamjami.

Ivan ZA-threw well with stones
'Ivan filled the well by throwing stones.'

b. Ivan zabrosal\textsuperscript{PRF} Toma kamnjami.

Ivan ZA-threw Tom with stones
'Ivan stoned Tom.'

The meaning of začitat\textsuperscript{PRF} knigu in (90) is modeled after the damage meaning, denoting a process of destruction of a book in the course of a reading event. Note that (90a) does not mean that Ivan finished reading the book, as seen from the acceptability of Ivan umudrilsja začitat' knigu do dyr, pri etom ne dočitav eje do konca (Ivan managed to read the book to holes, while not finishing reading it to the end). On the other hand, začitat\textsuperscript{PRF} knigu in (90b) is constructed by analogy with get verbs and expresses the meaning of Ivan taking possession over my book. The example in (91) shows an alternation of zalečit\textsuperscript{PRF} (to heal) from the meaning of cover in (91a) to the meaning of damage in (91b). In this case, the choice of a theme argument plays a role in the overall interpretation of the VP. A wound is perceived as a surface that is covered in the course of healing, while Ivan is interpreted as an entity that is 'damaged' by the healing process. A similar alternation between the cover and damage meanings occurs in (92). In (92a), zabrosat\textsuperscript{PRF} is modeled after the cover verbs, since its theme argument is a container well. In (92b), the meaning of zabrosat\textsuperscript{PRF} drifts to the direction of damage, meaning that Tom was stoned by Ivan. Note that if an instrument stones in (92b) is replaced by pillows, zabrosat\textsuperscript{PRF} in (92b) can also be interpreted as cover Tom by throwing pillows.

To sum up, the resultant prefix ZA- derives resultant accomplishments out of (mainly) activity input verbs. ZA- introduces the BECOME AFF event of change that imposes several restrictions on the nature of an incremental change – taking an existing real-world gradable object as its theme, fixating an extent of affectedness of a theme above some pragmatically known default, monotonically-increasing
development of change. Resultant ZA-prefixed accomplishments are subdivided into four thematic subclasses, depending on the nature of change in the theme argument. Accumulative resultant ZA-prefixed verbs, such as *thicken* and *become rusty*, denote a change with respect to some physical property of a theme argument. Cover resultant verbs denote a change, affecting surface or capacity of a theme argument. Damage resultant ZA-prefixed verbs denote a negative change in their themes, which may be a physical damage or some other negative influence, such as *bewitch*, *read to pieces*, *reprimand excessively*. Get resultant verbs denote a change in possession of their themes. Each subclass of resultant verbs has a prototypical thematic class (or class) of input verbs that display high compatibility with the lexical meaning of their ZA-prefixed outputs. The interpretations of other input verbs that combine with the resultant prefix ZA- are modeled after one (or more) of the four resultant subclasses by the BAWP shift, which presumably depends on such factors as the lexical meaning of an input verb, the properties of its theme argument, contextual support, and on extra-linguistic considerations, such as the real-world knowledge of a speaker of the language.

It is important to bear in mind that the BAWP shift operation works in tandem with the prefix ZA- and precedes its application. It is used, thus, to expand the range of verbs that can be shifted by the resultant prefix ZA- into resultant accomplishments. In such a way, the BAWP shift accounts for the word-formational properties of the prefix ZA- (spatial and resultant), such as changing lexical meaning and argument structure of existing verbs or even deriving the new ones (i.e., empty-based verbs) directly from nominal expressions.

The natural question to ask at this point is whether it is possible to construct a model that can predict which input verbs will be modeled after which prototypical meaning. I believe that in order to create such a model, one need perform a number of steps. First, verbs in the lexicon of Russian need to be systematically categorized in terms of their thematic classes and semantic properties, similarly to the classification, proposed by Beth Levin for English verbs. Second, the arguments of such verbs, in particular a theme argument, need to be classified as well with respect to some lexical classes, which would encompass the range of their syntactic, semantic and pragmatic properties, such as HUMAN, FORCE OF NATURE, SUBSTANCE (what Padučeva 2004 calls a *taxonomic class of participant of an event*). Third, some theoretical framework need to be provided in order to account for the role of contextual influence
on the interpretation of ZA-prefixed output forms. When these three steps are completed, one would be able to make more precise predictions about the interaction of the resultant prefix ZA- (and other prefixes) with the input verbs. While accomplishing these tasks is a formidable challenge for any linguist, they lie beyond the scope of this thesis due to considerations of time and space. Therefore, I'd have to leave these tasks for a further research.
Chapter V.
The Inchoative Meaning of ZA-

5.1 Introduction

Chapters III and IV covered the locative and resultant meanings of ZA- and provided a formal semantic analysis for these meanings. This chapter deals with the third meaning of ZA-, the inchoative\(^{27}\). The inchoative meaning of ZA- received much attention in the studies on prefixation in Russian (Zemskaja 1955, Golovin 1964, Isačenko 1960, Šeljakin 1969, Zaliznjak 1995, Ramchand 2004). A commonly held approach to the inchoative ZA- views it as a special type of prefix, fundamentally distinct from the spatial and resultant prefixes ZA-. Such distinction between the inchoative ZA- and other types of ZA- is rooted in A.V. Isačenko's (1960) proposal, which distinguishes between qualifying prefixes (pristavki-kvalifikatory) and modifying prefixes (pristavki-modifikatory) in Russian (Isačenko 1960: 222-224). A qualifying prefix alters an original lexical meaning of an input verb in such way that the derived prefixed form acquires a novel lexical meaning, detached from the meaning of its input. An example of such alternation, provided in Isačenko 1960, is razorvat\(^{\text{PRF}}\) (to tear apart; to tear to pieces), derived by the prefix RAZ- from an imperfective input verb rvat\(^{\text{IMP}}\) (to tear). A modifying prefix, on the other hand, does not change a lexical meaning of its input verb, but rather emphasizes some of its inner aspects. For instance, the inchoative prefix ZA- shifts a focus on the initial phase of an input verb govorit\(^{\text{IMP}}\) (to talk), changing it into a perfective zagovorit\(^{\text{PRF}}\) (to start talking).

Isačenko 1960 argues that the qualifying prefixes are lexical operators that are used as tools of word-formation in Russian, deriving new autonomous verbal lexemes from unprefixed imperfective verbs. The modifying prefixes, on the other hand, do not sever a link between the input verbs and their prefixed counterparts, forming classes of prefixed Aktionsarten verbs (Isačenko uses the term soveršaemosti; Forsyth 1970:20 refers to such verbs as procedural). According to Isačenko 1960, there is an

\(^{27}\) The term inchoative is adopted from Zemskaja 1955 and Zaliznjak 1995. The alternative terms, such as inceptive or ingressive, are found in the literature, referring to the same meaning of ZA-. (see also discussion in Maslov 1965 on the distinction between ingressive and inchoative terms).
important grammatical distinction between the prefixed verbs, derived by the qualifying prefixes, and those, derived by the modifying prefixes. The former, being independent lexemes, give rise to secondary imperfective forms; while the latter, still preserving a strong lexical relation with their inputs, reject secondary imperfectivization.

Recent studies on aspect and prefixation (Babko-Malaya 1999; Di Sciullo and Slabakova 2005; Ramchand 2004; Romanova 2004; Schoorlemmer 1995; Svenonius 2004) uphold Isačenko 1960 proposal, proposing a range of arguments in favor of the distinction between lexical (Isačenko's qualifying) and superlexical (Isačenko's modifying) prefixes in Slavic languages. Lexical prefixes usually allow secondary imperfectives, formed by the imperfectivizing suffix -\textit{VA} as in (1a)-(1b), while superlexical ones normally do not allow secondary imperfectivization, as in (1c)-(1d).

(1) a. Ivan zastroil \textit{PRF} / zastraival \textit{IMP} pusty\textquoteleft .
   Ivan ZA-built was ZA-building area
   'Ivan built up / was building up a construction site.'

b. Varen'je zagustelo \textit{PRF} / zagustevalo \textit{IMP}.
   Jam ZA-thickened was ZA-thickening
   'The jam thickened up / was thickening up.'

c. Orkestr zaigral \textit{PRF} / (*zaigryval \textit{IMP}) marš.
   Orchestra ZA-played was ZA-playing march
   'Orchestra started playing the march.'

d. Sobaka zalajala \textit{PRF} / (*zalajava \textit{IMP}).
   Dog ZA-barked was ZA-barking
   'The dog started barking.'

Lexical prefixes may change a lexical meaning of an input verb in unpredictable ways (creating idiosyncratic meanings) and frequently alter its lexical argument structure (for instance, adding new arguments), as in example (2). Superlexical prefixes, on the other hand, modify a meaning of an input verb in a predictable way and do not affect its argument structure, as in (3).
(2) a. Ivan pil[^IMP] (čaj).

Ivan drank tea
'Ivan was drinking tea.'


Ivan ZA-drank sandwich with tea.INSTR
'Ivan suppressed the taste of the sandwich with tea.'

(3) a. Ivan smejalsja[^IMP].

Ivan laughed
'Ivan was laughing.'

b. Ivan zasmejalsja[^PRF].

Ivan ZA-laughed
'Ivan started laughing.'

Finally, in the cases where several prefixes attach to a verb, the superlexical prefixes are always external to the lexical ones (Di Sciullo and Slabakova 2005).


Mark ZA-VY-carried boxes from warehouse
'Mark began to carry out boxes from the warehouse.'

b. Mark *vyzanosil korobki iz sklada.

Some of the recent theories of prefixation account for the data in examples (1)-(4) above by assigning different structural positions to lexical and superlexical prefixes. For instance, Svenonius 2004 argues extensively that the lexical prefixes originate at the VP-level of syntactic structure, whereas the superlexical prefixes occur at the Aspectual Phrase level above the VP, as illustrated in (5).

(5) \[[\text{AP Superlexical pr.}]\ [\text{AP Second. imperf.}] \ [\text{VP Lexical pr.}] [\text{V-Verb}]]\]

Such account explains, among other things, why inchoative ZA-prefixed verbs apparently reject the secondary imperfectivizer. The secondary imperfectivization
operator applies to perfective prefixed verbs, but since an inchoative ZA- is a superlexical prefix that takes position higher than the secondary imperfectivizer within AspP, the imperfectivization of inchoative ZA-prefixed verbs is disallowed. For the same reason, the inchoative ZA- precedes other spatial / resultant prefixes that originate at VP, as in (4a). Ramchand 2004, building upon the Svenonius 2004 analysis, proposes that superlexical prefixes modify the temporal properties of an event directly in a regular and systematic way, regardless of the lexical meaning of the root verb.

One implication of the Svenonius 2004 account is that there are two different homophonous prefixes ZA- in Russian. One is the lexical ZA- (expressing spatial and resultant meanings), whereas the other is the superlexical ZA-, associated with the inchoative meaning. The former allows secondary imperfectivization and may significantly modify a lexical meaning of its input verb and/or its argument structure. The latter disallows secondary imperfectives, changes a meaning of an input verb in a predictable way, does not affect its argument structure and can stack atop lexical prefixes. The empirical evidence from the lexicon shows, however, that the distinction between lexical and superlexical ZA- is not as clear-cut as it seems to be at the first glance.

First, the occurrence of secondary imperfectivization with the lexical ZA- vs. its impossibility with the superlexical ZA- does not always hold. Some ZA-prefixed verbs, derived with the lexical ZA-, do not have secondary imperfective forms, as in (6a-6b). On the other hand, some inchoative ZA-prefixed forms allow secondary imperfectivization, as in the case of (7a-7b).

(6) a. Ivan zaasfaltiroval\(^{\text{PRF}}\) / (*zaasfaltirovyval\(^{\text{IMP}}\)) dorogu.

Ivan ZA-asphalted was ZA-asphalting road
'Ivan asphalted the road.'

b. Gvozd' zarzavel\(^{\text{PRF}}\) / (*zaržaveval\(^{\text{IMP}}\)).

Nail ZA-became rusty was ZA-becoming rusty
'The nail became rusty.'
The secondary imperfective forms of *zagovorit’*PRF (to start talking) in (7a) and
*zapet’*IMP (to start singing) in (7b), respectively, can only acquire a habitual reading
with the secondary imperfectivizer, but are still acceptable. Thus, the inchoative verbs
in (6) seem to violate the restriction on forming the secondary imperfectives with the
superlexical inchoative *ZA*. Ramchand 2004 suggests that secondary imperfective
forms with a habitual reading may be derived by a different imperfectivizing operator,
situated higher than the superlexical prefix within AspP. Under such proposal,
however, we would expect all inchoative verbs to freely occur with habitual
secondary imperfectives, which is not the case in Russian. Thus, an appeal to
secondary imperfectivization as a criterion for distinguishing between lexical and
superlexical prefixes is problematic, since the possibility vs. impossibility of the
secondary imperfectivization with a certain prefixed perfective verb seems to depend
on some other factors, rather than simply the type of the prefix that a given verb is
derived with.

A distinction between lexical and superlexical prefixes also concerns a
relationship between prefixation and perfectivization in Russian. The Svenonius 2004
proposal (and other proposals, based on it) implies that the prefixes in Russian are
perfectivizing operators, as well as modifiers of events. Other accounts of prefixation,
such as Filip 2003, Filip and Rothstein 2006, claim that the Slavic prefixes are
derivational operators, followed by the morphologically null perfectivizing operator
(this approach is reviewed in more detail in Chapter VII). In chapter I, I sided with
Filip 2003 account, presenting arguments in favor of drawing a distinction between
prefixes and a perfectivizing operator. Now, if a superlexical inchoative *ZA* is
situated above the secondary imperfectivizer on the syntactic tree, then the
perfectivizing operator applies after *ZA*, meaning that the perfectivizing operator
takes a higher position than a secondary imperfectivizer. Assuming that the secondary
imperfectivizer has a fixed position on the syntactic tree, such situation would mean that the perfectivizing operator does not have a constant position on the tree. So if a superlexical prefix originates above the secondary imperfectivizer, the perfectivizing operator will jump above the secondary imperfectivizer, following the prefix. But such scenario seems illogical to me, since it implies that the syntactic position of the perfectivizing operator is not fixed, in contrast with the position of the secondary imperfectivizer.

Another criterion for distinguishing between lexical and superlexical prefixes, offered in Svenonius 2004, is based on the argument that the superlexical prefixes never form idiosyncratic meanings. With respect to the inchoative ZA-, we have the following counterexamples to this argument in (8).

(8) a. Ivan zaguljal \textsuperscript{PRF}.
   Ivan ZA-walked
   'Ivan started cheating on his wife.' (literally, started walking)

b. Alex zapil \textsuperscript{PRF}.
   Alex ZA-drank
   'Alex became an alcoholic.' (literally, started drinking)

c. Rumjanez zaigral \textsuperscript{PRF} na ščekax.
   Flush ZA-played on cheeks
   'The flush reddened one's cheeks.' (literally, started playing)

The inchoative verbs in (8) acquire idiosyncratic meanings, contrary to the expectations. While examples of meaning shifts in inchoative verbs, such as (8), are relatively rare, they show that restriction on the formation of idiosyncratic meanings with the inchoative ZA- is not absolute. On the other hand, the discussion of resultant meaning of ZA- in chapter IV shows that many of so-called 'idiosyncratic' meanings of ZA- result from the properties of the BECOME AFF event and are interpreted by analogy with the four prototypical meanings of accumulation, cover, damage and possession. Hence, the correlation between the degree of idiosyncrasy of a certain meaning of ZA- and the lexical/superlexical status of the prefix appears to be problematic.
Finally, suppose that two different ZAs – a lexical and a superlexical – are found in the lexicon of Russian. Since the superlexical inchoative ZA- can apply to some secondary imperfectivized prefixed verbs, as illustrated in (4a), we would expect to find inchoative ZA-prefixed verbs that are derived from the spatial or resultant ZA-prefixed verbs, which underwent secondary imperfectivization. In other words, there should be cases in which a superlexical ZA- stacks atop a lexical ZA-, creating double ZA-prefixed verbs. However, I have not been able to find such examples in Russian. Naturally, one can argue that the superlexical and lexical ZAs select different verbs as their inputs and, thus, are barred from occurring with the same verb root. For instance, Romanova 2004 observes that the inchoative ZA- occurs with the indeterminate motion verbs, while the spatial ZA- goes with the determinate motion verbs in Russian. Schoorlemmer 1995 and Babko-Malaya 1999 argue that superlexical prefixes occur with unergative verbs, while lexical prefixes select unaccusative ones. Hence, intransitive determinate motion verbs constitute a subclass of unaccusative verbs in Russian, while intransitive indeterminate ones are a subclass of unergative verbs28. The correlation between unaccusative verbs and lexical spatial/resultant ZA-, on the one hand, and between unergative verbs and superlexical inchoative ZA-, on the other, does not explain, though, why some verbs alternate between inchoative and non-inchoative readings, as observed by Paillard 2004. Consider the following examples (9)-(10).

(9) a. Ivan govoril^IMP (*menja).
   Ivan talked me
   'Ivan talked.'

b. Ivan zagovoril^PRF.
   Ivan ZA-talked
   'Ivan started talking.'

c. Ivan zagovoril^PRF menja.
   Ivan ZA-talked me
   'Ivan made me confused by his talking.'

28 There are also transitive motion verbs in Russian that maintain the same distinction with respect to ZA-: the determinate ones occur with the spatial ZA-; the indeterminates – with the inchoative ZA-.
(10) a. Ivan tolkal \textsuperscript{IMP} telegu.
   Ivan pushed cart
   'Ivan pushed a/the cart.'

b. Ivan zatolkal \textsuperscript{PRF} telegu.
   Ivan ZA-pushed cart
   'Ivan started pushing the cart.'

c. Ivan zatolkal \textsuperscript{PRF} telegu v tunnel'
   Ivan ZA-pushed cart to tunnel
   'Ivan pushed the cart into the tunnel.'

The imperfective verb \textit{govorit'}\textsuperscript{IMP} (to talk) gives rise to two alternative ZA-prefixed forms: the inchoative \textit{zagovorit'}\textsuperscript{PRF} (to start talking) and the resultative \textit{zagovorit'}\textsuperscript{PRF} \textit{kogo-to} (to confuse someone by one's talking). Assume that \textit{govorit'}\textsuperscript{IMP} (to talk) is an unergative verb that occurs with superlexical inchoative ZA- in (9b). In such case, we expect to find in the lexicon a transitive \textit{govorit'} \textit{kogo-to} verb that selects for the lexical resultant ZA- in (9c). But *\textit{govorit'} \textit{kogo-to} is an ungrammatical form in Russian. Thus, it seems that both superlexical and lexical prefixes ZA- apply to an imperfective \textit{govorit'}\textsuperscript{IMP} (to talk), with the latter adding an incremental theme argument\textsuperscript{29}. The verb \textit{tolkat'}\textsuperscript{PRF} (to push) in (10a) is transitive, and yet it occurs with the superlexical inchoative ZA- in (10b), as well as with the lexical spatial ZA- in (10c). Thus, the evidence in (9)-(10) provides a counterargument to the claim that the superlexical and lexical prefixes are in complementary distribution with respect to selecting their inputs (and that the lexical and superlexical prefixes are connected to any ergative/unaccusative distinction). To conclude, I believe that the contrasts between inchoative and non-inchoative prefixes ZA- cannot be accounted for by simply relating them to different structural positions on the syntactic tree\textsuperscript{30}. Rather, such contrasts depend on the semantics of the inchoative ZA- and the nature of relations between the three meanings of ZA-. In the course of this chapter, I discuss

\textsuperscript{29} There is also a possibility that *\textit{govorit'} \textit{kogo-to} is an empty-based cranberry-type verb that serves as input verb for the lexical ZA-. However, such account goes against the idea that 'empty-based' verbs are lexically vague and need a prefix to acquire an autonomous interpretation. \textit{Talk} is not lexically vague, so in my view it is unreasonable to assume that an empty-based version of \textit{talk} exists on pair with the standard lexical form of \textit{talk} in the lexicon.

\textsuperscript{30} I leave open a possibility that the lexical/superlexical distinction may be relevant for other prefixes. However, in the case of ZA-, I shall argue later in this work that we deal with the variations of a single prefix ZA- that originates at the root level of a verb.
the inchoative meaning of ZA-. In the next chapter, I will discuss why the alternations of meanings of ZA-, such as those illustrated in (9)-(10), occur in the lexicon.

5.2 The Inchoative Meaning of ZA-

As in the previous chapters, the analysis of the inchoative meaning of ZA- consists of a number of consecutive steps. I discuss the inchoative ZA-prefixed forms, take a look on their input forms, compare between the outputs and the inputs with respect to an aspectual class, lexical meaning and argument structure, and provide a formal explanation for the observations, made at the comparison stage. Naturally, the inchoative prefix ZA- seems to be more complicated than its spatial and resultant 'colleagues', since it affects the running time of an event. Contrary to locations and objects that are denoted by thematic arguments, added via thematic role functions, the notion of time is deeply embedded in the semantics of event. Following Krifka 1998, I assume that there is a homomorphism relation between events and times, so that each particular event $e$ has a unique temporal trace $\tau(e)$ in the dimension of TIME. Time is, thus, a basic inseparable constituent of any event. In a certain sense, it is always there. The verbs are realized in the domain of time in the same way as locations are realized in the domain of space. Bearing this in mind, let's proceed to the discussion of the inchoative ZA-prefixed verbs.

5.2.1. The Inchoative ZA-Prefixed Verbs

An inchoative ZA-prefixed verb in Russian describes a start phase of a process / state, denoted by its imperfective counterpart. In such way, Russian allows expressing an inchoative meaning by a single verb in an out-of-blue context, which is usually not the case for English (though a single English verb can express an inchoative meaning with a proper contextual support, as in *At 10 am, John ran = John started running*). Some examples of inchoative verbs are given in (11)-(13) below.

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31 Russian also has an alternative structure for expressing beginning of process/state – using an infinitive verb in combination with the verbs načat’/stat’ (to begin / to become). This structure is often interchangeable with the ZA-prefixed form, though there are cases in which such interchange is not possible. Sheljakin 1969 provides some of such examples: rebenok načal xodit’ v školu vs. *rebenok zazodil v školu (the child began to go to school) or rumjanetz zaigrat na šekax - *rumjanetz načal igrat’ na šekax (A flush reddened one’s face. Literally translated, a flush began to play on one’s cheeks).
(11) Ivan zagovoril\textsuperscript{PRF}.

Ivan ZA-talked

'Ivan started talking.'

(12) Zvezda zasverkala\textsuperscript{PRF} na nebe.

Star ZA-twinkled on sky

'The star started twinkling in the sky.'

(13) Zarja zaalela\textsuperscript{PRF} na gorizonte.

Dawn ZA-was red on horizon

'The horizon started glowing red at dawn.'

An inchoative zagovorit'\textsuperscript{PRF} (to start talking) in (11) describes the beginning of a talking activity; the inchoative zasverkat'\textsuperscript{PRF} (to start twinkling) in (12) describes the beginning of the state of twinkling, while zaalet'\textsuperscript{PRF} (to start glowing red) in (13) refers to the initiation of the state of glowing red.

Isačenko 1960 argues that the inchoative ZA-prefixed verbs are basically intransitive. However, the data from the lexicon indicates that such claim is too strong. While most of inchoative ZA-prefixed verbs are, indeed, intransitive, there are some transitive examples as well, such as the ones in (14)-(16).

(14) Ivan zanosil\textsuperscript{PRF} cemodany (vverx po lestnice).

Ivan ZA-carried suitcases up on stairs

'Ivan started carrying suitcases (upstairs).'

(15) Mark zabrosal\textsuperscript{PRF} kamni. [Zemskaja, 1955]

Mark ZA-throw stones

'Mark started throwing stones.'

(16) Alex začital\textsuperscript{PRF} knigi.

Alex ZA-read books

'Alex started reading books.'
It is important to note that the example (16) acquires an inchoative reading with ZA- only when the verb *read* is followed by a bare plural direct object. In such case, the direct object *books* in (16) refers to books in general, rather than to some specific books. The addition of a numeral expression or an explicit measure modifier to a plural object disallows the inchoative reading, as illustrated below.

(17) Ivan začital\(^{PRF}\) (*vse) / (*tri) / (*kak minimal tri) / knigi.

Ivan ZA-read all three at least three books

'Ivan started reading books (in general).'

I'll discuss this restriction on the interpretation of direct object of *read* in more details in the following subsections of this chapter.

Some additional examples of the inchoative ZA-prefixed verbs are *zavolnovatsja*\(^{PRF}\) (to start feeling worried), *zaželjet*\(^{PRF}\) (to become as yellow), *zarabotat*\(^{PRF}\) (to start working), *zagruštit*\(^{PRF}\) (to start feeling sad), *zabegat*\(^{PRF}\) (to start running), *zakričat*\(^{PRF}\) (to start screaming), *zapet*\(^{PRF}\) (to start singing), *zabit*\(^{PRF}\) (to start hitting), *zakurit*\(^{PRF}\) (to start smoking), *zapec pirogi*\(^{PRF}\) (to start baking cakes), *zatolkat*\(^{PRF}\) *telegu* (to start pushing the cart). The intersection of the lexical entries of inchoative verbs provides the following model of control.
The Model of Control of the Inchoative ZA-Prefixed Verbs:

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The intransitive inchoative ZA-prefixed verbs have one obligatory participant, which occupies the syntactic subject position and is assigned nominative case. The subject can be assigned a role of agent, such as Ivan in (11); an instrument, such as star in (12); or an experiencer, such as Mark in Mark zavalnovalsja [Mark began to worry]. The transitive inchoatives have two participants – a subject and a direct object. The subject of a transitive inchoative form has the same syntactic-semantic properties as in an intransitive form. The object of the transitive inchoative verb occupies the direct object position and is assigned accusative case by the verb. In terms of its thematic role, it can be characterized as a holistic theme (cart in Ivan zatolka telegu [Ivan started pushing the cart]), a role of non-quantized theme (books in (16)), or a stimulus (flowers in Ivan zanjuxal vety [Ivan started smelling the flowers]).
The inchoative ZA-prefixed verbs have the following interpretation structure.

**Interpretation Structure for the Inchoative Cluster Meaning of ZA**

A person or object X brings about a new process or state of affairs V, which lasts for at least (conventionally or contextually defined) minimal period of time.

As is evident from the definition above, the arguments of inchoative verbs are not directly affected in the course of the inchoative event, in the sense that they do not undergo any additional changes, besides the ones denoted by the lexical semantics of an input verb. For instance, if an object of a transitive inchoative verb is a holistic theme, it will presumably change its position in space, but the manner of such change is not dictated by the prefix. Rather, the function of the inchoative ZA is to ensure that a given process / state, denoted by an input verb, has passed from the state of non-existence (*nebytie*) into existence (see also discussion in Šeljakin 1969). The state of existence means that a process or a state lasted long enough to validate that such process or state took place in the real world. The inchoative ZA does not put any restrictions on the temporal duration of an initiated process/state once its existence is established. Thus, the process/state that was initiated at some moment in past can potentially be ongoing at the present moment. Hence, the phrase *and is still X-ing*, where X stands for an initiated process/state, can be used as a grammatical test for distinguishing inchoative ZA-prefixed verbs from other types of ZA-prefixed verbs (spatial and resultant), which entail completion of a given event.

(18) a. Ivan zagovoril \textsuperscript{PRF} i do six por govorit \textsuperscript{IMP}.
    Ivan ZA-talked and till this time is talking
    'Ivan began to talk and is still talking.'

b. Zvezda zasverkala i do six por sverkaet \textsuperscript{IMP}.
    Star ZA-twinkled and till this time is twinkling.
    'The star started twinkling and is still twinkling.'

Such implication is optional, however, and may be cancelled by the context, as in examples (19a)-(19b).
(19) a. Ivan zagovoril PRF, no ego bystro prervaliPRF.
   Ivan ZA-talked but him fast interrupted
   'Ivan began to talk, but was quickly interrupted.'

   b. Ivan zabolet PRF, no bystro popravilsjaPRF.
   Ivan ZA-fell ill but fast recovered
   'Ivan became sick, but recovered fast.'

An additional test for inchoative ZA-prefixed verbs is a paraphrasing of an
inchoative ZA-prefixed form with the načat' (to begin) verb, followed by an infinitive
form of an imperfective input verb for ZA-.

(20) a. Ivan zasmejalsja PRF.
   Ivan ZA-laughed
   'Ivan started laughing.'

   b. Ivan načal PRF smejatsja IMP.
   Ivan began to laugh
   'Ivan started laughing.'

The inchoative prefix ZA- is associated with an interesting phenomenon, not
observed with the two previous meanings: a correlation between the inchoative ZA-
and a non-quantized plural theme argument. As we have seen in (17), an inchoative
reading of čitat'PRF (to read) is allowed only when it takes bare plural direct object.
Thus, the transitive VP zacitat'PRF knigi alternates between two readings, depending
on the status of its theme argument. When the theme is interpreted as specific
quantized books, the given VP acquires a resultant reading to damage by reading.
When the books are interpreted as some general unspecific books, the given VP takes
an inchoative reading. The correlation between an inchoative ZA- and generic theme
is discussed in the following chapter VI, which accounts for the alternations of
meanings of the prefix ZA-.

As mentioned above, another phenomenon, associated with the inchoative prefix
ZA-, is a restriction on deriving secondary imperfective forms out of inchoative ZA-
prefixed forms. As I demonstrated in (7), such restriction is not absolute. However,
there seems to be a strong tendency of disallowing secondary imperfectivization with
the inchoative Za-. This fact has been mentioned by Zemskaja 1955 (among others), who adopts an intuitive explanation from Vinogradov 1947 that a duration of the beginning phase is better expressed by an alternative načat’ (begin) + infinitive structure, than by a ZA-prefixed inchoative verb. Those inchoative forms that do undergo secondary imperfectivization acquire a habitual reading of imperfective aspect, rather than a progressive one. Such interpretation is not abnormal, since an absence of an ongoing process reading for a secondary imperfective form is a common phenomenon for achievement verbs in Russian, which can only have an imperfective counterpart with an iterative/habitual interpretation (what Padučeva 1996, 2004 calls a trivial meaning of imperfective aspect). So assuming that the inchoative ZA-prefixed verbs are achievements could, in principle, account for the anomaly of missing secondary imperfectives with the ongoing progressive interpretation. The problem is, however, that most inchoatives block even a habitual secondary imperfectivization. So, why is the secondary imperfectivization generally disallowed with the inchoative ZA-prefixed forms? I do not have a definite answer to this question yet, but I will make few suggestions as to what might be the cause for this phenomenon in the following sections.

5.2.2. The Input Forms for the Inchoative ZA-Prefixed Verbs

The types of verbs that serve as inputs for the inchoative prefix Za- have been discussed at length in the literature (Isačenko 1960, Zemskaja 1955, Šeljakin 1969, Zaliznjak 1995 among others). Though the input verbs for the inchoative Za- come from a variety of thematic classes, it is possible to isolate a number of lexical classes that acquire an inchoative meaning of Za- on a regular basis. The first such class is the indeterminate motion verbs – a small closed class of imperfective motion verbs in Russian that are traditionally analyzed as depicting a motion in general, without specific direction or goal [their determinate correlates acquire the spatial interpretation with Za- as was shown in chapter III] (Foote 1967; Forsyth 1970; Zaliznjak and Shmelev 2000).

(21) a. Ivan brodil IMP po lesu.
   Ivan wandered around forest
   'Ivan wandered in the forest.'
b. Ivan zabrodil\textsuperscript{PRF} po lesu.

Ivan ZA-wandered around forest
'Ivan began to wander in the forest.'

(22) a. Ivan taskal\textsuperscript{IMP} čemodan vverx po lestnitze.

Ivan dragged suitcase upwards on stairs
'Ivan dragged a/the suitcase upstairs.'

b. Ivan zataskal\textsuperscript{PRF} čemodan vverx po lestnitze.

Ivan ZA-dragged suitcase upwards on stairs
'Ivan began to drag a/the suitcase upstairs.'

Additional examples of indeterminate motion verbs are \textit{begat}^{\text{IMP}} (to run), \textit{plavat}^{\text{IMP}} (to swim), \textit{nosit}^{\text{IMP}} (to carry), \textit{vodit}^{\text{IMP}} (to lead, drive), \textit{letat}^{\text{IMP}} (to fly), \textit{lazit}^{\text{IMP}} (to climb), \textit{xodit}^{\text{IMP}} (to go). The indeterminate motion verbs are not the only verbs of motion that are compatible with the inchoative prefix ZA-. Additional verbs that describe motion, such as \textit{prygat}^{\text{IMP}} (to jump), \textit{tolkat}^{\text{IMP}} (to push), \textit{porxat}^{\text{IMP}} (to flatter), \textit{skakat}^{\text{IMP}} (to ride) accept an inchoative interpretation with ZA-\textsuperscript{32}. The imperfective \textit{throw} class verbs – \textit{brosat}^{\text{IMP}} (to throw), \textit{kidat}^{\text{IMP}} (to cast), š\textit{vyrjat}^{\text{IMP}} (to throw with force) – also take an inchoative interpretation with the prefix ZA-.

An important point concerns the relationship between the goal argument and the meaning of ZA-. The traditional accounts of motion verbs claim that determinate motion verbs express a movement in a specific direction towards a certain goal, while the indeterminate motion verbs express a motion in general, without any particular direction or goal. Thus, in some sense, the determinate motion verbs are perceived as potentially bounded, having implicit goal arguments in their denotations, while the indeterminate ones are not bounded (Romanova 2004, Šeljakin 1969). Šeljakin 1969 suggests that since determinate motion verbs are bounded (predel'nye), i.e. have inherent limits, imposed by their goals, they acquire a resultative reading with ZA- (while indeterminate ones do not have such limits and, hence, occur with inchoative ZA-). Valeeva 2001 argues, however, that the inchoative ZA-prefixed verbs, derived from indeterminate and other non-directional motion verbs, can express the beginning

\textsuperscript{32} The interesting fact is that the semelfactive perfective forms, derived from these motion verbs, systematically acquire a spatial meaning of ZA-, as in \textit{prygnut}^{\text{PRF}} (to jump) – \textit{zaprygnut}^{\text{PRF}} (to jump in). This phenomenon is discussed in the following chapter.
of a directed motion toward a specific destination. The examples in (23) support her claim, illustrating that the inchoative meaning of \(ZA\)- is maintained, even in the presence of a goal argument with a non-directed input motion verb.

(23) a. Ivan begal \textbf{IMP} v magazin.
   Ivan ran to store
   'Ivan used to run to the store.'

b. Ivan zabegal \textbf{PRF} v magazin.
   Ivan \(ZA\)-ran in store
   'Ivan started to run to the store.'

c. Ivan prygal \textbf{IMP} na stul.
   Ivan jumped on chair
   'Ivan jumped on a/the chair.'

d. Ivan zaprygal \textbf{PRF} na stul.
   Ivan \(ZA\)-jumped on chair
   'Ivan started jumping on the chair.'

Thus, the examples in (23) indicate that the correlation between determinate motion verbs and the spatial prefix \(ZA\)-, and between indeterminate motion verbs and the inchoative \(ZA\)-, cannot be explained simply in terms of directionality of a motion and/or a presence of a goal argument. I will come back to this correlation between the readings of \(ZA\)- and the types of motion verbs in the following chapter, where I will attempt to provide an explanation for it.

Another lexical class of imperfective verbs that acquire an inchoative reading with \(ZA\)- is verbs of speech and sound, which can be divided into various subclasses, including \textit{verbs of manner of speaking}, such as \(orat\textbf{IMP}\) (to scream), \(septat\textbf{IMP}\) (to whisper); \textit{chitchat verbs}, such as \(sporit\textbf{IMP}\) (to argue), \(boltat\textbf{IMP}\) (to chatter); \textit{verbs of sounds made by animals}, such as \(mjaukat\textbf{IMP}\) (to mew), \(lajat\textbf{IMP}\) (to bark); \textit{verbs of sound emission}, such as \(\text{\v{s}umer}\textbf{IMP}\) (to make noise), \(bibikat\textbf{IMP}\) (to beep) (Šeljakin 1969, Levin 1993, Zaliznjak 1995).
(24) a. Koška Murka mjaukalaIMP v podvale.
   Cat Murka mewed in basement
   'Murka the cat mewed in the basement.'

   b. Koška Murka zamjaukalaPRF v podvale.
   Cat Murka ZA-mewed in basement
   'Murka the cat started mewing in the basement.'

A large lexical class of visual verbs denoting color, light and optical phenomena is also compatible with an inchoative meaning of ZA-. The verbs in this category include verbs of light emission, such as sijat'IMP (to shine), mertzat'IMP (to glimmer), sverkat'IMP (to twinkle) and verbs of being seen in a certain color, such as belet'IMP (to look white), zelenet'IMP (to look green), alet'IMP (to look red, to redden)33 (Šeljakin 1969, Levin 1993).

(25) a. Vdaleke zeleneli IMP derevja.
   Far away greened trees
   'The trees far away looked green.'

   b. Vdaleke zazeleneliPRF derevja.
   Far away ZA-greened trees
   'Far away, the green of the trees began to appear.'

Inchoative ZA- occurs with verbs, denoting various emotional and physiological states: verbs of bodily processes, such as tošnit'IMP (to feel sick), čixat'IMP (to sneeze); verbs of non-verbal expression, such as smejatsja IMP (to laugh), grimasničat'IMP (to grimace), plakat'IMP (to cry); verbs of gestures, such as morgat'IMP (to blink), kivat'IMP (to nod), xlopat'IMP (to clap); verbs of psychological state, such as volnovat'sja IMP (to worry), grustit'IMP (to be sad), gorditsjaIMP (to feel

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33 I am not sure that the latter class has an analog in English. The verbs of being seen in a certain color are distinct from the verbs of change of color, such as redden and whiten (Levin, 1993), since they do not imply a change. Some of these verbs, though, such as željet'IMP (to yellow), are ambiguous between the meanings of look X and become X, where X stands for color. The former meaning acquires with ZA- an interpretation of start looking/emitting X, as in vdali žaželteli peski (the sands started to emit yellow light far ahead), while the latter means become X, as in stranicy knigi zaželteli (the pages of the book became yellow).
proud), *nervničat’IMP* (to feel nervous); verbs of desire, such as *xoter’IMP* (to want) (Šeljakin 1969, Levin 1993).

(26) a. Harry skučal IMP na uroke Snejpa.
   Harry felt bored on class of Snape
   'Harry felt bored at Snape's class.'
   b. Harry zaskučal PRF na uroke Snejpa.
   Harry ZA-felt bored on class of Snape
   'Harry began to feel bored at Snape's class.'

The inchoative prefix *ZA*- can be used with some transitive verbs to mark the initiation of habitual action, as in *zapec’PRF pirogi* (to start baking cakes), *zavarit’PRF supy* (to start cooking soups), *začitat’PRF knigi* (to start reading books) (Šeljakin 1969; Zaliznjak 1995). Šeljakin 1969 argues that in such cases the *ZA*-derived forms are unbounded (nepredel’nyje). As noted earlier, a bare plural direct object in such inchoative verbs is interpreted generically, rather than some specific quantity.

In the previous chapters, I discussed the compatibility of the input verbs with the meaning of their *ZA*-prefixed outputs. For instance, the determinate motion verbs displayed a high compatibility with their output forms in terms of expressing directed motion to some location. In the case of inchoative *ZA*-, on the other hand, the issue of compatibility of input forms with the meaning of their *ZA*-prefixed outputs is largely irrelevant. The input verbs generally do not express an initiation of process / state, while their inchoative counterparts all focus on the initial stage of the given process/state.

**5.3 Comparison: The Inchoative *ZA*-Prefixed Verbs vs. their Inputs**

As in the previous chapters III and IV, I compare between the input verbs and their inchoative *ZA*-prefixed counterparts in terms of: a) aspeccional shifts in lexical class; b) shifts in lexical meaning and argument structure. In the case of the inchoative *ZA*-, one may argue that the second part of comparison stage is irrelevant. Contrary to the previously discussed spatial and resultant meanings of *ZA*-, the inchoative *ZA* seems to change a lexical meaning of an input verb in a systematic way (a beginning of process/state), without affecting its argument structure or a choice of arguments.
However, I believe that the situation is not that simple. First, as noted in Šeljakin 1969, the inchoative ZA- is not always substituted by begin + infinitive construction. Such data suggests that the semantic contribution of ZA- to the lexical meaning of an input verb goes beyond a simple emphasis of its onset stage. Moreover, the inchoative ZA-prefixed verbs generally reject secondary imperfectivization, in contrast with the verb načati PRF (to begin), which has a secondary imperfective form načinat IMP.

(27) a. Ivan načal PRF smejatsja IMP / zasmejalsja PRF v nepodxodjaščij moment.
   'Ivan began to laugh ZA-laughed in inappropriate moment
   'Ivan started laughing at a bad time.'

   b. Ivan načinal IMP smejatsja IMP / (*zasmeivalsja IMP) v nepodxodjaščij moment.
   'Ivan began to laugh in inappropriate moment
   'Ivan used to start laughing at a bad time.'

Second, some transitive verbs acquire an inchoative reading with ZA- only when their direct objects are non-quantized. Such piece of evidence indicates that the inchoative ZA- may be sensitive to semantic properties of a theme argument of a transitive accomplishment input verb.

Finally, the prefix ZA- implies that an initiation event has a flavor of suddenness and intensity. Šeljakin 1969 argues that for this reason the inchoative ZA- is rarely used with abstract verbs, associated with official, scientific or literature registers, such as funkzionirovat IMP (to function), lidirovat IMP (to lead, to be a leader), diskutirovat IMP (to discuss).

These observations indicate that the inchoative prefix ZA- may have additional semantic effects on the lexical semantics of an input verb, rather than just a meaning of initiation. And while the inchoative prefix ZA- does not seem to add new lexical arguments or affect the choice of existing ones, we witnessed a certain correlation between a non-quantized status of direct object in some transitive verbs, and an inchoative reading these verbs acquire with ZA-. Thus, the issues above seem to be important for understanding the inchoative ZA- works and will be discussed in more detail later on.
5.3.1 Aspectual Shifts in the Input Verbs

As we already know from previous discussions, basic imperfective verbs in Russian can be classified in terms of three out of four Vendler classes – activities, states and accomplishments. Achievement verbs in Russian are perfective (either basic forms or derived from other classes via shift-operations) and their secondary imperfective forms can be used under a habitual reading only (see Padučeva 1996, 2004 for a discussion of the trivial reading of imperfectivized achievement verbs in Russian). Assuming that the imperfective input verbs for the inchoative ZA- come from all the three classes above, there is a need to distinguish between the three in a reliable way. An incremental modification test, such as postepenno (gradually), which was widely used with the previous meanings of ZA-, can draw a line between imperfective activities and states on the one hand, and imperfective accomplishments, on the other. Imperfective activities and states can be distinguished with the deliberately and for tests (Dowty 1979, Rothstein 2004). Such combination of diagnostic tests would allow sorting the input verbs for the inchoative meaning of ZA- into imperfective activities, accomplishments and states. As for the Vendlerian classification of the inchoative ZA-prefixed verbs themselves, I shall use the standard temporal modification tests in X time, for X time and at X time and an incremental modification test postepenno (gradually) to determine a lexical aspectual class of the inchoative verbs.

Let’s take the verbs govorit’IMP (to speak), xodit’IMP (to go), bolet’IMP (to feel sick), sverkat’IMP (to twinkle), čitat’IMP (to read) and stroit’IMP (to build) as a small sample of input verbs for the inchoative ZA-. The latter two verbs usually take the 'extent of change' meaning with the prefix ZA- and require bare plural direct objects as their complements in order to acquire an inchoative reading with ZA-.

(28) a. Ivan (*postepenno) govorilIMP s Robertom.
   Ivan gradually talked to Robert
   'Ivan talked to Robert.'

b. Mark (*postepenno) xodilIMP v magazin.
   Mark gradually walked to store
   'Mark gradually walked to the store.'
c. Daniel (*postepenno) bolelIMP vetrjankoj.
Daniel gradually was sick with chicken-pox
'Daniel was sick with chicken-pox.'
d. Poljarnaja zvezda (*postepenno) sverkalaIMP na nebe.
Pole star gradually twinkled on sky
'The North Star twinkled in the sky.'
e. George čital IMP knigi postepenno.
George read books gradually
'George read (the) books gradually.'
f. Lev postepenno stroil IMP doma.
Lev gradually built houses
'Lev gradually built (the) houses.'

(29) a. Ivan (?)namerenno) govoril IMP s Robertom / zastavil PRF Roberta govorit' IMP.
Ivan deliberately talked to Robert forced Robert to talk
'Ivan deliberately talked to Robert / forced Robert to talk.
b. Mark (?)namerenno) xodil IMP v magazin / zastavil PRF Alexa xoditi IMP v magazin.
Mark deliberately walked in store forced Alex to go in store
'Mark deliberately walked to the store / forced Alex to go to the store.'
c. Daniel (*namerenno) bolel IMP / *zastavil Davida boletIMP.
Daniel deliberately was sick / forced David to be sick
d. Poljarnaja zvezda (*namerenno) sverkala IMP na nebe.
Pole star deliberately twinkled on sky
e. George namerenno čital IMP knigi / zastavil detej čitat'IMP knigi.
George deliberately read books forced children to read books
'George read books deliberately / forced children to read books.'
f. Lev namerenno stroil IMP doma / zastavil Arkadija stroit'IMP doma.
Lev deliberately built houses forced Arkadij to build houses
'Lev deliberately built houses / forced Arkadij to build the houses.'

The results of the diagnostic tests in (28)-(29) establish that citat'IMP (to read) and stroit'IMP (to build) are imperfective accomplishments, in light of their compatibility with gradually in (28e)-(29f). Examples (29d)-(29e) show that sverkat'IMP (to
twinkle) and bolet'IMP (to be sick) are states, due to their incompatibility with 
deliberately and force to tests. That leaves us with govorit'IMP (to talk) and xodit'IMP
(to go), which, by a process of elimination, must be activity verbs. Note, though, that
examples (29a)-(29b) with deliberately sound a bit peculiar in an 'out-of-blue'
scenario and require some contextual support. Thus, Mark deliberately went to the
store in (29b) is better in a situation in which Mark can do the shopping via the
internet, but prefers to walk all the way to the store instead. Making (29d)
grammatical with deliberately, on the other hand, would be practically impossible in
any context, other than some metaphorical or poetic personification of the North Star.

Let's now apply the diagnostic tests to the inchoative ZA-prefixied outputs of the
input verbs in (28)-(29).

(30) a. Ivan zagovorilPRF s Robertom *postepenno / *čas / *za čas / v 12:00.
   Ivan ZA-talked with Robert gradually hour in hour in 12:00
   'Ivan started talking to Robert at 12:00.'

b. Mark zaxodilPRF po komnate *postepenno / *čas / *za čas / v 12:00.
   Mark ZA-went around room gradually hour in hour in 12:00
   'Mark started walking around the room at 12:00.'

c. Daniel (?postepenno) zabolelPRF vetrjankoj *čas / *za čas / v čera / ??v 12:00.
   Daniel gradually ZA-was sick with chicken-pox hour in hour yesterday in 12:00
   'Daniel gradually became sick with chicken-pox yesterday.'

d. Poljarnja zvezda (*postepenno) zasverkalaPRF na nebe *čas / *za čas / v polnoč.
   Pole star gradually ZA-twinkled on sky hour in hour in midnight
   'The North Star started twinkling in the sky at midnight.'

e. George (*postepenno) začitalPRF knigi *čas / *za čas / *v 12:00.
   George gradually ZA-read books hour in hour in 12:00
   'George started reading books.'

f. Lev (*postepenno) zastroil domaPRF *čas / *za čas / *v 12:00.
   Lev gradually ZA-built houses hour in hour in 12:00
   'Lev started building houses.'

The results in (30) above provide some interesting observations. The activity-based
verbs zagovorit'PRF (to start talking) and zaxodit'PRF (to start going) occur only with
the at 12:00 modifier, localizing a beginning event to a specific point in time. The
state-based verbs zabolet'PRF (to become sick) and zasverkat'PRF (to start twinkling) show a certain division with respect to the diagnostic tests. Zasverkat'PRF (to start twinkling) allows a specific temporal localization at a given point of time and is incompatible with other modifiers. Zabolet'PRF (to become sick), on the other hand, is better compatible with a temporal interval, such as yesterday, than with a specific moment, such as at 12:00. Though zabolet' seems to be incompatible with za čas (in an hour), it sounds better with another temporal modifier v tečenii časa (during an hour). Zabolet' also allows some degree of compatibility with gradually, though it still sounds quite unnatural in the 'out-of-blue' context. The accomplishment-based verbs začitat'PRF (to start reading) and zastroit'PRF (to start building), on the other hand, do not occur with any of the temporal modifiers, including at X time. Perhaps, these two verbs refer to beginning of a general habit of reading / building, rather than to a particular temporal instantiation of a specific reading / building event. Thus, the idea of habituality may be incompatible with a specific moment on the scale of time. Note that začitat' and zastroit' can be modified with a general modifier one day, as in (31).

(31) a. V odin prekrasnyj den' Ivan začital knigi.  
In one fine day Ivan ZA-read books  
'One day Ivan started reading books.'

b. V odin prekrasnyj den' Ivan zastroil doma.  
In one fine day Ivan ZA-built house  
'One day Ivan started building houses.'

The evidence so far points in favor of analyzing inchoative ZA-prefixixed verbs as achievements, since most examples in (30) are compatible with at X time modifier. However, some examples in the lexicon indicate that the inchoative event can last for a non-minimal period of time.

(32) a. Za čas, kompjuter postepenno zarabotal.  
In hour computer gradually ZA-worked  
'In an hour, the computer gradually started working.'
b. Condi postepeno zagovorila po-russki v tečenii goda.

Condi gradually ZA-talked in Russian in during year
'Condi gradually began to speak Russian within a year.'

As Ramchand 2004 correctly observes, the example in (32a) measures not the actual time of computer working, but rather the time it took for computer to become operational. In the same manner, example (32b) refers not to the actual time of Condi speaking Russian, but to the temporal interval it took her to master the language. Examples like those in (32) above illustrate the precise function of the inchoative prefix ZA-, namely; to measure an temporal interval between the first instant at which the given event occurs and the first temporal point at which the event \( X \) can be identified as such (i.e. its time of validation). In other words, the inchoative ZA-singles out a minimal temporal interval at which the designated event undergoes a change, using Šeljakin's words, from a state of non-existence (nebytije) into existence (bytije). Since state verbs are true at instants, while activity verbs hold at minimal temporal intervals (Dowty 1979), such change is normally perceived as near-instantaneous, accounting for what seems to be achievement readings of the inchoative ZA-prefixed verbs. Examples in (32), therefore, constitute special cases of inchoative events in which a change from a non-existence into existence of a given event (or from zero duration to its time of validation) is not temporally minimal. For instance, in (32a) we get an interpretation that it took an hour for computer to become workable, or operational. In such cases, an inchoative verb displays characteristics of an accomplishment, occurring with gradually and in \( X \) time modifiers. Note that the inchoative prefix ZA- does not impose any restrictions on the duration of an initiated process/state once it reaches its validation time. Thus, the process can be immediately interrupted at the validation point, as in (33a), or can go on indefinitely (or, at least, up to the present moment in time), as in (33b).

(33) a. Computer zarabotal PRF, no tut že otklučilsja PRF.

Computer ZA-worked but right away shut down
'Computer started working, but shut down right away.'
b. Computer zarabotal$^{\text{PRF}}$, i do six por rabotaet$^{\text{IMP}}$.

Computer ZA-worked and till now is working

'Computer started working and is still working.'

To sum up, the inchoative ZA-prefixed verbs exhibit the same alternation between temporally minimal and extended readings, as the spatial (and some resultant) ZA-prefixed verbs, though temporally minimal readings are more normative. Thus, I conclude that the inchoative ZA- is a lexical aspectual operator that derives inchoative accomplishments out of input activity and state verbs. Some imperfective accomplishment verbs, such as čitat$^{\text{IMP}}$ (to read), also occur with the inchoative ZA-, granted that they take non-quantized plural arguments. The correlation between the input and the output verbs in terms of Vendler classes is summarized in the following table 5.1.

<table>
<thead>
<tr>
<th>Input Verbs</th>
<th>Inchoative ZA-Prefixed Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Accomplishment (with preference for temporally minimal interpretation)</td>
</tr>
<tr>
<td>State</td>
<td></td>
</tr>
<tr>
<td>Accomplishment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(with bare plural argument, interpreted 'in general')</td>
</tr>
</tbody>
</table>

Table 5.1

Inchoative ZA-prefixed verbs and their input forms w.r.t. Vendlerian Class

We have seen in the previous chapters that ZA- creates special subtypes of accomplishment events that require extending our theory of accomplishments, based on Rothstein 2004 analysis. The spatial ZA- derived locative accomplishments, where the BECOME AT event measured the changes in spatial location, denoted by the goal argument. The resultant ZA- introduced the BECOME AFF subevent that imposed specific restrictions on the manner of change of the theme arguments. By analogy with these meanings, I shall argue that the inchoative prefix ZA- introduces the BECOME INITIATED subevent (or, in a short form, BECOME INI), which imposes its own restrictions on the temporal trace of a modified event. I present a formal
analysis of inchoative accomplishments in 5.4, but beforehand I'd like to discuss some of the effects the inchoative ZА- has on the lexical meaning and argument structure of an input verb (as briefly mentioned in the introduction section in 5.1).

5.3.2 Shifts in the Lexical Meaning and Argument Structure in the Input Verbs

While the inchoative ZА- does not seem to have as strong affect on the lexical meaning and argument structure of an input verb as its spatial and resultant variations, there is some evidence that it imposes some more subtle semantic modifications on the input verbs. With respect to the shift in the lexical meaning of the input verbs, I shall argue that the inchoative ZА- applies certain semantic restrictions to the input verb, which account for the general incompatibility of the derived ZА- prefixed form with the semantics of secondary imperfectivization. My argument is based on two pieces of evidence: the interchangeability of ZА- with the begin + infinitive construction and its occurrence with the adverbial modifiers of manner. Let's review each of these arguments in their turn.

As mentioned earlier, were the function of the inchoative ZА- restricted solely to picking out the onset stage of an event (Dowty 1979, Landman 2007), denoted by an input verb, we would expect it to be fully interchangeable with the begin + infinitive phrase in Russian. Šeljakin 1969 argued that the inchoative ZА- is used for denoting single inchoative events, characterized by high intensity, unexpectedness and short temporal duration. He mentions a number of cases in which the inchoative ZА- cannot apply to certain input verbs, claiming that such input verbs are irreconcilable with the meanings of intensity, of an action, its spontaneity, singularity and near-instantaneous temporal duration (Šeljakin 1969: 32). Such input verbs include: a) secondary imperfective forms of perfective prefixed verbs that denote iterative actions, such as prиpljasvyvatIMP (to be jumping around), pokašlivatIMP (to be coughing repeatedly); b) imperfective verbs that denote prolonged continuous states (dlitel'noe sploshnoje deistvie), such as spatIMP (to sleep), ležatIMP (to lie), visetIMP (to hang); c) verbs that denote life-span occupations and habits; such as učitel'stovatIMP (to work as a teacher), predsedatel'stovatIMP (to preside, serve as a chairman) (examples taken from Šeljakin 1969: 32). On the other hand, these groups of verbs are compatible with the begin + infinitive construction, as illustrated in (34).
(34) a. Ivan (*zapokašival PRF) načal PRF pokašivat IMP.
   Ivan was PO-coughing began to be PO-coughing
   'Ivan began to cough repeatedly.'

   b. Ivan (*zaždal PRF) stal PRF ždat IMP zvonka ot Mary.
   Ivan waited came to wait call from Mary
   'Ivan started waiting for a call from Mary.'

The verbs that Šeljakin 1969 describes as incompatible with the inchoative meaning of ZA- fall into two general categories: iterative situations, such as *coughing repeatedly* in (34a); and long-term states or occupational activities, which have a flavor of habituality, such as *teach for a life time*. Thus, the inchoative ZA- seems to reject inherently iterative/habitual verbs as its inputs. The obvious conclusion at this point is that the meaning of inchoative ZA- is incompatible with the meanings of iterativity and habituality. However, this conclusion is wrong for two reasons. First, we have seen that the inchoative ZA- is compatible with such habitual situations as *start reading books* in (16) and *start to run repeatedly to the store* in (23b). Second, even if the inchoative prefix ZA- excludes iterative verbs as its input, it does not explain why the inchoative ZA-prefixed verbs themselves cannot be iterativized after the application of ZA-.

Why, then, do most inchoative ZA-prefixed verbs clash with iterative/habitual readings, brought by the secondary imperfectivization? Behavior of the inchoative ZA-prefixed verbs with some adverbial modifiers of manner may shed some light on that mystery. As noted in Šeljakin 1969, the inchoative ZA- brings a flavor of unexpectedness to the interpretation of a derived inchoative form. Thus, the inchoative verbs are compatible with adverbial modifiers that describe a sudden, intense change, such as *vdrug* (suddenly), *vnezapno* (suddenly), *neozoždanno* (unexpectedly). Moreover, they are odd with the adverbial modifiers that indicate a pre-planned character of the given event. Consider the contrasts in the following examples (35)-(36).

(35) a. Ivan vdrug / neozhidanno zagovoril PRF.
   Ivan suddenly unexpectedly ZA-talked
   'Ivan suddenly / unexpectedly began to talk.'
b. Ivan zagovoril PRF * po planu / ?? kak ozhidalos' / ?kak bylo izvestno zaranee. 
Ivan ZA-talked by plan as was expected as was known ahead
'Ivan started talking.'

(36) Flag vnezapno / (*predskazuemo) zatrepetal PRF na vetru.
Flag suddenly / predictably ZA-wavered in wind
'The flag suddenly started wavering in the wind'.

The inchoative ZA-prefixed verbs in (35)-(36) are acceptable with the sudden-type modifiers that point to an unexpected nature of an event, but are odd with such modifiers, as predictably, according to plan, as known ahead, which suggests a predetermined knowledge about an initiation of the event in question. Thus, it seems that the inchoative prefix ZA- is not simply a technical tool for making reference to an initial stage of an event. Rather, it indicates that the initiation event that brought some process or state, denoted by the imperfective input verb, into existence was, in some sense, unexpected and unique occurrence. The inchoative ZA- brings this implication of uniqueness to the lexical semantics of the input verbs, accounting for the difficulty of reconciling the inchoative ZA-prefixed verbs with the secondary imperfectivization. Since each initiated event is unique and unexpected, it is difficult to give it habitual or iterative interpretations, which are associated with the polar notions of regularity and predictability. Since the secondary imperfectivization of temporally-minimal inchoative verbs assigns them iterative/habitual interpretation (Padučeva's 2004 trivial reading), the impossibility of secondary imperfectivization with the inchoative ZA-prefixed verbs can be accounted for on semantic, rather than syntactic grounds\(^ {34} \).

In other words, ZA- and a secondary imperfectivization are both event modifiers that affect a running time of their input verbs, but do so in different ways. Since an event cannot be measured more than once (Filip 2003, Rothstein 2004), especially by two conflicting time modifiers (uniqueness vs. regularity), the modification of an input verb by the inchoative ZA- normally excludes the application of the habitual operator to the inchoative verb. In such way, evidence in (34)-(36) proves that, contrary to the previously held views (Isačenko 1960, Svenonius 2004, Romanova 2004, Ramchand

\(^ {34} \) The presence of counterexamples, such as zapet' PRF (to start singing) – zapevat' IMP (to be starting singing) shows that, in some exceptional cases, the unique inchoative events can be reinterpreted as iterative.
2004), the inchoative ZA- imposes changes on the lexical semantics of its input verbs by introducing a flavor of uniqueness and unexpectedness and, hence, barring the derived forms from occurring in iterative and habitual contexts.

The claim that the inchoative prefix ZA- does not have any effect on the argument structure of an input verb also needs to be revised. In the previous chapters, we have seen that there are two types of changes that the prefix can impose on an argument structure of a verb. The first change is an addition of a new syntactic argument, which was incompatible with the original lexical argument structure of the input verb. We have encountered such examples with the spatial prefix ZA- that added a goal argument to the input verb bitIMP (to hit), changing it into zabitPRF (to hammer into), and with the resultant ZA- that added a theme argument to the originally intransitive voevarIMP (to fight), deriving a transitive zavoevatPRF (to conquer). A second type of change in the argument structure, observed in some resultant ZA-prefixed accomplishments, affects the interpretation and/or selection of an existing theme argument of the input verb. For instance, the imperfective accomplishment sejatIMP (to sow) takes zerno (grain) as its theme argument, while the corresponding resultant form zasejatPRF (to cover by sowing) selects a new theme argument, belonging a different taxonomic class of locations, such as pole (field). In the case of the inchoative ZA-, there is a certain correlation between the non-quantized interpretation of the bare plural direct object and the inchoative reading of the verb. Curiously enough, such correlation appears to rise only in those cases when the input verb is an imperfective accomplishment, which usually acquires a different reading with the prefix ZA-. Thus, the accomplishment verb citatIMP (to read), followed by a plural direct object, alternates between the resultant and the inchoative reading, depending on the quantized/non-quantized interpretation of its object.

(37) a. Ivan začitalPRF knigi.
   Ivan ZA-read books
   'Ivan damaged all the books by reading.'

b. Ivan začitalPRF knigi.
   Ivan ZA-read books
   'Ivan started reading books in general.'
When the object of začítat\textsuperscript{PRF} is interpreted as specific quantity of books, the verb is interpreted as the resultant damage-class ZA-prefixed accomplishment. When the object is interpreted as books in general, začítat\textsuperscript{PRF} acquires an inchoative reading. Šeljakin 1969 argues that examples, such as (37b), are unbounded (nepredel'nye) forms, derived from their bounded (predel'nye) counterparts, such as (37a). The opposition of bounded-unbounded verbs in Russian invokes a telic-atelic distinction in English. It has been an established fact that, in many cases, the quantized/non-quantized status of the direct object in English correlates with the telic-atelic interpretation of an accomplishment verb (Dowty 1979, Krifka 1998, Rothstein 2004 among others).

(38) a. Ivan read the books in an hour / (*for an hour).
   b. Ivan read books for an hour / (*in an hour).

Could it be the case that the inchoative ZA-prefixed verbs are atelic, while the spatial and resultant ZA-prefixed forms are telic? To answer this question, we need to define a concept of telicity (and atelicity) – the task I undertake in chapter VII. In any case, the data in (37) provides evidence that the inchoative ZA- does affect the choice of a theme argument of an input verb. If the input verb is an imperfective accomplishment, than the inchoative prefix ZA- can occur with such verb only if it takes a bare plural object as its theme argument, and this object is not quantized in any explicit or implicit way. The reason for such requirement of the inchoative ZA- is provided in the following chapter VI, where I deal with the alternations of meanings of ZA-. For now, having acquainted the reader with the inchoative ZA-prefixed accomplishments and some of their semantic properties, I shall define formally the concept of inchoative accomplishment and the function of the inchoative prefix ZA- in Russian.

5.4 Formal Semantic Analysis of the Inchoative Prefix ZA-

The spatial and resultant prefixes ZA-, discussed in chapters III and IV, formed unique subtypes of accomplishment verbs by introducing the BECOME AT and BECOME AFF subevents, respectively. These BECOME subevents imposed specifically-structured changes upon the unstructured activities (or states), denoted by the input verbs. The BECOME AT subevent regulated the change in the location,
associated with the goal argument of a verb, while the BECOME AFF subevent structured the change in the theme argument of an input verb. I assume that the inchoative prefix ZA- derives inchoative accomplishments out of activity and state verbs by introducing the BECOME INI subevent of temporal change. The BECOME INI subevent, however, differs from its spatial and resultant analogs in two respects: a) the nature of an entity, affected by the incremental event of change; b) the nature of the temporal relations between the BECOME INI subevent and the activity subevent part of an inchoative accomplishment event. Let's review these concepts step-by-step.

The BECOME AT and the BECOME AFF subevents of spatial and resultant ZA-associated the change in affected arguments with closed measure scales. For the spatial accomplishments, the BECOME AT subevent picked a closed spatial measure scale and associated it with location, denoted by the goal argument. Thus, the BECOME AT event restricted all the positional changes, denoted by the input verb, to occur within the closed area of space, described by the goal argument. In the resultant accomplishments, the BECOME AFF subevent of change mapped the theme argument to a relevant closed measure scale. For instance, in the accumulative-class resultant accomplishments, the extent of the change of the theme argument ranged between the default and the maximal values on the measure scale of the relevant physical property, such as thickness or dryness. I assume that the BECOME INI subevent, as well as the spatial and resultant subevents above, comes with a temporal built-in closed measure scale and maps its affected argument against such scale. In the case of BECOME INI, the affected entity is the temporal trace of the event, denoted by an input verb. Thus, the BECOME INI event matches the running time of a given event, denoted by the input verbs, against some closed interval of validation on its temporal measure scale. The closed temporal scale of the BECOME INI event carves out the onset stage of an event, denoted by an input verb. The initial bound of such interval corresponds to the zero temporal duration of an event. Due to the homomorphism between events and times, the event with null temporal duration is in the state of non-existence at the initial bound of the closed interval. The upper bound of the closed temporal interval, assigned by the prefix ZA- corresponds to the time of validation for the given event; i.e. the first moment at which an event, denoted by an input verb, holds. The BECOME INI event signifies that there was a monotonic change in the temporal realization of the given event from the initial bound of the onset interval (at which an event is non-existent) to the upper bound of the onset.
interval (at which an event is confirmed as such). For example, \textit{zagovorit'} PRF (to start talking) in \textit{Ivan zagovoril} PRF (Ivan started talking) denotes a temporal change from the state of Ivan non-talking to the state at which the utterances, produced by Ivan, last long enough to be counted as a talking event (i.e., time of validation for the Ivan talking event). Normally, the change between the null time of an event and its time of validation is very short. Nonetheless, the time of validation is contextually dependant. Thus, an event of Ivan talking Russian (in the sense of mastering the language) requires a longer period of validation, allowing for such readings, as \textit{Ivan zagovoril} PRF \textit{po-russki za polgoda} (Ivan started speaking Russian in half a year). The temporal change scale of the BECOME INI event is graphically illustrated in ((39)).

(39) \textbf{A Temporal Change Built-In Scale of the BECOME INI Event of Change}

To sum up, the BECOME INI subevent, introduced by the inchoative prefix \textit{za-}, can be characterized in terms of the following semantic properties:

a) it comes with an inherent closed measure scale of time that ranges from a null temporal duration to some point in time at which an event \textit{X} definitely holds (its time of validation). It matches the running time of an event, denoted by the input verb, with this scale, isolating the onset stage of the given event.

b) The nature of change from the null duration of an event \textit{X} (its non-existence) to the point at which it is validated as such is monotonic and incremental. The parts of event \textit{X} stand in the incremental relation with the instances of time of the onset interval.

c) the initial bound on the incremental temporal scale of the BECOME INI event is uniform for all verbs and is equal to zero time. The upper bound on the scale at which an event is validated is not fixed, but rather depends on the context, as shown in (32).

One may argue at this point that inchoative \textit{za}-prefixed verbs denote achievements, rather than accomplishments, dismissing examples in (32) as rare anomalies. Since inchoative \textit{za}-prefixed verbs hold at very short temporal intervals,
such argument may seem plausible at first sight. To refute it, one needs to look at the semantic function of the inchoative ZA- more closely. The inchoative prefix ZA- carves out a minimal initial stage of an event, denoted by a given input verb (i.e., its onset phase). In other words, an inchoative accomplishment event establishes an onset of an event, denoted by a given input verb that the inchoative ZA- applies to. As argued in Dowty 1979, Rothstein 2004 and Landman 2007, activity events are homogeneous down to minimal stages, which hold for non-instantaneous temporal intervals (albeit, very short ones). An onset of an activity event is its first initial stage, meaning that it also holds for an interval of time, rather than a single instant. Landman 2007 formalizes this intuition as follows (Landman 2007: 9).

(40) \( \forall e \in \text{ACT. EVENT}: \neg \text{POINT}(\tau(\text{O}(e))) \), where O stands for an onset stage.

The onset of an activity event is a temporal interval, not a single point.

Since an inchoative ZA-prefixed verb establishes an onset of an activity event, denoted by its unprefixed correlate verb, and that onset has non-instantaneous temporal duration, it follows that an inchoative event has a non-instantaneous temporal duration as well. Thus, inchoative ZA-prefixed verbs, derived from activity verbs, are temporally extended events of change; i.e., accomplishments. However, one still needs to deal with the inchoative ZA-prefixed verbs, which are derived from state verbs, such as color states like zelenet'а IMP (to look green) and emotional states like volnovat'sja IMP (to be worried). I assume that these thematic classes of states have temporally non-minimal onset intervals as an emotional state or state of emitting light needs to reach a certain level of intensity to be validated as such. At the present point, I cannot back up this assumption, so I shall leave it as it is.

Another important point concerns the restriction on a temporal trace of event, which serves as an incremental argument of the BECOME INI subevent of change. The BECOME AT and BECOME AFF subevents of change, discussed in the previous chapters, took bounded locations and objects as their incremental themes. Bounded locations restricted a path of a moving participant, while bounded objects ensured that the change they undergo is not indefinite. Such locations and objects displayed compatibility with the closed measure scales, associated with the given events of change. Assuming that the BECOME INI event has a similar internal
semantics to the previously discussed spatial and resultant events of change, it follows that it takes a closed temporal trace of a given event as its incremental argument. I will have to assume, thus, that activity and state verbs that serve as input for the inchoative prefix ZA- do have finite temporal traces, even if the end point of their temporal trace is arbitrarily defined.

The inchoative ZA-prefixed accomplishment event would, thus, have the following representation in (41).

(41) **Inchoative Accomplishment Template**

\[
\lambda x_1...x_N \lambda P \lambda e. \exists e_1, e_2 \left[ e = S(e_1 \cup e_2) \land P_{\text{ACT./STATE}}(e_1) \land \theta_{1...N}(e_1) = x_1......x_N \right.
\]
\[
\left. \land \text{BECOME INI}(e_2) \land \text{Arg}(e_2) = \tau(e_1) \land \text{INCR} (e_1, e_2, C(e_2)) \right]
\]

The inchoative accomplishment event is the sum of the BECOME INI subevent and an activity/state subevent, so that the BECOME INI subevent measures a temporal trace of \( e_1 \) and denotes a gradual establishment of its onset stage.

The inchoative ZA-prefixed accomplishments would have the following representations in (42)-(43).

(42) Ivan zasmejalsja\(^{\text{PRF}}\).

'Ivan ZA-laughed

'Ivan started laughing.'

\[
\exists e. \exists e_1, e_2 \left[ e = S(e_1 \cup e_2) \land \text{LAUGH}(e_1) \land \text{AGENT} (e_1) = \text{Ivan} \right.
\]
\[
\left. \land \text{BECOME INI}(e_2) \land \text{Arg}(e_2) = \tau(e_1) \land \text{INCR}_{\text{INI}} (e_1, e_2, C(e_2)) \right]
\]

there was an inchoative accomplishment event with Ivan as its agent, which consists of a sum of the incrementally related subevents: the activity of laughing and the BECOME INI subevent of temporal change, and the running time of the laughing activity is the argument of the BECOME INI event.
(43) Ivan zatolkal \(^{\text{PRF}}\) telegu.

Ivan ZA-pushed cart

'Ivan started pushing the cart.'

\[ \exists e. \exists e_1, e_2 [ e = S(e_1 \cup e_2) \land \text{LAUGH}(e_1) \land \text{Agent}(e_1) = \text{Ivan} \land \text{Theme}(e_1) = \text{Ivan} \land \text{BECOME INI}(e_2) \land \text{Arg}(e_2) = \tau(e_1) \land \text{INCR}_{\text{INI}}(e_1, e_2, C(e_2))] \]

there was an inchoative accomplishment event with Ivan as its agent and the cart as its theme, which consists of a sum of the incrementally related subevents: the activity of pushing and the BECOME INI subevent of temporal change, and the running time of the pushing activity is the argument of the BECOME INI event.

To sum up, the inchoative prefix ZA- derives the inchoative accomplishment verbs out of the input imperfective activity and state verbs. The inchoative derivation does not change the syntactic argument structure of the input verbs: the intransitive activities of the type \(<d, <e, t>>\) are shifted into intransitive inchoative ZA-prefix fixed accomplishments of the same type; the transitive activities of the type \(<d, <d, <e, t>>\) are shifted into transitive inchoative accomplishments, respectively. The inchoative ZA-shift operation is formulated in (44).

(44) Inchoative Accomplishment Shift for Activities and States

\[
\text{INCHOATIVE ZA-SHIFT } (\lambda x_1...x_N \lambda P (P_{\text{ACT./STATE}}(e_1) \land \theta_{1...N}(e_1) = x_1...x_N)) = \\
= \lambda x_1...x_N \lambda P \lambda e. \exists e_1, e_2 [ e = S(e_1 \cup e_2) \land P_{\text{ACT./STATE}}(e_1) \land \theta_{1...N}(e_1) = x_1...x_N \\
\land \text{BECOME INI}(e_2) \land \text{Arg}(e_2) = \tau(e_1) \land \text{INCR}_{\text{INI}}(e_1, e_2, C(e_2))]
\]

As in the case of the spatial and resultant ZA-shifts, the operation in (44) does not account for the input accomplishment verbs. I assume, therefore, that the input accomplishment verbs are first shifted into activity verbs by the now familiar EXT operation in (45).
(45) **Activity Extraction Operation**

\[
\text{EXT}(\lambda y \lambda x_1 \ldots x_N \lambda P \lambda e. \exists e_1, e_2[ e = e_1 \cup e_2 \wedge P_{\text{ACTIVITY}}(e_1) \wedge \theta_{1 \ldots N} (e_1) = x_1 \ldots x_N \\
\wedge \text{Theme}(e_1) = y \wedge \text{BECOME-P-ed}(e_2) \wedge \text{Arg}(e_2) = \text{Th}(e_1) \wedge \text{INCR}(e_1, e_2, C(e_2))]])
\]

\[
\rightarrow \lambda y \lambda x_1 \ldots x_N \lambda P \lambda e. [P_{\text{ACTIVITY}}(e) \wedge \theta_{1 \ldots N} (e) = x_1 \ldots x_N \wedge \text{Th}(e) = y]
\]

So applying the EXT operation to the imperfective input accomplishment \(\hat{\text{cit}}\)IMP (to read) yields a transitive activity verb in (46).

(46) \[
\text{EXT}(\lambda y \lambda P \lambda e. \exists e_1, e_2[ e = e_1 \cup e_2 \wedge \text{READ}(e_1) \wedge \text{Theme}(e_1) = y \\
\wedge \text{BECOME READ}(e_2) \wedge \text{Arg}(e_2) = \text{Th}(e_1) \wedge \text{INCR}(e_1, e_2, C(e_2))]])
\]

\[
\rightarrow \lambda y \lambda P \lambda e. [\text{READ}(e) \wedge \text{Th}(e) = y]
\]

Applying the inchoative \(ZA\)- to the obtained reading activity, we get the inchoative \(ZA\)-prefixed accomplishment \(za\hat{\text{cit}}\)PRF (to start reading).

\[
\text{ZA-SHIFT} (\lambda y \lambda P \lambda e [\text{READ}(e) \wedge \text{Th}(e) = y]) =
\]

\[
\lambda y \lambda P \lambda e. \exists e_1, e_2[ e = e_1 \cup e_2 \wedge \text{READ}(e_1) \wedge \text{Theme}(e_1) = y \\
\wedge \text{BECOME INI}(e_2) \wedge \text{Arg}(e_2) = \tau(e_1) \wedge \text{INCR}_{\text{INI}}(e_1, e_2, C(e_2))]
\]

The problem with using the EXT operation in (45) is that such operation does not account for the fact that the inchoative interpretation arises with transitive accomplishment verbs only when their direct object is plural and non-quantized. If the DO denotes a single or a quantized plural object, an accomplishment verb acquires a resultant reading with \(ZA\). So what is the source of such correlation between an inchoative reading of an input accomplishment verb with \(ZA\) and the non-quantized reading of its plural direct object? One answer to this question might be that the inchoative prefix \(ZA\) imposes such non-quantized interpretation on the plural objects of the input verbs it applies to. However, there are a number of problems with such explanation. First, the semantics of the inchoative accomplishments, proposed above, does not indicate any restrictions on the direct objects of the input verbs. The
BECOME INI subevent of change, introduced by the prefix ZA-, imposes restrictions on the temporal properties of its activity counterpart, rather than the properties of its arguments. Second, examples of transitive activity and state input verbs in (47a)-(47b) show that the inchoative reading is maintained even with the quantized plural direct objects.

(47) a. Ivan zatolkoł PRF dve telegi odnovremenno.
    Ivan ZA-push two carts simultaneously
    'Ivan started pushing the two carts simultaneously.'

b. Ivan zaxotel PRF tri morožennyx srazu.
    Ivan ZA-wanted three ice-creams at once
    'Ivan began to want three ice-creams at once.'

So ascribing the non-quantized direct object restriction to the inchoative prefix ZA- means that it is somehow sensitive to the difference between basic transitive activities (and states) and transitive activities, derived by the EXT operation in (46) from accomplishment verbs; and that it imposes such restriction in the latter, but not the former case. Such account would further complicate the semantic analysis of the inchoative ZA-. I believe that the solution for the non-quantized DO restriction is simpler – this restriction is linked to some other semantic phenomenon, related to the alternation of meanings of ZA-. As I demonstrated in the previous chapter IV, the normative interpretation for začital PRF is the resultant one, where the direct object is incrementally affected in the course of the reading. I assume that the inchoative reading of začital PRF arises only when the application of the resultant ZA- to the input verb is blocked. And the application of the resultant ZA- is blocked, because some other semantic operation occurred after EXT, making the theme argument of the derived activity inaccessible for the BECOME AFF event, introduced by the resultant ZA-.

Two questions rise at this point: a) why the inchoative ZA- applies to an input verb after the resultant ZA-; b) what kind of operation can block the application of the resultant ZA-, leaving the way open for the inchoative ZA-. To answer these questions, we need first to provide an account for the next major issue involving ZA-prefixation: the alternation of meanings of ZA-. So far the chapters III, IV and V covered the
particular meanings of $ZA$ – spatial, resultant and inchoative – without discussing whether there is any correlation between the three meanings. In the following chapter VI, I shall look into the interrelatedness of the meanings of the prefix $ZA$, discuss some alternations of meanings of $ZA$ with certain input verbs and attempt to construct the semantic network of meanings for the prefix $ZA$ in Russian.
Chapter VI.
The Alternations of Meanings of ZA-.

6.1 Introduction

In chapters III, IV and V, I discussed the three core meanings of the prefix ZA- in the verbal lexicon of Russian and provided the formal semantic analyses for these meanings. I have shown that in all three cases ZA- acts as an aspectual shift operator that creates three distinct subtypes of accomplishment events – locative, resultant and inchoative. Each of these subtypes imposes specific restrictions on the manner of its event of change and the entity that undergoes it (location, material object, temporal trace of an event). The obvious question at this point is whether the three meanings of ZA-, outlined in the previous chapters, are in some way related to each other.

As far as I can see, there are three possible answers to this question. A: the three aforementioned meanings are associated with three separate non-related homophonous prefixes ZA-, which apply unselectively to unprefixed verbs in Russian. B. the three meanings are imposed by three separate non-related prefixes ZA- that have different selectional restrictions and, thus, apply to different input verbs in Russian. C. the three meanings of ZA- are interrelated in some systematic way. Naturally, each option provides us with a different set of predictions about the application of ZA- to the input verbs. Assume that option A is the correct one: the three homophonous prefixes ZA- freely apply to any input verb of Russian. In such case, one would expect any ZA-prefixed verb in Russian to alternate between spatial, resultant and inchoative meanings of ZA- as long as it makes sense in the given context. In other words, a great part of ZA-prefixed verbs in the lexicon would be ambiguous between several meanings of ZA-. E.g., zagustet'PRF (to thicken) should be ambiguous between a resultant meaning in (1a) and an inchoative meaning in (1b).

(1) a. Varen'je zagustelo PRF.
   Jam ZA-thickened
   'The jam thickened up.'

b. Varen'je zagustelo PRF.
   Jam ZA-thickened
   #'The jam started to thicken.'
Such expectation, however is not borne out, since the inchoative interpretation of *
zagustet’* PRF as *to start thickening* in (1b) is infelicitous in Russian. Such infelicity is not a matter of lack of the contextual support, since the onset of a thickening event is naturally expressed by the *begin + infinitive* construction in (2).

(2) a. Varen’je stalo PRF gustet’ IMP.

    Jam came to thicken
    'The jam began to thicken.'

In fact, cases of ambiguous ZA-prefixed verbs in the lexicon are rare.\(^{35}\) One such example is, prima facie, the verb *zatolkat’* PRF (to push), which alternates between the spatial meaning of ZA- in (3a) and the inchoative meaning in (3b). Even so, the spatial reading in (3a) is only acceptable under the premise that there was a specific goal location, known from context, where the cart was pushed into.

(3) a. Ivan zatolkal PRF telegu.

    Ivan ZA-pushed cart
    'Ivan pushed the cart in [into some known location].'

b. Ivan zatolkal PRF telegu.

    Ivan ZA-pushed cart
    'Ivan started pushing the cart.'

Thus, it seems that option A is not valid for Russian – the three autonomous prefixes ZA- do not apply randomly to verbs in the lexicon. This leaves us with option B – three separate prefixes ZA- are associated with three different meanings, but each prefix applies to a different type of input verbs. If it is the case, then a given input verb should not have different interpretations with the prefix ZA-. In other words, since each prefix ZA- selects different groups of verbs, there should not be any alternations of meanings of ZA- for individual verbs. In fact, Romanova 2004 provides piece of evidence for such approach, indicating that the determinate motion verbs, such as *beżat’* IMP (to run) in (4a), acquire a spatial reading with ZA- in (4b),

\(^{35}\) Here, by ambiguous verbs I mean the ZA-prefixed verbs that take different meanings of ZA- in the same contextual environment and with the same lexical argument structure.
while the indeterminate motion verbs, such as \textit{begat}^\text{IMP} (to run) in (4c), get an inchoative interpretation in (4d).

(4) a. Ivan bežal^\text{IMP} v magazin.
   Ivan ran in store
   'Ivan ran to the store.'

b. Ivan zabežal^\text{PRF} v magazin.
   Ivan ZA-ran in store
   'Ivan ran into the store.'

c. Ivan begal^\text{IMP} v magazin.
   Ivan ran in store
   'Ivan used to run /ran back-and-forth to the store.'

d. Ivan zabegal^\text{PRF} v magazin.
   Ivan ZA-ran in store
   'Ivan started running back-and-forth to the store.'

Following Babko-Malaya 1999 and Schoorlemmer 1995, Romanova 2004 suggests that determinate motion verbs in Russian are unaccusative, while indeterminate ones are unergative. Assuming that the spatial ZA- selects the unaccusative verbs, while the inchoative prefix ZA- selects the unergative ones, the data in (4) provide evidence in favor of option B – an existence of three homophonous prefixes ZA- with distinct selectional restrictions with respect to their input verbs. Option B can also account for such cases as the resultant \textit{zabit}'^\text{PRF} (to beat severely) in (5a) and the inchoative \textit{zabit}'^\text{PRF} (to start kicking) in (5b).

(5) a. David zabil^\text{PRF} Warda.
   David ZA-hit Ward
   'David beat Ward severely.'

b. David zabil^\text{PRF} kulakom po stolu.
   David ZA-hit with fist.INSTR on table
   'David started beating on the table with his fist.'
The data in (5) can be explained by assuming that there are two homophonous imperfective verbs \(bit'_{IMP}\) (to hit, to beat) in Russian: one is transitive, another is intransitive. The spatial \(ZA_{-}\) selects the transitive \(bit'_{IMP}\) as its input, while the inchoative \(ZA_{-}\) takes the intransitive one. Thus, it is not the case that the single verb \(bit'_{IMP}\) alternates between two meanings of \(ZA_{-}\), but rather two homophonous, yet syntactically distinct verbs, occur with two homophonous, yet semantically distinct, prefixes \(ZA_{-}\), respectively.

However, some verbs display alternations of meanings of \(ZA_{-}\), which seem to be problematic for the 'distinct prefixes for distinct verbs' conception. Consider the following example with the verb \(governit'_{IMP}\) (to talk), adopted from Paillard 2004.

\[(6)\]

\[\begin{align*}
\text{a. } & \text{Ivan governil}_{IMP}^{\text{} \text{(*menja)}}. \\
& \text{Ivan talked } me \\
& 'Ivan talked.'
\end{align*}\]

\[\begin{align*}
\text{b. } & \text{Ivan zagovernil}_{PRF}. \\
& \text{Ivan ZA-talked} \\
& 'Ivan started talking.'
\end{align*}\]

\[\begin{align*}
\text{c. } & \text{Ivan zagovernil}_{PRF}^{\text{menja}}. \\
& \text{Ivan ZA-talked } me \\
& 'Ivan made me confused by his talking.'
\end{align*}\]

The \(ZA_{-}\)-prefixed form of \(governit'_{IMP}\) (to talk) alternates between the inchoative meaning in (6b) and the resultant meaning in (6c). By analogy with (5), we expect the inchoative \(ZA_{-}\) to apply to the intransitive variant of \(governit'_{IMP}\) (to talk), and the resultant \(ZA_{-}\) – to its transitive counterpart. But the transitive form \(*governit'_{IMP} kogo-to\) (to talk someone) is infelicitous in Russian. Thus, both (6b) and (6c) must be derived from the intransitive form. Now, let's go back to (5a), which is derived by \(ZA_{-}\) from the transitive form of \(bit'_{IMP}\) (to hit, to beat). The verb \(bit'_{IMP}\) can also occur with the spatial meaning of \(ZA_{-}\), as in (7b). Assuming that the spatial prefix \(ZA_{-}\) applies to input verbs that have goal arguments in their lexical argument structure, we would expect to find a third distinct form of \(bit'_{IMP}\) (to hit into) that has a goal argument in its lexical argument structure. However, such form is ungrammatical in Russian, as shown in (7a).
The data in (6)-(7) indicates that it cannot be the case that distinct prefixes ZA- apply to distinct verbs in the lexicon, since, in some cases, a number of different ZA-prefixed output forms are derived from a single input verb. Thus, we can exclude options A and B, which express two polar approaches to the distribution of the prefix ZA- in Russian. The ZA-prefixed verbs in the lexicon are neither uniformly ambiguous between various meanings of ZA-, nor totally prohibit the same input verb from acquiring several meanings of ZA-. The only option that is left at this stage is C – the three meanings of ZA- are interrelated in some unambiguous way. I'll leave aside for the moment the question of whether the three meanings of ZA- are associated with three separate (yet related) homophonous prefixes ZA-, or are derived from a single abstract meaning of ZA-, though I will return to this question in section 6.5. In any case, adopting option C means that there is a systematic interrelation between the three prefixes ZA- with respect to their application to the relevant input verbs. Hence, by looking at a particular input verb one should be able to predict not only which meaning it acquires with the prefix ZA-, but whether (and under which conditions) it can alternate between the three core meanings of ZA-\(^{36}\). The crucial question now is how these prefixal meanings are interrelated. To answer this question, one needs to take a close look at the various ZA-prefix verbs, which alternate between various meanings of ZA-, and try to deduce some general pattern of alternation from analyzing these verbs. The latter task is undertaken in the following section 6.2.

\(^{36}\) In Chapter IV we have seen that there are also internal alternations of meaning within the resultant class of ZA-prefix verbs, where some verbs may belong to different subtypes of the resultant meaning of ZA-. In this chapter, however, I limit the scope of discussion to the external alternation of the three core meanings of ZA-, i.e., the spatial, resultant and inchoative meanings.
6.2 The Alternations of Meanings of ZA-

The alternations of meanings of ZA- can be divided into two types. First, there are alternations that involve a pair of input verbs, which are semantically related. Each of the members of a given pair systematically acquires a distinct meaning of ZA-. For instance, determinate motion verbs take the spatial meaning of ZA-, while their indeterminate counterparts acquire the inchoative one. I shall call such type of alternations the group alternations of meanings of ZA-. The second type of alternations involves single verbs that can express more than one meaning of ZA-. An example of such alternation was given in (6), where the ZA-prefixed form of *goverit* IMP (to talk) alternates between the inchoative and the resultant meanings of ZA-. In contrast to the group alternations, I shall name the second type the individual alternations of meanings of ZA-. The relevant individual and group alternations are presented in the following subsections.

6.2.1 The Group Alternations of ZA-

The group alternations of meanings of ZA- include the spatial – inchoative group alternation and the inchoative – resultant group alternation, described as follows.

6.2.1.1 The Spatial – Inchoative Group Alternations of ZA-

The spatial – inchoative group alternation involves a pair of related verbs, one of which takes the spatial meaning of ZA-, while the other acquires the inchoative one. The spatial – inchoative group alternation of ZA- is manifested with determinate and indeterminate motion verbs in Russian. Determinate motion verbs systematically acquire the spatial meaning of ZA-, while their indeterminate counterparts get the inchoative meaning. As demonstrated in chapter V, adding a goal argument to an indeterminate motion verb does not change its inchoative reading with ZA-. The spatial – inchoative group alternation of ZA- with determinate-indeterminate pairs of motion verbs is illustrated in the examples (8)-(10) below.

(8) a. Ivan bežal IMP DET v magazin.
   Ivan ran to store
   'Ivan ran to the store.'
b. Ivan zabežal\textsuperscript{PRF} v magazin.
   Ivan ZA-ran in store
   'Ivan ran into the store.'

c. Ivan begal\textsuperscript{IMP\textsc{indef}} v magazin / po komnate.
   Ivan ran in store around room
   'Ivan used to run / ran back-and-forth to the store / ran around the room.'

d. Ivan zabegal\textsuperscript{PRF} v magazin / po komnate.
   Ivan ZA-ran in store around room
   'Ivan started running to the store / around the room.'

(9) a. Korabl' pply\textsuperscript{IMP\textsc{det}} v Haifu.
   Ship swam in Haifa
   'A/ the ship sailed to Haifa.'

b. Korabl' zply\textsuperscript{PRF} v Haifu.
   Ship ZA-swam in Haifa
   'The ship sailed into the Haifa (harbor).'</n
c. Korabl' plval\textsuperscript{IMP\textsc{indef}} v Haifu.
   Ship swam in Haifa
   'A / the ship used to sail to Haifa.'

d. Korabl' zaplval\textsuperscript{PRF} v Haifu.
   Ship ZA-sailed in Haifu.
   'The ship started sailing to Haifa.'

(10) a. Ivan taščil\textsuperscript{IMP\textsc{det}} čemodany v kvartiru.
   Ivan dragged suitcases in apartment
   'Ivan dragged suitcases to his apartment.'

b. Ivan zataščil\textsuperscript{PRF} čemodany v kvartiru.
   Ivan ZA-dragged suitcases in apartment
   'Ivan dragged all the suitcases into his apartment.'

c. Ivan taskal\textsuperscript{IMP\textsc{indef}} čemodany v kvartiru.
   Ivan dragged suitcase in apartment
   'Ivan used to drag suitcases to his apartment.'
d. Ivan zataskal_{PRF} čemodany v kvartiru.

Johh ZA-dragged suitcases in apartment
'Ivan started dragging suitcases to his apartment.'

It should be mentioned that some indeterminate motion verbs may alternate between the inchoative and resultant meanings of ZA-, as illustrated in (11).

(11) a. Ivan nosil_{IMP\text{INDET}} ručkašku / čemodan.

Ivan carried shirt suitcase.
'Ivan was wearing a shirt / carrying a suitcase.'

b. Ivan zanosil_{PRF} čemodan po kvartire.

Ivan ZA-carry suitcase in apartment
'Ivan started carrying the suitcase around the apartment.'

c. Ivan zanosil_{PRF} ručkašku.

Ivan ZA-wore shirt
'Ivan wore the shirt out by carrying (wearing) it for too long.'

The spatial – inchoative group alternation also occurs with the motion verbs of throw class, as well as with some general motion verbs, such as jump. The imperfective motion activities acquire the inchoative meaning of ZA-, while their perfective semelfactive counterparts take the spatial one, as illustrated in (12)-(14).

(12) a. Jeff brosil_{PRF} kamni v kolodez.

Jeff threw stones in well
'Ivan threw (all the) stones at the well.'

b. Jeff zabrosil_{PRF} kamni v kolodez.

Jeff ZA-threw stones in well
'Ivan threw all the stones into the well.'

c. Jeff brosal_{IMP} kamni v kolodez.

Jeff threw stones in well
'Jeff was throwing (the) stones at the well.'
d. Jeff zabrosal^{PRF} kamni v kolodez.  
Jeff ZA-throwed stones in well  
'Jeff began throwing (the) stones at the well.'

(13) a. Ivan prygnul^{PRF} na stul.  
Ivan jumped on chair  
'Ivan jumped at the chair.'  
b. Ivan zaprygnul^{PRF} na stul.  
Ivan ZA-jumped on chair  
'Ivan jumped up on the chair.'  
c. Ivan prygal^{IMP} na stul.  
Ivan jumped on chair  
'Ivan was jumping / used to jump on a/the chair.'  
d. Ivan zaprygal^{PRF} na stul.  
Ivan ZA-jumped on chair  
'Ivan started jumping on the chair.'

(14) a. Ivan tolknul^{PRF} telegu k stene.  
Ivan pushed cart toward wall  
'Ivan pushed the cart toward the wall.'  
b. Ivan zatolknul^{PRF} telegu v tunnel'.  
Ivan ZA-pushed cart in tunnel  
'Ivan pushed the cart into the tunnel.'  
c. Ivan tolkal^{IMP} telegu k stene.  
Ivan pushed cart toward wall  
'Ivan was pushing the cart toward the wall.'  
d. Ivan zatolkal^{PRF} telegu k stene.  
Ivan ZA-pushed cart toward wall  
'Ivan started pushing the cart toward the wall.'

The examples above display a consistent pattern of meaning alternations with the prefix ZA-. The perfective semelfactive forms in (12a-14a) acquire a spatial meaning of ZA- in (12b-14b). On the other hand, their imperfective activity counterparts in (12c-14c) acquire an inchoative interpretation in (12d-14d). The spatial ZA-prefixed
forms in (12b-14b) require an obligatory goal argument, while the goal argument in the inchoative forms in (12d-14d) need not be provided explicitly. Another important observation is that bare plural direct objects in both semelfactive verbs and their ZA-derived counterparts are interpreted as denoting all the available objects of that kind. Thus, stones in (12a-b) are interpreted as all the stones, available in the given context. This is not the case for (12c-d), however, where stones can alternate between a quantized and a non-quantized reading (all the stones vs. stones in general). In such a way, the correlation between the inchoative meaning of ZA- and the non-quantized interpretation of a direct object in the transitive inchoatives, discussed in Chapter V, becomes more evident with the aforementioned set of examples.

6.2.1.2 The Inchoative – Resultant Group Alternations of ZA-

This group alternation occurs in the cases of two homophonous verbs – one intransitive and another is transitive – that share the same lexical meaning. The intransitive verb acquires the inchoative meaning of ZA-, while the transitive one gets the resultant meaning. Some examples are given in (15)-(17) below.

(15) a. Ivan bil^{IMP} kulakom po stolu.
    Ivan hit with fist on table
    'Ivan hit a/the table with his fist.'
    b. Ivan zabil^{PRF} kulakom po stolu.
    Ivan ZA-hit with fist on table
    'Ivan started hitting the table with his fist.'
    c. Ivan bil^{IMP} Marka palkoj.
    Ivan hit Mark with stick
    'Ivan beat Mark with the stick.'
    d. Ivan zabil^{PRF} Marka palkoj.
    Ivan ZA-hit Mark
    'Ivan beat Mark severely/to death with the stick.'

(16) a. Iz krana lila^{IMP} voda.
    from tap poured water
    'Water poured from the tap.'
b. Iz krana zalila\textsuperscript{PRF} voda.
   from tap ZA-poured water
   'Water started pouring from the tap.'

c. Ivan lil\textsuperscript{IMP} vodu v vannu.
   Ivan poured water in bath
   'Ivan poured water into the bath.'

d. Ivan zalil\textsuperscript{PRF} vannu vodoj.
   Ivan ZA-poured bath with water
   'Ivan filled the bath by pouring water.'

(17) a. Palilo\textsuperscript{IMP} solntze.
   scorched sun
   'The sun was scorching.'

b. Zapalilo\textsuperscript{PRF} solntze.
   ZA-scorched sun
   'The sun started scorching.'

c. Neispravnyj utjug palil\textsuperscript{IMP} odeždu.
   malfunctioning iron burned clothes
   'A/the malfunctioning iron used to burn clothes.'

d. Ivan zapalil\textsuperscript{PRF} ambar.
   Ivan ZA-burned barn
   'Ivan set the barn on fire.'

In general, examples such as (15)-(17) are not common in the lexicon. Rather, the inchoative – resultant alternations occur with individual verbs as illustrated in the following subsection 6.2.

6.2.2 The Individual Alternations of ZA-

The individual alternations of the meanings of ZA- include the spatial – inchoative alternation, the spatial – resultant alternation and the inchoative – resultant alternation.
6.2.2.1 The Spatial – Inchoative Individual Alternations of ZA-

The spatial – inchoative alternation involves individual verbs that can acquire both spatial and inchoative meanings of the prefix ZA-. Such verbs are relatively rare in the lexicon. Some examples of such alternations are provided in (18)-(20) below.

(18) a. Ivan tolkal IMP telegu (v tunnel').
   Ivan pushed cart in tunnel
b. Ivan zatolkal PRF telegu v tunnel'.
   Ivan ZA-pushed cart in tunnel
   'Ivan pushed the cart into the tunnel.'
c. Ivan zatolkal PRF telegu.
   Ivan ZA-pushed cart
   'Ivan started pushing the cart.'

(19) a. Mark krutil IMP ??bolt / disk telefona.
   Mark turned bolt dial of phone
   'Mark was turning the phone dial.'
b. Mark zakrutil PRF bolt.
   Mark ZA-turned bolt
   'Mark screwed the bolt in.'
c. Mark zakrutil PRF disk telefona.
   Mark ZA-turned disk of phone
   'Mark started turning the dial of the phone.'

(20) a. Ivan ryl IMP zemlju / (*klad).
   Ivan dug ground treasure
   'Ivan was digging the fround.'
b. Ivan zaryl PRF klad (v zemlju).
   Ivan ZA-dug treasure in earth
   'Ivan buried the treasure in the ground.'
c. Kon' zaryl PRF zemlju (kopytom).
   Horse ZA-dug ground with hoof
   'The horse started digging the ground with his hoof.'
The direct objects of the ZA-prefixed spatial verbs in examples (18b)-(20b) are assigned a thematic role of holistic theme. The spatial ZA-prefixed verb $zatol'ka^\text{PRF}$ (to push into) in (18b) has an explicit goal argument $tunnel$, while $zakrut'\text{PRF}$ (to screw into) and $zaryt'\text{PRF}$ (to bury) in (19b)-(20b) have implicit goal arguments $bolt\text{-hole}$ and $ground$, respectively. In terms of changes in the lexical meaning, the verb $zatol'ka^\text{PRF}$ (to push into) in (18b) is close to the meaning of its imperfective input counterpart $tol'ka^\text{IMP}$ (to push). The other spatial verbs in (19b)-(20b) undergo a more visible change in their lexical meanings, compared to their imperfective counterparts in (18a)-(20a). The imperfective $krut'\text{IMP}$ (to turn around) in (19a) is shifted into $zakrut'\text{PRF}$ (to screw in), while $ryt'\text{IMP}$ (to dig) in (20a) is shifted into $zaryt'\text{PRF}$ (to bury).

The inchoative ZA-prefixed verbs in (18c)-(20c) denote the initiation of the processes, expressed by the input verbs in (18a)-(20a). The lexical argument structure of the input verbs in (18a)-(20a) is preserved in the inchoative ZA-prefixed forms. The direct objects of the verbs in (18c)-(20c) are assigned a holistic theme role.

6.2.2.2 The Spatial – Resultant Individual Alternations of ZA-

The cases of spatial – resultant alternation of the meanings of ZA- are less common in the verbal lexicon of Russian. The bulk of examples for this alternation comes from the spatial $load/spray$ verbs, such as $zasypa^\text{PRF}$ (to fill by pouring), which we encountered in chapter III, though there is also a $damage$-class verb in (23). Some examples of spatial – resultant alternation are provided in (21)-(26) below.

(21) a. Ivan sypal $\text{IMP}$ pesok v jamu.
   Ivan poured sand in hole
   'Ivan poured sand in a/the hole.'

b. Ivan $zasypal^\text{PRF}$ pesok v jamu.
   Ivan ZA-poured sand in hole
   'Ivan poured all the sand into the hole.'

c. Ivan $zasypal^\text{PRF}$ jamu peskom.
   Ivan ZA-poured hole with sand
   'Ivan filled the hole by pouring sand.'
(22) a. Ivan lil IMP benzin v bak.
Ivan poured gasoline in tank
'Ivan poured gasoline to a/the tank.'
b. Ivan zalilPRF benzin v bak.
Ivan ZA-poured gasoline in tank
'Ivan poured gasoline into the tank.'
c. Ivan zalilPRF bak benzinom.
Ivan ZA-poured tank with gasoline
'Ivan filled the tank by pouring gasoline.'

(23) a. Jeff gruzil IMP mebel' v gruzovik.
Jeff loaded furniture in truck
'Jeff loaded furniture into a/the truck.'
b. Jeff zagruzil PRF mebel' v gruzovik.
Jeff ZA-loaded furniture in truck
'Jeff loaded the furniture into the truck.'
c. Jeff zagruzil PRF gruzovik mebel'ju.
Jeff ZA-loaded truck with furniture
'Jeff loaded the truck with furniture.'

(24) a. Ivan šil IMP pidžak.
Ivan sewed suit
'Ivan sewed a/the suit.'
b. Ivan zašilPRF bulavku v pidžak.
Ivan sewed pin in suit.ACC
'Ivan sewed the pin into the suit.'
c. Ivan zašilPRF dyru v pidžake.
Ivan sewed hole in suit.LOC
'Ivan sewed up the hole in the suit.'

Maša.ACC they pushed in car.ACC in crowd.LOC
'(They) pushed Maša into the car / in the crowd.'
b. Mašu zatolkali v mašinu.
Maša.ACC they ZA-pushed in car
'(They) pushed Maša into the car.'
c. Mašu zatolkali v tolpe.
Maša.ACC they pushed in crowd.LOC
'(They) battered Maša by pushing her in the crowd.'

(26) a. Ivan risoval peizaž v albome.
Ivan painted landscape in album.LOC
'Ivan painted landscape in a/the album.'
b. Ivan zarisoval peizaž v albom.
Ivan ZA-painted landscape in album.ACC
'Ivan painted the landscape in the album.'
c. Ivan zarisoval albom kartinami.
Ivan ZA-painted album with paintings
'Ivan painted the paintings all over the album.'

Examples (21b)-(26b) denote the spatial meaning of ZA-, while examples (21c)-(26c) describe the resultant one. In terms of changes in the lexical argument structure, the spatial ZA-prefixed verbs in (21b-23b, 25b) do not exhibit a significant difference in the lexical argument structure and meaning, compared to their imperfective counterparts. Both forms express a motion of holistic theme, though the ZA-prefixed forms entail that the moving object ended up within the goal region (as argued in Chapter III). The verbs of creation sew and paint in (24a) and (26a), respectively, are shifted into a spatial interpretation sew into and copy by painting in (24b) and (26b). The resultant verbs in (21c)-(26c), however, diverge from an input imperfective form in terms of their lexical meaning and argument structure (with an exception of (25c)).

6.2.2.3 The Inchoative – Resultant Individual Alternations of ZA-

The individual inchoative – resultant alternations occur with some verbs that can take both inchoative and resultant meanings of ZA-. Some cases of such alternations are provided in the following examples (27)-(31).
(27) a. Ivan govoril IMP so mnoj / (*menja).
   Ivan talked to me
   'Ivan talked to me.'
 b. Ivan zagovoril PRF so mnoj.
   Ivan ZA-talked to me.DAT
   'Ivan started talking to me.'
 c. Ivan zagovoril PRF menja.
   Ivan ZA-talked me.ACC
   'Ivan confused me / bored me with his excessive talking.'

(28) a. Ivan igrал IMP na skripke / (*plastinku).
   Ivan played on violin record
   'Ivan played a/the violin.'
 b. Ivan zaigral PRF na skripke.
   Ivan ZA-played on violin
   'Ivan started playing the violin.'
 c. Ivan zaigral PRF plastinku.
   Ivan ZA-played record
   'Ivan wore the record out by playing.'

(29) a. Ivan tanzeval IMP (val's) s Dašej / (*Dašu).
   Ivan danced waltz with Dasha / Dasha.ACC
   'Ivan danced (waltz) with Dasha.'
 b. Ivan zatanzeval PRF (val's) s Dašej.
   Ivan ZA-danced (waltz) with Dasha
   'Ivan started dancing (waltz) with Dasha.'
 c. Ivan zatanzeval PRF Dashu.
   Ivan ZA-danced Dasha
   'Ivan made Dasha exhausted by dancing too much.'

(30) a. Ivan brosal IMP kamni.
   Ivan threw stones
   'Ivan threw stones.'
b. Ivan zabrosal prf kamni.
   Ivan ZA-throw stones
   'Ivan began throwing stones.'

c. Ivan zabrosal prf Davida kamnjami.
   Ivan ZA-throw David with stones
   'Ivan stoned David by throwing stones.'

(31) a. Ivan čital imp knigi.
   Ivan read books
   'Ivan read books.'

b. Ivan začital prf knigi.
   Ivan ZA-read books
   '1. Ivan started reading books.'
   '2. Ivan damaged all the books by reading them.'

Examples (27b)-(30b) reflect an inchoative meaning of ZA-, while (30c)-(33c) express the damage subclass of the resultant meaning of ZA-. Example (31b) is ambiguous between the inchoative and resultant (damage) meanings of ZA-. The inchoative meaning in (31b) is obtained only when the plural direct object is non-quantized, while the damage meaning arises in the case of specific amount of books.

6.2.3 The Spatial – Resultant – Inchoative Alternations of ZA-

Some ZA-prefixed verbs express a full range of alternations of ZA-, occurring with all three meanings. Examples of such alternations are given in (32)-(34) below.

(32) a. Ivan tolkal imp telegu.
   Ivan pushed cart
   'Ivan pushed a/the cart.'

b. Ivan zatolkal prf telegu (v tunnel').
   Ivan ZA-pushed cart in tunnel
   'Ivan pushed the cart (into the tunnel).'
c. Ivan zatolkal PRF Mary.
   Ivan ZA-pushed Mary
   'Ivan battered Mary by pushing her.'

d. Ivan zatolkal PRF telegu.
   Ivan ZA-pushed cart
   'Ivan started pushing the cart.'

(33) a. Ivan čital IMP knigu / tekst.
   Ivan read book text
   'Ivan read a/the book / a/the text.'

b. Ivan začital PRF tekst v mikrofon.
   Ivan ZA-read text in microphone
   'Ivan read the text into the microphone.'

c. Ivan začital PRF knigu.
   Ivan ZA-read book
   'Ivan read the book to pieces.'

d. Ivan začital PRF knigi.
   Ivan ZA-read books
   'Ivan started reading books.'

(34) a. Ivan risoval IMP portret Mary.
   Ivan painted portrait of Mary
   'Ivan painted the portrait of Mary.'

b. Ivan zarisoval PRF peizaž v albom.
   Ivan ZA-painted landscape in album
   'Ivan painted the landscape down into his album.'

c. Ivan zarisoval PRF albom (kartinami).
   Ivan ZA-painted album with paintings
   'Ivan filled the album by painting (paintings).' 

d. Ivan zarisoval PRF kartiny.
   Ivan ZA-painted paintings
   'Ivan started painting paintings.'
The spatial meaning of ZA-prefixed verbs in (32b)-(34b) is realized in the presence of the goal argument (either explicit or contextually provided). The resultant meaning is illustrated in (32c)-(34c). The verb zatolkat’PRF (to batter by pushing) in (32c) acquires the damage meaning only with the animate theme Mary, začitat’PRF (to read to pieces) in (33c) gets the meaning of damage with the inanimate book, while zarisovat’ (to fill by painting) takes the cover interpretation of ZA- in (34c). As for the inchoative meaning of ZA-, zatolkat’PRF (to start pushing) in (32d) acquires it with the holistic theme argument cart. The verbs začitat’PRF and zarisovat’ in (33d)-(34d), however, can only get the inchoative meaning of ZA- when followed by plural non-quantized themes, such as books and paintings.

Examples of triple alternation of meanings of ZA-, such as the ones in (32)-(34), are quite rare. On the other hand, some Russian verbs do not occur with the prefix ZA- in any of its meanings. Let' review these verbs in more detail.

6.2.4 The Verbs that Do Not Occur with ZA-

As mentioned in the course of discussion of inchoative verbs in chapter V, some imperfective verbs do not occur with the inchoative meaning of ZA- (Šeljakin 1969)\(^37\). A good portion of such verbs do not occur with spatial and resultant meanings of ZA- as well. Thus, some imperfective verbs in Russian are incompatible with the prefix ZA-. The question is whether such verbs share any semantic features (which may account for their infelicity with ZA-), or whether their unacceptability with ZA- is not semantically based.

Padučeva 1996 describes a number of lexical categories of verbs (taxonomic categories in her terminology) that do not coincide with the meaning of initiation of a new process/state, including the inchoative ZA- (Padučeva 1996: 126 – 150).

a) state verbs, denoting atemporal properties and relations (\(\text{vnevremennye svoistva i sootnošenija}\)), such as stoit’IMP (to cost), vesit’IMP (to weigh), graničit’IMP (to border), značit’IMP (to mean), imet’IMP (to have). The term atemporal, as used by Padučeva 1996, indicates that the given verbs cannot be localized at specific interval or moment in time. Thus, atemporal state verbs in Russian do not occur with punctual

\(^37\) Sheljakin 1969 also points to the fact that the inchoative ZA- does not occur with perfective verbs. However, other meanings of ZA- generally do not arise with perfective verbs as well, with the exception of the spatial ZA- that applies to some perfective semelfactive motion verbs in Russian.
time modifiers, such as now or with duration modifiers, such as always and for X time. They also reject the delimitative prefix PO- and the inchoative ZA-.

b) State verbs, denoting steady situations (устойчивые состояния), such as golodat’IMP (to fast, hunger), ljubit’IMP (to love), gorditsja IMP (to feel proud), znat’IMP (to know). The steady states hold for extra long temporal intervals and do not coincide with the punctual at X time modifier; with the frequency modifiers, such as twice, sometimes and with the intensive duration modifier for the entire X time, such as ves’ den’ (all the day long). The inchoative prefix ZA- is generally incompatible with the steady states, though in some cases it changes a lexical meaning of the input verb. For instance, the ZA-prefixed form of gorditsja IMP (to feel proud) – zagorditsja PRF – does not mean to start feeling proud, but is rather interpreted as to become arrogant.

c) Activity verbs, denoting occupation and behavior (занятия и поведение), such as žít’IMP (to live), pravit’IMP (to rule), učitel’stvovat’IMP (to work as a teacher), važničat’IMP (to condescend), filosovstvovat’IMP (to philosophize). As with the steady states, occupational and behavioral activity verbs hold at extra-long temporal intervals and normally do not occur with the inchoative ZA-.

Thus, the verbs that do not occur with any of the meanings of the prefix ZA- are activities and states that can be characterized by the following parameters.

- incompatible with expressing motion into some location (excludes the spatial meaning of ZA-)
- do not have theme arguments (excludes the resultant meaning of ZA-)
- are not localized in time or hold for extra-long intervals (excludes the inchoative meaning of ZA-)

Having listed the possible alternations of ZA-, as well as the cases in which ZA- is not allowed, I need now to propose a plausible explanation for the observed alternation types. I shall do so in the following section 6.3.
6.3 The Pattern beyond the Alternations

The previous section 6.2 provided examples of group and individual alternations of the meanings of ZA-. Adding the alternation data to what is already known about the three core meanings of ZA- from chapters III, IV and V, the overall picture of the distribution of ZA- in Russian is summarized as follows.

- some input verbs occur only with a single core meaning of ZA-: spatial, resultant or inchoative.
- some input verbs alternate between a number of core meanings of ZA-. We have seen examples of spatial – inchoative, spatial – resultant, inchoative – resultant and spatial – resultant – inchoative alternations for single verbs.
- some pairs of related verbs show systematic behavior with respect to the prefix ZA-: each member of such pair takes a distinct meaning of ZA- on a regular basis.
- some verbs do not occur with the prefix ZA- at all.

Now let's return to the question, raised in chapter IV, of whether it is possible to predict which meaning a given input verb acquires with the prefix ZA- (if any). In the introduction section 6.1, I have argued against oversimplifying the semantic mechanism of ZA- by matching distinct meanings of the prefix to distinct syntactic structures. It is more plausible that the meaning of a ZA-prefixixed output verb depends on the interaction of some more complex factors. Naturally, one of the factors that affect the lexical meaning of the output form is a thematic class of the input verb (Padučeva 2004). The determinate motion verbs, for example, are most natural with the spatial meaning of the prefix ZA-. However, predicting the meaning of an output solely on the basis of a thematic class of an input verb does not yield reliable results. First, as we have seen in (8)-(10), the indeterminate motion verbs do not occur with the spatial meaning of ZA-, though they also belong to the motion verbs class. On the other hand, as I demonstrated in chapter III, some input verbs that do not refer to a motion directly and are incompatible with goal arguments occur with the spatial meaning of ZA-. A classical example of such verb is bit'IMP (to hit) in zabit'PRF gvozd'v stenu (to hammer the nail into the wall). In chapter III, I assumed that the prefix ZA-relies on the BAWP shift, which is capable of coercing such verbs into the spatial
interpretation by altering their lexical meanings and argument structure. A similar position is taken in Paillard 2004 proposal that a prefix can 'reconstruct' an input base verb by imposing on it a predefined relation between some structured domain (determined by the prefix) and some argument of the input verb. Paillard 2004 argues that lexical arguments play a crucial role in determining the meaning of the prefixed output. When an argument is supplied by an argument structure of the input verb, a lexical meaning of the output form is close to the meaning of its input. On the other hand, when such argument is brought in by the prefix, the lexical meaning of the prefixed verb differs considerably from that of its input form. Thus, one of the implications of Paillard 2004 proposal is that the primary factor that seems to affect the meaning of the output form is the lexical argument structure of its input verb (i.e., whether it has the specific argument, required by a given prefix, or not).

Building on Paillard's (2004) account, I will argue later on that the prefix ZA- is sensitive not only to a position of a certain lexical argument in a syntactic argument structure, but also to its thematic role. For instance, the verb zatolka\^PRF (ZA-push) has distinct interpretations with a theme argument Katja and a holistic theme argument telega (cart). Both arguments occupy the same syntactic position in the lexical argument structure of zatolka\^PRF. Yet, in the former case, zatolka\^PRF Katja is most naturally interpreted as to batter Katja by pushing, while in the latter - zatolka\^PRF telega acquires the inchoative interpretation to start pushing the cart. I will explain this phenomenon in section 6.4.

In such a way, calculating which meaning of ZA- arises with a particular input verb should be based on a thematic class of the given verb, its lexical argument structure and its pattern of thematic roles assignment (and also a likelihood of a successful application of the By-Analogy-With-Prototype shift to this verb). However, the data in 6.2 shows that some individual verbs can acquire more than one meaning of the prefix ZA-. Thus, our calculus model must also predict a pattern of alternations of meanings of ZA- for any given unprefixed input verb.

Naturally, one could argue at this point that there is no such pattern, and that the cases of alternations of ZA- in individual verbs can be explained in terms of the BAWP shift operation, which can reconstruct a given input verb by analogy with distinct prototypical classes. For instance, the input verb sypat\^IMP (to pour) in (35a), is compatible with the meaning of motion and can acquire the spatial meaning to pour into in (35b). Now, suppose one wants to express the meaning of fill up by pouring
with the given verb. Since \textit{sypat}'_{IMP} (to pour) is not directly compatible with the meaning of \textit{cover}, it has to be coerced into the given meaning by analogy with the \textit{butter} verbs. The BAWP operation, which is triggered by \textit{ZA}-, first changes the lexical meaning of \textit{sypat}'_{IMP} (to pour) into \textit{fill by pouring}. As a consequence, the new \textit{sypat}'_{IMP} verb changes its selectional restrictions on its theme argument and can now select a \textit{container-class} object, such as \textit{hole} (as all \textit{butter} verbs do). Then, the prefix \textit{ZA}- applies to the modified version of \textit{sypat}'_{IMP}, obtained by the BAWP shift, deriving the resultant \textit{cover}-class \textit{ZA}-prefixed accomplishment in (35c).

(35) a. Ivan \textit{sypal} \textit{IMP} pesok / (*jamu) v jamu.
   Ivan poured sand into hole
   'Ivan poured sand in a/the hole.'
   b. Ivan \textit{zasypal} \textit{PRF} pesok v jamu.
   Ivan \textit{ZA}-poured sand into hole
   'Ivan poured all the sand into the hole.'
   c. Ivan \textit{zasypal} \textit{PRF} jamu peskom.
   Ivan \textit{ZA}-poured hole with sand
   'Ivan filled the hole by pouring sand.'

However, if the alternations of meaning of \textit{ZA}- depend merely on the success of finding the right analogy with a different thematic class of \textit{ZA}-prefixed verbs, it is unclear why the \textit{ZA}-prefixed verbs in (35b)-(35c) do not acquire the inchoative meaning of \textit{ZA}- by analogy with the numerous inchoative \textit{ZA}-prefixed verbs in Russian. After all, the initiation of the \textit{pouring into} and \textit{covering by pouring} events can be freely expressed by the \textit{begin + infinitive} construction in (36).

(36) a. Ivan \textit{nac\text{\^c}al} \textit{PRF} \textit{zasypat}'_{IMP} pesok v jamu\textsuperscript{38}.
   Ivan began to \textit{ZA}-pour sand into hole
   'Ivan started pouring sand into the hole.'

\textsuperscript{38}The infinitive \textit{zasypAt}'_{IMP} in (43a)-(43b) is the secondary imperfective of \textit{zasYpat}'_{PRF}. Though it is morphologically identical to the perfective form, the stress in the secondary imperfective form falls on the last vowel (marked with capital A), while the stress in the perfective \textit{ZA}-prefixed form is on the second vowel (marked with capital Y).
b. Ivan načal \textsuperscript{PRF} zasypat\textsuperscript{IMP} janu peskom.

Ivan began to ZA-pour hole with sand.INSTR.

'Ivan started filling the hole up by pouring sand.'

Thus, it seems that there is a certain pattern beyond the alternations of meanings of ZA- in Russian. The choice of the range of meanings of ZA- for the given verb is not random. Rather, there appears to be some hierarchy structure that sets the pattern of alternations of ZA- by determining which meanings of ZA- can apply to which input verbs, and in what order. In order to define such hierarchy of alternations, we need to ask ourselves what semantic parameter serves as its ordering criteria.

6.3.1 Thematic Hierarchy of Participants and the ZA-Selection Rule

Remember that, as argued in Paillard 2004, verbal prefixes in Russian impose a sort of ordered relation on some argument of the verb. When such argument is unavailable, a prefix can 'bring it in', altering the lexical argument structure and changing the lexical meaning of an input verb. Paillard's (2004) intuition is compatible with the formal analysis of the meanings of ZA-, proposed in chapters III, IV and V. As shown in the previous chapters, the prefix ZA- affects three types of entities: locations, existing objects and temporal traces of events. I assume that temporal trace is embedded in the semantics of all verbs, since verbs denote events and events have running times. (Padučeva's atemporal states might seem as an exception, but I will argue further on that they also have a temporal duration).

Existing real-world objects are associated with theme arguments. In transitive verbs, a theme argument occupies the direct object position, though it can also appear in the subject position of an intransitive verb (such as jam in \textit{varen'e zagustelo} \textsuperscript{PRF} – the jam thickened). Locations are associated with a goal argument and take the peripheral indirect object position in both transitive and intransitive verbs. Thus, all verbs share a temporal constituent in their meanings; some verbs take existing objects as their themes; and some verbs have locations as their goals. Now, let's suppose, in theory, that a certain unprefixed verb introduces all three entities – location, object, running time – as obligatory participants in the event. Theoretically, one would expect all three meanings of ZA- to occur with such verb. In reality, however, there are very few examples of such alternations in the lexicon. While the rareness of \textit{spatial} –
resultant alternations of meanings of ZA- can be explained by the fact that not many verbs encode both locations and material themes as obligatory elements in their lexical argument structure, the lack of frequent spatial – inchoative and resultant – inchoative alternations of meanings of ZA- for individual verbs is more puzzling, since we expect all verbs to have running times. So the problem needs to be approached from a different angle. Let's assume that the three participants in an event that can be affected by ZA-; namely, locations, material objects and temporal traces of events, are not equal in terms of their semantic weight. Some participants are more 'prominent' than others, so that they are picked first by the corresponding prefix ZA-, barring the other variations of ZA- from applying to other less 'influential' participants. In other words, the three aforementioned participants stand in a certain thematic hierarchy with respect to each other.

The term thematic hierarchy reflects the idea that thematic roles stand in a certain ordering relation with respect to each other, accounting for a range of linguistic phenomena, attested in various languages (Baker 1997, Jackendoff 1990, Fillmore 1971, Rappaport-Hovav & Levin 2007, among others). Rappaport-Hovav & Levin 2007 provides the following example, adopted from Fillmore 1968, of the significance of thematic hierarchy in the subject selection.

(37) a. The door opened.
   b. Dana opened the door.
   c. The chisel opened the door.
   d. Dana opened the door with the chisel.

Example (37) allows formulating the following subject selection rule: if there is an agent, it becomes the subject; otherwise, if there is an instrument, it becomes the subject; otherwise, the subject is a theme. In other words, the agent ranks higher than instrument and instrument ranks higher than theme, forming the following thematic hierarchy structure in (38). The subject selection rule selects the highest ranking argument of a verb, available in the given context, as the subject.

(38) Agent > Instrument > Theme
I assume that there is a similar selection rule for the prefix Za-. Goals, themes and temporal traces of events form the TH (thematic hierarchy) structure and the Za-selection rule picks out the highest ranking participant, available in the lexical argument structure of the given input verb, and maps it to the relevant prefix Za-. If this participant happens to be the goal, the input verb acquires the spatial meaning of Za-; if it is the theme, the output gets the resultant meaning; if it is the running time of an event, the output is inchoative. The Za-selection rule is more complicated than the above subject selection rule, though, for a number of reasons. First, the running time of an event is realized at a deeper level of semantic representation, rather than as an argument in the lexical argument structure of the verb. Thus, the thematic hierarchy structure that affects the application of Za- includes not only the lexical arguments of a verb, such as goal and theme, but also a temporal constituent of an event, denoted by the given verb. For this reason, I shall use the term participants (učastniki in Padučeva 2004), rather than arguments. Second, the definition of an appropriate thematic hierarchy of participants for Za- depends on the fine-grainedness of the thematic roles of goal and theme. Adopting Dowty 1991 proposal that the thematic roles are based on the lexical entailments on the properties of the arguments, one can construct more fine-grained TH structures, depending on the properties that constitute the relevant semantic roles (see the discussion of the TH concept in Rappaport-Hovav & Levin 2007). Now, I argued in chapters III and IV that the events of change, introduced by the spatial and resultant prefixes Za-, respectively, impose specific selectional restrictions on their arguments, thus, restricting the choice of participants of an event. For instance, the spatial BECOME AT event of change requires a location, associated with a goal argument of a given verb, to allow an incursion into its inner space. Such requirement leads to the narrowing down of the types of locations that can appear in the spatial Za-prefixed verbs. Only locations with an accessible inner space can fill the goal argument position of a spatial Za-prefixed output. This selectional requirement accounts, for instance, for the impossibility of deriving the spatial Za-prefixed accomplishment *zastelit’PRF skatert’ na stol (to put the map into the table) from the input verb stelit’IMP [skatert’ na stol] (to put [the map on the table]) (example (7) from Padučeva 2004: 65). The input verb stelit’IMP does not impose the accessible inner space requirement on its goal argument, which makes it incompatible with the spatial Za- (cf. zastelit’PRF stol – to cover the table [with
map]). As illustrated in chapter IV, the theme argument of the resultant \(ZA\)- is also associated with some restrictions: i.e., an existing object that can be gradually affected with respect to some measure scale\(^{39}\). The participants in the thematic hierarchy for \(ZA\)- are provided in (39) below.

(39) **Participants in the Thematic Hierarchy**

1. Goal\(^{ZA}\)-
   
   i. stationary (relative to a movement of agent/instrument/holistic theme)
   
   ii. exists independently of a motion event
   
   iii. *contains a movement of another participant, providing the end-point on its path.*
   
   iv. *accessible inner space.*

2. Theme\(^{ZA}\)-
   
   i. causally affected by another participant
   
   ii. undergoes a change of state
   
   iii. continued real-world existence, independently of a given event
   
   iv. *allows gradual change in its property up to some maximal degree.*

3. Temporal trace of event – \(\tau(e)\).

Having provided the participants in the thematic hierarchy structure for the prefix \(ZA\)- in (39), it is time now to define the order of their ranking with respect to each other. I assume that all verbs have a running time constituent, so I shall first establish the ranking of time with respect to themes and goals. Let's start with the verbs with an obligatory theme argument that satisfies the additional lexical entailments, set by the resultant prefix \(ZA\)- (e.g., existing gradable material entity). The two obvious cases of such verbs are *change of state* scalar activities, such as *guster\(^{IMP}\)* (to thicken), and the *butter* verbs, such as *asfaltirovat\(^{IMP}\)* (to asphalt). Both types of verbs have obligatory theme arguments in their lexical argument structure, and the lexical properties of their themes naturally correspond to the selectional restrictions of the resultant \(ZA\)-:

existing objects that can be gradually affected with respect to some measure criteria. In the following example (40a)-(40b), we can see that the \(ZA\)-prefixed forms of

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\(^{39}\) There might be exceptions to this rule, though. Thus, *zaglušit’ motor* (to muffle the engine) actually refers to muffling the sound, made by the engine, rather than the engine itself. Janda 1986 classifies *zaglušit‘* as the cover-class verb.
gustet'IMP (to thicken) and asfaltirovat'IMP (to asphalt), zagustet'PRF (to thicken up) and zaasfaltirovat'PRF (to cover up with asphalt), are incompatible with the inchoative meaning, which is expressed via the \textit{begin} + \textit{infinitive} construction in (40c)-(40d).

(40) a. Varen'e zagustelo PRF.
   Jam ZA-thickened
   'The jam thickened up.' / # 'The jam started thickening up.'

b. Ivan zaasfaltiroval PRF dorogu.
   Ivan ZA-asphalted road
   'Ivan asphalted the road.' / # 'Ivan started asphalting the road.'

c. Varen'e stalo PRF gustet'IMP.
   Jam came to thicken
   'The jam started thickening.'

d. Ivan načal PRF asfaltirovat' IMP dorogu.
   Ivan began to asphalt road
   'Ivan began to asphalt the road.'

The data in (40) provides evidence in favor of the aforementioned thematic hierarchy proposal. The impossibility of the inchoative reading of the ZA-prefixed verbs in (40a)-(40b) indicates that the theme argument ranks above the temporal trace participant in the TH for ZA-, so that the ZA-selection rule maps the theme argument to the corresponding resulting prefix ZA-, bypassing the inchoative ZA-. The ranking of the theme and temporal trace participants is represented in (41).

(41) THEME$^ZA_\tau$ > $\tau(e)$

The next stage is to define the position of the goal argument, affected by the spatial prefix ZA-, with respect to the both theme and \textit{running time} participants of the TH. In order to do so, one needs to assume an existence of a class of verbs with obligatory goal arguments in their lexical structure. I believe that such class of verbs is represented by \textit{determinate motion} verbs in Russian. As argued in chapter III, the traditional approach to the determinate motion verbs holds the view that they denote a continuous progressive movement in a single direction (Forsyth 1963, Foote 1967,
Zaliznjak & Shmelev 2000). Such movement does not necessarily mean a movement along a straight line – one can move in zigzags or in spiral – as long as a general direction of the movement is unchanged. Indeterminate motion verbs, on the other hand, appear to be manner-of-motion verbs (cf. the discussion of English verbs of manner-of-motion in Tenny 1995), reflecting general movements, such as back-and-forth movements or movements in distinct directions. The determinate and indeterminate motion verbs constitute a separate aspactual subclass in Russian and exhibit unique aspactual properties (Zaliznjak and Shmelev 2000, Kagan 2007). A complete analysis of these properties of the motion verbs in Russian lies outside the scope of this work, so I shall focus on their interaction with goal arguments. Foote 1967 argues that the determinate motion verbs do not necessarily refer to the destination or goal of the movement, citing examples like *приятно идти* IMP DET pod doždjom (It is pleasant to walk under the rain) and *поезд идет* IMP DET *быстро* (the train goes fast), where the goal argument is not present. The former example, however, is restricted to occur in some habitual context (cf. # *Иван приятно шёл* IMP DET pod doždjom – Ivan pleasantly walked under the rain); while the latter can be used with an explicit goal argument (*Поезд идет* IMP DET *быстро из Тель-Авива в Хайфу* – The train goes fast from Tel-Aviv to Haifa). Thus, a goal argument in the determinate motion verbs may not always be explicitly provided, but that does not exclude the possibility of having an implicit goal argument. Such possibility is tentatively implied in Šeljakin 1969 and Zaliznjak 1995, who speak of determinate motion verbs as possessing some inherent boundary.

Let's assume that the determinate motion verbs have an obligatory goal argument, while their indeterminate counterparts lack such argument in their lexical argument structure. In such case, determinate motion verbs would be unacceptable in the context in which a movement cannot have a goal at all. It is hard, though, to conceive such context, since any movement that involves even a minimal change in location, can be associated with source and goal arguments. Perhaps, an example of a motion without changing location is *running on the spot* (Asher and Sablayrolles 1995). In such context, the indeterminate motion verbs fare much better that the determinate ones.
(42) a. Ivan (??bežal \^{IMP\,DET}) / begal \^{IMP\,INDEF} na meste p jab' minut.  
'Ivan ran on spot five minutes.'

b. Belka (??bežala \^{IMP\,DET}) / begala \^{IMP\,INDEF} v kolese ves' den'.  
'Squirrel ran in wheel all day.'

In the examples of \textit{running on the spot} in (42a)-(42b), the source and the goal are the same, so that there is no change of location of \textit{Ivan} and \textit{squirrel}, respectively, in the course of the running event. The determinate verbs are odd in such contexts, indicating that they require their goals to be distanced from the source of motion\textsuperscript{40}, resulting in a change in location of the moving entity. However, if the determinate motion verbs entail a change of location, then it is plausible that they embed an obligatory destination point, expressed by the goal argument, in their semantics. The indeterminate verbs in (42), in contrast, do not entail a change in location.

In section 6.2.1.1, I showed that the determinate and indeterminate motion verbs behave differently with respect to the prefix \textit{ZA-}. All determinate verbs acquire the spatial meaning of \textit{ZA-}, while the indeterminates take the inchoative one. So, assuming that the determinate motion verbs do have obligatory goal arguments in their lexical argument structures, it seems that a goal argument ranks higher than \(\tau(e)\) in the TH for \textit{ZA-}. Hence, it is selected first by the \textit{ZA-selection rule}, mapping it to the spatial prefix \textit{ZA-} and barring the application of the inchoative \textit{ZA-} to the determinate motion verbs. In such a case, both the theme\textsuperscript{ZA-} and goal\textsuperscript{ZA-} arguments rank above \(\tau(e)\) in the TH structure. The question now is whether the goal argument ranks above or below the theme argument in our TH of participants. To answer this question, we need to find examples of input verbs that take both obligatory theme\textsuperscript{ZA-} and goal\textsuperscript{ZA-} arguments. Such input verbs are transitive determinate verbs of motion that take goal and theme arguments. We have already seen in example (11) that the transitive indeterminate motion verbs, such as nosit\textsuperscript{IMP\,INDET} (to carry), can be coerced into a resultant interpretation of \textit{ZA-}, as in zanosit'\textsuperscript{PRF} rubašku (to wear the shirt out by wearing it for too long). Now, let's take the determinate analog of

\textsuperscript{40} As a matter of fact, we have already seen the oddness of an example with a minimal distance between source and goal arguments – ??Ivan bežal s ulizy na počtu (Ivan ran from the street into the post-office) – in chapter III.
nosit’ IMP INDET, nesti IMP DET (to carry). Nesti IMP DET (to carry) contains an obligatory goal argument in virtue of being a determinate motion verb, but it also takes a theme argument, such as shirt. If the theme argument ranks above the goal argument, we would expect that nesti IMP DET could also be coerced into the resultant interpretation to wear out with the given theme, similarly to nosit’ IMP INDET. However, example (43) shows that it is not the case.\textsuperscript{41}

(43) a. Ivan zanes PRF rubašku.
    Ivan ZA-carried shirt
    'Ivan carried the shirt in.' / # 'Ivan wore the shirt out.'

b. Ivan zanosil PRF rubašku.
    Ivan ZA-carry shirt
    'Ivan wore the shirt out by wearing it for too long.'

The data in (43) indicates that the goal argument is ranked above the theme argument and, consequently, above the τ(e) participant. Thus, the full thematic hierarchy of participants that affects the selection of meanings of ZA- as well as the lexical rule for selecting the right meaning of ZA-, is given in (44).

\textbf{(44) ZA-selection rule:}

\begin{align*}
\text{GOAL}^{ZA-} & \rightarrow \text{THEME}^{ZA-} \rightarrow \tau(e) \\
\end{align*}

Map the highest ranking participant of the TH above, available in the lexical argument structure of a given input verb, to the corresponding meaning of the prefix ZA-.

The ZA-selection rule says: take the highest ranking obligatory participant in the TH in (44), provided by the given input verb, and map it to the relevant meaning of ZA-. Since the only class of verbs in Russian with an obligatory goal participant is the determinate motion verbs, they can only occur with the spatial meaning of ZA-. The input verbs that have obligatory theme participants, satisfying the resultant ZA-

\textsuperscript{41} Actually, in some circumstances zanesti PRF obtains the meaning of cover, such as Purga zanesla PRF kamen’ snegom (The blizzard covered the stone with snow) (example from the MAS dictionary). In such cases, however, the agent is generally a force of nature, and the usage of zanesti PRF is highly idiomatic. One cannot say, for instance, # Ivan zanes PRF kamen’ snegom.
restrictions, such as change of state and butter verbs in (40), get the resultant meaning of ZA- as default. Finally, verbs that have neither goal nor theme arguments in their lexical structure, such as volnovat'jaIMP (to be worried) and smejatsjaIMP (to laugh), acquire the inchoative meaning of ZA-.

The thematic hierarchy structure in (44), on a par with the ZA-selection rule, accounts for a number of linguistic phenomena, associated with the prefix ZA- in Russian. It explains why the determinate motion verbs acquire only the spatial interpretation with the prefix ZA-; the input verbs that contain theme arguments of the type, compatible with ZA-, get the resultant meaning; and the verbs with no goals and themes can only have the inchoative reading with ZA-. We can now explain Isačenko's (1960) observation that the inchoative ZA-prefixed verbs are normally intransitive: such verbs do not have themes or goals, so the only remaining participant in the TH is time, which is mapped to the inchoative prefix ZA- by the ZA-selection rule. Despite Isačenko's (1960) claim, however, some transitive verbs do occur with the inchoative meaning of ZA-. We can explain such occurrences by assuming that the direct objects of such verbs are assigned semantic roles other than themeZA-. For instance, the transitive desire verb xotetIMP (to want) in (45) gets the inchoative meaning of ZA-, since its direct object ice-cream is stimulus, rather than theme.

(45) a. Ivan xotelIMP morožennoe.
   Ivan wanted ice-cream
   'Ivan wanted an ice-cream.'

   b. Ivan zaxotelPRF morožennoe.
   Ivan ZA-wanted ice-cream
   'Ivan felt a craving for the ice-cream.' (lit. began to want ice-cream).

It is also possible for a transitive verb to become inchoative with ZA- in the case when it has a theme argument, but that theme does not satisfy the selectional restrictions of the resultant prefix ZA- (in other words, it is not a themeZA-.) This is the case for the verb petIMP (to sing), which can take the cognate direct object pesnja (song) as its theme argument. Since song is an abstract non-material entity, which does not have a real-world existence prior to the singing event, it does not satisfy the selectional
restrictions for the theme\textsuperscript{ZA-} argument. Thus, \textit{song} does not qualify as a part of the TH in (44) and \textit{pet'}\textsuperscript{IMP} \textit{pesnju} (to sing a song) gets the inchoative reading in (46).

(46) a. Aviv pel\textsuperscript{IMP} pesn'ju.
   Aviv sang song
   'Aviv sang a/the song.'

b. Aviv zapel\textsuperscript{PRF} pesnju.
   Aviv ZA-sang song
   'Aviv started singing the song.'

So far, the TH proposal in (44) provides a plausible account of the pattern of distributions of the meanings of \textit{ZA-} in the verbal lexicon of Russian. It predicts correctly that the determinate motion verbs take the spatial meaning of \textit{ZA-}; the verbs with theme\textsuperscript{ZA-} arguments in their lexical argument structures acquire the resultant meaning; and other verbs occur with the inchoative prefix \textit{ZA-}. The trouble begins when this proposal collides with the alternations of meanings of \textit{ZA-} in 6.2. If the three participants, affected by \textit{ZA-}, stand in the thematic hierarchy relation in (44), there should not be any alternations of meanings of \textit{ZA-} for individual verbs. But such alternations exist, as we have seen in the previous section. So the \textit{ZA-} selection rule needs to be reexamined in light of the data in 6.2.

Up till now, I have talked about the obligatory participants of the thematic hierarchy, meaning that an input verb entails such participants in its event structure. Assuming that \(\tau(e)\) is always obligatory, being incorporated in the meaning of all verbs, I shall focus on the two other participants of the TH – the goal\textsuperscript{ZA-} and theme\textsuperscript{ZA-} arguments. In the previous chapters, we have encountered input verbs that did not have obligatory goal or theme arguments (or disallowed such arguments altogether), and yet were shifted into spatial or resultant \textit{ZA-} prefixed verbs by the prefix \textit{ZA-}. On the basis of such shifts, I concluded that \textit{ZA-} is capable of modifying an argument structure, imposing the missing arguments on the original lexical argument structure of an input verb (Paillard 2004 makes a similar claim with regard to verbal prefixes in Russian). Thus, an input verb does not need to have an obligatory goal\textsuperscript{ZA-} or theme\textsuperscript{ZA-} argument in order to acquire the spatial or resultant meanings of \textit{ZA-}. The \textit{ZA-} selection rule in (44), on the other hand, is based on the obligatory arguments and does not account for cases in which a goal\textsuperscript{ZA-} or theme\textsuperscript{ZA-} argument is optional or
unavailable in the argument structure of an input verb. Such cases need to be explained as well in order to fully understand the pattern of alternations of meanings of \( ZA \)- in Russian.

At this point, I need to clarify what I mean by \textit{optional argument}. An optional argument of a verb does not have an explicit position in the lexical argument structure of a verb, even if its existence is implied by the context and our real world knowledge of the situation, described by the given verb. Such inferred arguments of a verb are discussed in a number of works in English (Bresnan 1978, Fodor & Fodor 1980, Mittwoch 1982, among others). Fodor & Fodor 1980 discusses the difference between the transitive verb \textit{eat} and its intransitive counterpart in English. Basing on the behavior of the transitive and intransitive instances of \textit{eat} with universal and existential quantifiers, they conclude that the intransitive \textit{eat} does not provide a syntactic argument position for the covert theme object in its lexical argument structure. Nonetheless, the intransitive form of \textit{eat} in (47a) entails that there was an event of eating something, as described in (47b).

(47) a. Ivan ate.

               b. Ivan ate something.

Fodor & Fodor 1980 argues that the entailment of (47b) by (47a) is obtained by the means of the \textit{meaning postulate}, which is a rule of inference. Thus, their approach implies that the two forms of \textit{eat} in (47a) and (47b) have distinct syntactic and functional argument structures, as illustrated in (48a)-(48b), respectively.

(48) a. intransitive eat:  \[ _____, \quad NP_1 \text{ EAT} \]

               b. transitive eat:  \[ _____ NP], \quad NP_1 \text{ EAT} \text{ NP}_2 \]

Now let me show that Fodor & Fodor 1980 analysis is relevant for the Russian data as well. Let's take the case of the \textit{spray/load} verbs in Russian, such as \textit{sypat} \textsuperscript{IMP} (to pour) and \textit{gruzit} \textsuperscript{IMP} (to load). Examples (49a)-(50a) demonstrate that these verbs can take (at least) three lexical arguments – agent, theme and goal. The goal argument is not syntactically mandatory and can be omitted, as shown in (49a)-(50a). The theme
argument, on the other hand, is an obligatory syntactic constituent that cannot be erased\(^{42}\).

(49) a. Ivan sypal\(^{IMP}\) pesok (v jamu).
    Ivan poured sand in hole
    'Ivan poured sand into the hole.'

b. Ivan sypal\(^{IMP}\) *(pesok).
    Ivan poured sand
    'Ivan poured sand.'

(50) a. Ivan gruzil\(^{IMP}\) korobki (v mašinu).
    Ivan loaded boxes in car
    'Ivan loaded boxes into the car.'

b. Ivan gruzil\(^{IMP}\) *(korobki).
    Ivan loaded boxes
    'Ivan loaded boxes.'

Following Fodor & Fodor 1980 approach, I assume that sypat\(^{IMP}\) (to pour) and gruzit\(^{IMP}\) (to load) in (49) and (50) have different argument structures, respectively. The given verbs have lexically realized goal argument positions in (49a)-(50a), but lack such positions in their argument structures in (49b)-(50b). Examples (49b)-(50b) do entail existence of some goals, but such entailment arises from the relevant meaning postulate in (51).

(51) \(x \text{LOAD } y = (\exists z) x \text{LOAD } y \text{ to } z\)

If the imperfective verbs sypat\(^{IMP}\) (to pour) and gruzit\(^{IMP}\) (to load), indeed, have alternative argument structures – a three-place argument structure for Agent, Theme, Goal vs. a two-place structure for Agent, Theme – we would expect the ZA-selection rule in (44) to react to this alternation. When an argument structure contains a goal argument position, the ZA-selection rule takes goal as a highest ranking argument and maps it to the spatial prefix ZA-. When a goal argument is not present, ZA-selection

\(^{42}\) Some usages of sypat\(^{IMP}\) (to pour) allow an intransitive form, as in Sypal\(^{IMP}\) sneg (The snow was pouring down) (MAS). Such usage is restricted and occurs only when an agent is force of nature.
rule maps the next participant in the TH – the theme argument – to the resultantZA-. If a verb allows omitting its theme argument, only the τ(e) remains (ZA- apparently is not sensitive to agent) and a verb should acquire an inchoative reading with ZA-. This prediction is borne out in (52)-(53) below.

(52) a. Ivan sypal IMP pesok (v jamu).
    Ivan poured sand in hole
    'Ivan poured sand (in a/the hole).'
b. Ivan zasypal PRF pesok ?(v jamu).
    Ivan ZA-poured sand in hole
    'Ivan poured all the sand into the hole.'
c. Ivan zasypal PRF *(jamu).
    Ivan ZA-poured hole
    'Ivan filled the hole by pouring [sand].'
d. Zasypal PRF sneg.
    ZA-poured snow
    'The snow started falling.'

(53) a. Jeff gruzil IMP mebel' (v gruzovik).
    Jeff loaded furniture in truck
    'Jeff loaded furniture into a/the truck.'
b. Jeff zagruzil PRF mebel’ ?(v gruzovik).
    Jeff ZA-loaded furniture in truck
    'Jeff loaded the furniture into the truck.'
c. Jeff zagruzil PRF *(gruzovik) (mebel'ju).
    Jeff ZA-loaded truck with furniture
    'Jeff loaded the truck up (with furniture).'

The ZA-prefixed verbs zasypat' PRF and zagruzit' PRF in (52)-(53) alternate between the spatial and the resultant meanings of ZA- (and inchoative for zasypat' in (52d)). The ZA-prefixed forms of sypat' IMP (to pour) and gruzit' IMP (to load) acquire the spatial meaning in the presence of the goal argument in (49b)-(50b). Note that the goal argument in (52b)-(53b) cannot be easily omitted, as indicated by the oddness of #Ivan zasypal pesok (Ivan poured the sand in) and #Ivan zagruzil korobki (Ivan
loaded the boxes in) in an out-of-blue context, where the goal is unknown. The theme arguments in (52c)-(53c) must be explicitly provided and cannot be erased from the lexical argument structure of \(zaspapat^{\text{PRF}}\) and \(zagruzit^{\text{PRF}}\), respectively. Finally, the intransitive \(zaspapat^{\text{PRF}}\) (to start snowing) acquires an inchoative meaning in (52d).

The data in (52)-(53) allows formulating the following generalization: *verbs with alternative argument structures acquire alternative meanings of ZA- in accordance with the ZA-selection rule and the TH in (51)*. For instance, verbs that can take either explicit goal and theme arguments, or only a theme argument, such as the *spray/load* verbs in (49)-(50), will alternate between the spatial and the resultant meanings of ZA-. Or, when a certain verb has a transitive form (with a theme argument as its object) and a homonymous intransitive one (and its subject is not a theme), its transitive form acquires the resultant meaning of ZA-, while the intransitive one gets an inchoative reading. Actually, we have seen such types of alternation in in 6.2.1.2. The example (15) with the verb *bit*\(^{\text{IMP}}\) (to hit) is repeated in (54).

(54) a. Ivan bil\(^{\text{IMP}}\) kulakom po stolu.
    Ivan hit with fist.INSTR on table
    'Ivan hit a/the table with his fist.'

b. Ivan zabil\(^{\text{PRF}}\) kulakom po stolu.
    Ivan ZA-hit with fist.INSTR on table
    'Ivan started hitting the table with his fist.'

c. Ivan bil\(^{\text{IMP}}\) Marka palkoj.
    Ivan hit Mark.ACC with stick
    'Ivan beat Mark with the stick.'

d. Ivan zabil\(^{\text{PRF}}\) Marka palkoj.
    Ivan ZA-hit Mark.ACC with stick
    'Ivan beat Mark severely/to death with the stick.'

At this point, I'd like to make a reservation with regard to Fodor & Fodor 1980 approach. That analysis implies that the number of overt elements in the syntactic structure of a verb corresponds to a number of positions in its functional argument structure. While such approach explains the alternations of meanings of ZA- in (52)-(54), it cannot be the case for all the lexical verbs in Russian. In fact, I believe that some syntactically intransitive one-place verbs do have covert theme or goal
arguments in their lexical argument structure. We have already seen that the determinate motion verbs in Russian have an inherent goal argument in their argument structure, which is either explicit or elliptic. It also looks like some imperfective accomplishment verbs, such as est'IMP (to eat), risovat'IMP (to paint) and čitat'IMP (to read), have an obligatory theme argument, even if it is not explicitly realized. The syntactically intransitive forms of these imperfective accomplishments are normally incompatible with the inchoative meaning of ZA-. Thus, I conclude that the determinate motion verbs and the imperfective lexical accomplishments in Russian serve as exceptions for the meaning postulate analysis in Fodor & Fodor 1980 by allowing elliptic arguments in their argument structure.

At the first sight, it seems that the ZA-selection rule, formulated in (44), correctly predicts the alternation of meanings of ZA- for verbs that have alternative argument structures (with respect to goal, theme and time participants). The more careful examination of the data in (49)-(50) and (52)-(53) would reveal, however, that there are certain lexical changes, affecting the theme argument, between imperfective and ZA-prefixed forms. I have argued earlier that the spatial and resultant prefixes ZA- are sensitive to more fine-grained semantic roles of goal and themes, as specified in (39). I named these fine-grained roles $goal^{ZA}$ and $theme^{ZA}$, respectively (example 39). I argued that: a) the restriction by the prefix ZA- on the properties of goals and themes leads to the narrowing down of types of objects that can serve as goals or themes of a ZA-prefixed verb, compared to its input form; b) if an input verb takes a theme (or a goal) argument that is incompatible with the restrictions, set by the relevant prefix ZA-, the ZA-selection rule fails to map such argument to the corresponding meaning of ZA-. I used the $b$ argument to justify the absence of the resultant meaning in zapet'PRF pesn'ju (to start singing the song) in (46b). However, as illustrated earlier, the input verb sypat'IMP (to pour) has different selectional requirements for its theme argument, compared to its ZA-prefixed output.

(55) a. Ivan sypal IMP pesok / *jamu.
    Ivan poured sand hole
    'Ivan poured sand.'

43 Mittwoch 1982 argues that the intransitive $eat$ in English is an activity; while the transitive $eat$ $something$ is an accomplishment.
b. Ivan zasypal PRF jamu / ??pesok.
Ivan ZA-poured hole sand
'Ivan filled the hole up by pouring.'

The imperfective sypat' IMP (to pour) takes sand, but not hole, as its theme, while its ZA-prefixed resultant counterpart zasypat' PRF (to fill up by pouring) allows hole, but not sand, as its theme. It seems that the selectional restrictions of the prefix ZA- are incompatible with the selectional restrictions, imposed on a theme argument by the input verb sypat' IMP. In such case, the ZA-selection rule predicts that the prefix ZA- moves to the next participant in the thematic hierarchy (in this case, τ(e)), as it happened with zapet' PRF pesnju (to start singing the song). Instead of doing so, however, the prefix ZA- simply 'adjusted' the theme argument of sypat' IMP to fit its own selectional restrictions. Such situation means that the prefix ZA- not only sets additional restrictions on the theme (or goal) of its input verb, but in some cases it can also substitute the 'inconvenient' theme (or goal) argument by the one that satisfies its restrictions. Obviously, such substitution is not universally allowed, since zapet' PRF pesnju did not get the resultant interpretation with ZA-. So, in view of (55), the ZA-selection rule needs to be modified, as follows.

(56) Modified ZA-selection rule:
GOALZA- > THEMEZA- > τ(e)
Map the highest ranking participant of the TH above, available in the lexical argument structure of the given input verb, to the corresponding meaning of the prefix ZA-. If that participant does not satisfy the selectional restrictions of the relevant ZA-, try to substitute it by the one that does.

The obvious question is, then, in which cases the adjustment of theme or goal argument is possible. Before attempting to provide an answer, let me demonstrate more radical effects of the prefix ZA- on the lexical argument structure of an input verb. In the section 6.2, we have already seen that ZA- can impose a lexical argument that is disallowed with the given input verb. Consider examples (57)-(58).
(57) a. Ivan bil IMP Marka /*gvozd' (*)v stenu.
    Ivan hit Mark nail in wall
    'Ivan hit Mark.'

b. Ivan zabil PRF gvozd' / Marka v stenu.
    Ivan ZA-hit nail Mark in wall
    'Ivan hammered nail into the wall.'

(58) a. Ivan govoril IMP (*menja).
    Ivan talked me
    'Ivan talked to me.'

b. Ivan zagovoril PRF menja.
    Ivan ZA-talked me.ACC
    'Ivan confused me / bored me with his excessive talking.'

The spatial ZA- in (57b) reverses the selection of a theme argument of the
imperfective bit IMP (to hit) in (57a), replacing the animate theme Mark by the
inanimate nail, and adds the goal argument wall, which is disallowed with bit IMP.
The resultant ZA- in (58b) adds the animate theme argument me, which is
incompatible with the lexical argument structure of the imperfective input verb
govorit IMP (to talk). The ZA-prefixed zabit PRF and zagovorit PRF also have
normative resultant and inchoative meanings to beat severely and to start talking,
respectively. Thus, if a certain argument in the TH is unavailable in the lexical
argument structure of the input verb, the prefix ZA- can impose this argument,
modifying the lexical argument structure of the input verb. Naturally, as with the
adjustment of arguments, such imposition is not uniformly allowed; otherwise each
ZA-prefixed verb would alternate between the three meanings of ZA-. In order to
account for the data in (57)-(58), I shall modify the ZA-selection rule once again.

(59) Modified ZA-selection rule (2nd version):
    GOAL ZA- > THEME ZA- > τ(e)
    Map the highest ranking participant of the TH above to the corresponding
    meaning of the prefix ZA- with respect to the input verb. If that participant is
    not a part of the lexical argument structure of the input verb, try to impose it or
map the next one. If it does not satisfy the selectional restrictions of the relevant ZA-, adjust it. If adjustment fails, go to the next participant in the TH.

The rule in (59) would make alternations of the meanings of ZA- largely dependent on the success of adding a new argument to the existing argument structure of an input verb, and on the ability of ZA- to shift the theme argument of the input verb into theme \(ZA'\) (or goal – into goal\(^{ZA}\)). If a given input verb can have an alternative argument structure, obtained by expanding its own argument structure by adding goal or theme, then it can also have an alternative reading with the prefix ZA-.

The important point here is that the expansion of the lexical argument structure by ZA- does not bar it from occurring with a non-expanded verb. Thus, adding the goal argument to \(bit'\IMP\) (to hit) in (57b) did not cancel the resultant meaning of \(zabit'\PRF\) (to beat). In some sense, then, ZA- created a new three-place predicate \(bit'\) (Agent, Theme, Goal) by expanding the existing two-place argument structure of \(bit'\) (Agent, Theme). The ZA-selection rule, thus, has a choice of applying to such new word or to the existing one.

On the other hand, if an existing theme or goal argument of an input verb can be shifted to the one, appropriate for ZA-, then such verb will not occur with the lower ranking meaning of ZA-. The problem is it is unclear why the impositions of new arguments and/or shifts in their selectional restrictions are successful in some cases, but fail in others. Consider, for instance, the following examples in (60).

(60) a. Ljudi tolkali \IMP\ Mašu / telegu.
    People pushed Masha cart
    'People pushed Masha / a/the cart.'

b. Ljudi zatolkali \PRF\ Mašu.
    People ZA-pushed Masha
    '1. People battered Masha by pushing her.'
    '2. ?People started pushing Masha.'

c. Ljudi zatolkali \PRF\ telegu.
    People ZA-pushed cart
    '1. People started pushing the cart.'
    '2. *People destroyed the cart by pushing it.'
The verb *tolkat’IMP* (to push) in (60a) can take both the animate object *Masha* and the inanimate *cart* as its theme. The interpretation of its *ZA*-prefixed form, however, differs with each object. With the animate *Masha*, *zatolkat’PRF* (to batter by pushing) normally acquires the resultant damage meaning of *ZA-*, while the inchoative one is odd in this context. With the inanimate *cart*, only inchoative reading of *ZA-* for *zatolkat’PRF* (to start pushing) is possible. With respect to the modified *ZA*-selection rule in (59), the data in (60) means that the animate object *Masha* can be interpreted as theme *ZA*- (i.e., the existing material entity, gradually affected in the course of pushing), while the inanimate *cart* cannot be fitted into such role, forcing the inchoative reading of *ZA-* as the only remaining option. So the question again is whether it is possible to predict when *ZA-* modifies an argument structure and a lexical meaning of an input verb. If the answer is a negative one, one has to make up with the situation in which many alternations of *ZA-* cannot be predicted. If the answer is positive, then there should be a mechanism that accounts for the data in (57)-(58) and (60). Such mechanism is the *by analogy with the prototype* operation, first discussed in chapter III. In what follows, I attempt to summarize how this mechanism works in the case of the prefix *ZA-* in its three instantiations.

### 6.3.2 The BAWP Shift Operation and the Prefix *ZA-*

In chapter III, I argued that the BAWP shift alters the lexical meaning of an input verb (and/or its syntactic argument structure) to make it suitable for the application of the spatial prefix *ZA-.* In chapter IV, I illustrated that the same BAWP mechanism is engaged in deriving resultant *ZA*-prefixed accomplishments. In chapters III and IV, we have seen that some thematic classes of input verbs are semantically close to their *ZA*-prefixed outputs in terms of their lexical meanings and argument structure. I have previously referred to such classes as prototypes. The list of prototypical thematic classes of input verbs and their *ZA*-prefixed correlates is as follows.
Prototypical Thematic Classes of Input Verbs and their ZA-Prefixed Outputs

<table>
<thead>
<tr>
<th>Thematic Class</th>
<th>Input Verb</th>
<th>Output Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thematic Class</td>
<td>determine motion</td>
<td>ZA-prefixed spatial</td>
</tr>
<tr>
<td>Agent/Instr., &lt;Theme&gt;</td>
<td>bezat' (to run), nesti (to carry)</td>
<td>zabezat' (to run into), zanesti (to carry in)</td>
</tr>
<tr>
<td>Thematic Roles of Participants</td>
<td>Goal</td>
<td>Goal</td>
</tr>
<tr>
<td>Thematic Class</td>
<td>change of state</td>
<td>ZA-prefixed accumulative</td>
</tr>
<tr>
<td>Agent/Instr., Theme</td>
<td>gustet' (to thicken), konservirovat' (to preserve)</td>
<td>zagustet' (to thicken up), zakonservirovat' (to preserve)</td>
</tr>
<tr>
<td>Thematic Roles</td>
<td>&lt;Agent/Instr.&gt;</td>
<td>&lt;Agent/Instr.&gt;, Theme</td>
</tr>
<tr>
<td>Thematic Class</td>
<td>butter, fill</td>
<td>ZA-prefixed cover</td>
</tr>
<tr>
<td>Agent/Instr., Theme</td>
<td>asfaltirovat' (to asphalt)</td>
<td>zaasfaltirovat' (to asphalt)</td>
</tr>
<tr>
<td>Thematic Roles</td>
<td>Agent/Instr., Theme</td>
<td>Agent/Instr., Theme</td>
</tr>
<tr>
<td>Thematic Class</td>
<td>kill, damage</td>
<td>ZA-prefixed damage</td>
</tr>
<tr>
<td>Agent/Instr., Theme</td>
<td>muciť' (to torture)</td>
<td>zamuciť' (to torture to death)</td>
</tr>
<tr>
<td>Thematic Roles</td>
<td>Agent/Instr., Theme</td>
<td>Agent/Instr., Theme</td>
</tr>
<tr>
<td>Thematic Class</td>
<td>acquisition</td>
<td>ZA-prefixed Get</td>
</tr>
<tr>
<td>Agent/Instr., Theme</td>
<td>kupit' (to buy)</td>
<td>zakupit' (to buy a lot of)</td>
</tr>
<tr>
<td>Thematic Roles</td>
<td>Agent/Instr., Theme</td>
<td>Agent/Instr., Theme</td>
</tr>
</tbody>
</table>

The list in (61) shows the prototypical thematic classes of input verbs for the spatial and resultant ZA-prefixed accomplishments. The inchoative meaning of ZA- is omitted from the list, since all verbs are assumed to have a temporal participant, so it does not have to be imposed by the BAWP shift. The function of the BAWP lexical coercion process is, thus, to expand the range of the spatial and resultant ZA-prefixed accomplishments.

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44 Theme is available only in the transitive determine motion verbs.
45 Agent is available only in the transitive change of state verbs
accomplishments, which can be derived by the prefix ZA-, beyond the prototypical thematic classes of input verbs in (61). The BAWP shift provides the prefix ZA- with word-formational capabilities, turning it from a mere aspectual shift-operator into a powerful tool of coining new lexemes in the lexicon. I assume that the BAWP operation works as follows. First, it takes a given input verb that does not belong to any of the thematic classes of input verbs in (61). Then, it compares it against the prototypical input classes, checking for the best analogy. For instance, in the case of zabita\^{PRF} gvozd' v stenu (to hammer the nail into the wall), the BAWP operation models the verb bita\^{IMP} (to hit) by analogy with the determinate motion verbs, changing its meaning into move by hitting and adding a missing goal argument to its lexical argument structure.

How does the BAWP shift choose which thematic class among those in (61) is the best analogy model for a given input verb? I presume that the association of an input verb with the prototypical derivations of ZA- is possible only if a metonymic shift can isolate a component of its meaning, compatible with the lexical meaning of input verbs in a certain prototypical thematic class. For instance, the creation verb stroit^{PRF} (to build) implies that some area was covered in the course of the building event, though such implication is not a central component in its lexical meaning. The BAWP operation focuses on this component of meaning and makes it a central one, coercing stroit^{PRF} to the cover by building interpretation, by analogy with the prototypical butter-class verbs. As a result of such shift, stroit^{PRF} changes its selectional restrictions and takes an existing surface-type object as its theme. In such way, the BAWP shift adjusts a goal or a theme participant of non-prototypical input verbs to fit the selectional restrictions of ZA-. Let me demonstrate the two cases of application of BAWP with the imperfective input verb šit^{IMP} (to sew) in (62).

(62) a. Ivan šil^{IMP} pidžak / (*šil^{IMP} bulavku v pidžak).

Ivan sewed suit sewed pin in suit
'Ivan sewed a/the suit.'

b. Ivan zašil^{PRF} bulavku v pidžak.

Ivan sewed pin in suit.ACC
'Ivan sewed the pin into the suit.'
c. Ivan zašil\textsuperscript{PRF} pidžak.

Ivan sewed suit
'Ivan sewed up the suit.'

Example (62) shows that \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) (to sew) is a verb of creation, incompatible with a goal argument. Its \( ZA \)-prefixed form \( za\ddot{s}i\ddot{t} \textsuperscript{IMP} \), however, can have the spatial meaning *to sew into* in (62b) and the resultant cover meaning *to sew up* in (62c). Let me illustrate how these meanings are obtained. Since the verbs of creations are generally disallowed with the resultant prefix \( ZA \) due to the violation of its selection criteria (a theme of a \( ZA \)-prefixed verb must be an existing real-world object), \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) (to sew) needs to undergo a shift in its lexical meaning, and the BAWP mechanism is activated. Since \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) does not allow a goal argument – a highest-ranking participant of the TH in (59), the BAWP can attempt to add such argument, or apply to the existing theme. Suppose it chooses the former. In such case, \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) is associated with the prototypical derivation of the spatial \( ZA \)-prefixed verbs in (61). Thus, it needs to be assigned a lexical meaning and an argument structure of a transitive determinate motion verb\textsuperscript{46}. Now, \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) involves a certain component of motion in its lexical meaning, since it denotes an event of creating a suit by series of operations, one of which is *moving the needle*. So the metonymic shift, initiated by the BAWP, isolates this component and shifts the interpretation of \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) into something like *to move in the course of sewing*. Next, the association with the prototypical spatial derivation requires that a theme argument of the metonymically shifted \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) is compatible with the role of holistic theme. This, consequently, restricts the choice of lexical items in the theme position to the taxonomic class of movable objects. By analogy with (68a), the goal argument, added by the BAWP operation, is also restricted to take objects, denoting accessible locations. Thus, we obtain the new verb \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \), which means *to move by sewing* and takes a holistic theme argument and a goal argument. In (69), the holistic theme argument is filled by *pin*, while *suit* occupies the goal argument position, undergoing a metaphorical drift into the taxonomic class of *accessible locations*. Then, the spatial prefix \( ZA \)- applies, and the resulting output form acquires

\textsuperscript{46} The verb \( \ddot{s}i\ddot{t} \textsuperscript{IMP} \) (to sew) is an imperfective lexical accomplishment, so I assume that it is converted into activity by the EXT operation before the BAWP operation applies.
a meaning of move the pin object into the inner space of the suit location in the course of sewing, or, more pragmatically speaking, to sew the pin into the suit.

Now let's see what happens if the BAWP shift applies to the existing theme argument of šit'IMP (to sew). Again, since šit'IMP is a verb of creation, its theme is not \textit{a priori} an existing real-world object, which conflicts with the selection restrictions of the resultant prefix ZA-. However, šit'IMP is also compatible with some idea of covering in the course of the sewing event. Thus, the BAWP metonymically shifts šit'IMP, by analogy with the prototypical derivation of the cover resultant verbs in (61), into the meaning of cover by sewing. Consequently, the theme argument of šit'IMP is shifted to take surface or container objects. The suit in (69c), then, serves as a metaphor of the hole in the suit, which is interpreted as a container-class object, covered up in the course of sewing event.

One has to bear in mind that the above analysis of the BAWP operation is informal and does not provide absolute predictions about ability of a certain input verb to occur with this or that meaning of ZA-. For instance, the resultant damage meaning of zatolkat'PRF Mashu (to batter Masha by pushing) in (60b) vs. the impossibility of such meaning with zatolkat'PRF telegu in (60c) can be explained by the fact that the resultant meaning of zatolkat'PRF is built by analogy with the prototypical damage verbs in (61), which require animate objects. On the other hand, the resultant damage meaning of ZA- occurs with such verbs, as začitat'PRF knigu (to read book to pieces), zaigrat'PRF plastinku (to wear the record off by playing), zastirat'PRF rubašku (to wear the shirt off by washing), which take inanimate objects. Another exception is the input verb pisat'IMP (to write), which acquires only the spatial meaning to write into with ZA-, though a similar verb risovat'IMP (to paint) is acceptable with both spatial and resultant meanings of ZA-. Thus, the BAWP operation, as formulated above, cannot determine with certainty whether a certain verb can be coerced into spatial or resultant meaning of ZA-. Yet it is possible to make some generalizations about the likelihood of some thematic classes of verbs occurring with some meaning of ZA-. For instance, the verbs of sound, such as govort'IMP (to speak), emotional states, such as volnovatsjaIMP (to worry) and verbs of color, such as zelenet'IMP (to look green), are not associated with motion and, therefore, are not likely to be shifted into the spatial meaning of ZA- by the BAWP. Indeed, I am not aware of cases of spatial – inchoative alternation, involving these thematic classes of
verbs. On the other hand, we expect the verbs that have some sort of a motion component in their meanings to occur with the spatial prefix ZA-. Indeed, in chapter III, we observed cases of the various thematic subclasses of put verbs, which occurred with the spatial ZA-. In the cases of inchoative – resultant alternations in 6.2, such as *zatanzevat*\(^{\text{PRF}}\) *Dashu* (to make Dasha sick by dancing), the resultant damage meaning of the verb was achieved by imposing an animate theme to an intransitive verb by analogy with the prototypical derivation of the resultant damage ZA-prefixixed verbs in (61). To sum up, the ZA-selection rule in (59), together with the BAWP, account for some alternations of meanings of ZA- we saw in 6.2 and allow some predictability (albeit a limited one) of the range of meanings of ZA-, which may occur with the given input verb. Nevertheless, the rule in (66) fails to account for some other patterns of alternations of meanings of ZA-, observed in 6.2., such as the obligatory inchoative interpretation of the indeterminate imperfective motion verbs (section 6.2.1.1) and accomplishment verbs with non-quantized plural objects. Such problems are resolved in the following section.

### 6.4 Explaining the Anomalies in the Pattern

There are three general types of anomalies that undermine the rule of alternations of the meanings of ZA- in (59). The first category includes motion verbs that violate the ZA-selection rule in (59). The second category consists of accomplishment verbs with non-quantized themes, reviewed in chapter V, that acquire an inchoative reading of ZA-. Finally, the third anomaly is activity and state verbs in 6.2.5, which do not occur at all with the prefix ZA-. I shall now discuss each of these anomalies in more detail.

As we have seen in (60), the verb *tolkat*\(^{\text{IMP}}\) (to push) allows two alternative readings with ZA-, depending on its choice of a theme argument. An animate argument leads to the resultant damage reading of *zatolkat*\(^{\text{PRF}}\), while an inanimate one results in the inchoative reading of the ZA-prefixixed verb. Such variation is problematic for the selection rule in (59), which allows mapping the temporal participant to the inchoative ZA- only when a theme argument cannot be adjusted to occur with the resultant ZA-. Such adjustment explains the lack of inchoative reading with the creation verbs, such as *šit*\(^{\text{PRF}}\) (to sew) and *stroit*\(^{\text{PRF}}\) (to build) – their themes can be adjusted by the BAWP shift to fit the requirements of the resultant ZA- and,
therefore, there is no need to proceed to the lower time participant in the TH. However, the same principle should exclude the inchoative reading of \textit{zatolkat}^{\text{PRF}} \textit{telegu} (to start pushing the cart) due to the fact that \textit{zatolkat}^{\text{PRF}} can have the resultant damage meaning \textit{to batter by pushing} with \textit{ZA-}, when followed by an animate theme. The case of \textit{tolkat}^{\text{IMP}} (to push) can be explained, though, by assuming that there are two different homophonous verbs \textit{tolkat}^{\text{IMP}} in Russian, belonging to different thematic classes: one is a \textit{verb of touch} and the other is a \textit{verb of relocation}. The MAS dictionary actually supports such assumption by providing two definitions for the meanings of \textit{tolkat}^{\text{IMP}}: 1) to touch someone with a swift motion, push; 2) to force <someone> to go somewhere by pushing, or to move or relocate <something> in a certain direction. The first verb takes an animate theme argument and, consequently, acquires the resultant damage meaning with \textit{ZA-}. The second verb takes an inanimate theme argument, which does not fit the selectional restrictions of the resultant \textit{ZA-}, and, hence, gets the inchoative meaning by (59). Such explanation, however, is also problematic, since it does not make it clear why other inanimate objects, such as \textit{book} in \textit{začitat}^{\text{PRF}} \textit{knigu} (to read book to pieces), can be coerced into the damage interpretation, while the \textit{cart} cannot. Moreover, \textit{tolkat}^{\text{IMP}} cannot be treated as a mere exception, since a whole class of \textit{throw} verbs show a similar alternation of their readings with \textit{ZA-} with respect to the taxonomic class of their objects. Consider the following examples in (63).

\begin{quote}
\begin{enumerate}
\item a. Ivan brosal^{\text{IMP}} \text{*kolodez} / ??Davida / kamni'.
   Ivan threw well David stones
   'Ivan threw stones.'
\item b. Ivan zabrosal^{\text{PRF}} kolodez kamnjami.
   Ivan ZA-threw well with stones
   'Ivan filled the well up by throwing stones.'
\item c. Ivan zabrosal^{\text{PRF}} Davida kamnjami.
   Ivan ZA-threw David with stones
   'Ivan stoned David.'
\item d. Ivan zabrosal^{\text{PRF}} kamni.
   Ivan ZA-threw stones
   'Ivan started throwing stones.'
\end{enumerate}
\end{quote}
The situation with brosatIMP (to throw) in (63) is more complex. Contrary to the imperfective push, throw in (70a) does not allow animate themes or even inanimate ones of the taxonomic CONTAINER class. Examples (63a)-(63b) show, however, that a theme argument of brosatIMP can be adjusted by the BAWP operation to allow animate objects, resulting in the damage reading with ZA- in (63c), or container-class objects, resulting in the cover reading of ZA- in (63b). Since the adjustment of the theme argument in (63b)-(63c) is successful, the operation of mapping the meanings of ZA- to brosatIMP should stop at this point, as required by the selection rule in (59). However, brosatIMP can also occur with the inchoative reading of ZA- in (63d), thus, violating the alternation pattern, set by (59).

In fact, the resultant – inchoative alternation pattern of brosatIMP (to throw) corresponds to the alternation pattern of verbs that do not have a theme argument in their argument structure, such as govoritIMP (to speak) and other examples in 6.2.2.3. In the case of such verbs, the ZA-selection rule has a choice between imposing a theme argument via BAWP operation and mapping it to the resultant ZA- or proceeding to the lowest participant of the TH, a temporal trace. Thus, the account in (59) can be saved by assuming that a subset of motion verbs, such as tolkatIMP (to push) and throw-class verbs, such as brosatIMP (to throw), have a non-theme argument (or a special subtype of theme ZA- is insensitive to) in their argument structure. In chapter I, I distinguished between themes of motion verbs (named Holistic Themes, as in Filip 1999) and other themes. Though earlier accounts do not make a significant distinction between the themes of motion verbs and other types of themes (Gruber 1967, Jackendoff 1990), I believe that such distinction does play a role in the grammar, as manifested by the behavior of ZA-. The prefix ZA- does not recognize a Holistic Theme argument as a subtype of theme and, therefore, does not attempt to adjust it into a more fine-grained ThemeZA-. Rather, ZA- treats motion verbs as verbs without a theme argument and, by (59), has a choice between imposing a themeZA- argument and assigning the inchoative meaning to the verb. We have seen further evidence in favor of such proposal with transitive indeterminate motion verbs, such as nositIMP (to carry) in (11), which alternates between the resultant zanosit'PREFrubašku (to wear the shirt out) and the inchoative zanosit'PREFćemodan (to start carrying suitcase). In the former case, the prefix ZA- imposed a themeZA- argument shirt on the lexical argument structure of nositIMP (to carry); while in the latter it
applied to the temporal participant of the *carrying* event, resulting in the inchoative meaning for the ZA-prefixed *zanositi* PRF. The problem with such approach is that *nosit* IMP is a transitive verb (*Ivan nositi IMP*) that has an obligatory Holistic Theme argument in its argument structure. So, ZA- must be able to modify an argument structure of *nosit* IMP to such extent that it replace the existing holistic theme argument *suitecase* by the gradable affected theme $^\text{ZA-}$. 

So far, the pattern of the alternations of the meanings of ZA- can be summarized as follows.

- The meaning of the input verb with the prefix ZA- is determined with respect to the thematic hierarchy of participants in (59).
- Verbs that allow alternative argument structures acquire alternative meanings of ZA-.
- ZA- has an option of adding theme $^\text{ZA-}$ and goal $^\text{ZA-}$ arguments to the lexical argument structure of an input verb or even replacing the existing non-incremental theme arguments (such as Holistic Theme) by theme $^\text{ZA-}$. This option depends on the success of the BAWP operation. When such option is successfully realized, an input verb acquires alternative meanings of ZA-.
- If an input verb has an argument, which does not satisfy the selectional restrictions of ZA-, the lexical meaning of the verb and, consequently, its lexical restrictions on that argument, is adjusted by BAWP. Only if such adjustment fails, ZA- selects the next participant in the TH.

Making ZA- distinguish between Holistic Themes of the motion verbs and other themes solves the first anomaly in the behavior of the prefix ZA- with transitive motion verbs. Nonetheless, we face a more fundamental problem when we consider the behavior of ZA- with the indeterminate motion verbs. The pattern of alternation of ZA-, defined in (59), predicts that verbs with alternative argument structure would acquire distinct meanings of ZA-. This prediction was borne out with the *spray/load* class verbs, such as *sypati* PRF (to pour) in (52), which have an optional goal argument position in their lexical argument structure, and, therefore, alternate between the spatial and the resultant meanings of ZA-. I have argued in the previous section 6.3 that the determinate motion verbs have obligatory goal positions and, thus, can occur only with the spatial meaning of ZA-. The indeterminate motion verbs, on the other
hand, do not have an obligatory goal argument position. Nonetheless, they can have optional goal arguments, as illustrated in (64).

(64) a. Ivan xodil\textsuperscript{IMP} \textsuperscript{INDET} (v les).
    Ivan walked in forest
    'Ivan walked to a/the forest.'
  b. Korabl' plaval\textsuperscript{IMP} \textsuperscript{INDET} (v Haifu).
    Ship swam in Haifa
    'The ship sailed to Haifa.'

Thus, we expect the indeterminate motion verbs in (64) to alternate between the spatial and inchoative meanings of ZA-. However, as we have already seen in 6.2.1.1, it is not the case.

(65) a. Ivan zaxodil\textsuperscript{PRF} v les.
    Ivan ZA-walked in forest
    'Ivan started walking to the forest.'
  b. Korabl' zaplaval\textsuperscript{PRF} v Haifu.
    Ship ZA-swam in Haifa
    'The ship started sailing to Haifa.'

The ZA-prefixed outputs of the indeterminate motion verbs maintain the inchoative reading of ZA- even with the explicit goal arguments. Moreover, as I demonstrated in the spatial-inchoative group alternation section 6.2.1.1, such behavior with ZA- is not limited to the indeterminate motion verbs, but is manifested in throw verbs, such as brosit'\textsuperscript{IMP} (to throw), and general activities of motion, such as prygat'\textsuperscript{IMP} (to jump).

(66) a. Jeff brosal \textsuperscript{IMP} kamni v kolodez.
    Jeff threw stones in well
    'Jeff was throwing (the) stones at the well.'
  b. Jeff zabrosal\textsuperscript{PRF} kamni v kolodez.
    Jeff ZA-threw stones in well
    'Jeff began throwing (the) stones at the well.'
(67) a. Ivan prygal IMP na stul.
    Ivan jumped on chair
    'Ivan was jumping / used to jump on a/the chair.'
b. Ivan zaprygal PRF na stul.
    Ivan ZA-jumped on chair
    'Ivan started jumping on the chair.'

The motion verbs in (66a)-(67a) acquire the inchoative reading of ZA- in (66b)-(67b) despite the presence of the lexically realized goal arguments. Thus, the data in (65)-(67) violates the ZA-selection principle in (66). An obvious way to account for the anomalous behavior of the motion verbs in (65)-(67) with the prefix ZA- is to suggest that their goal arguments do not satisfy the selectional restrictions of the spatial ZA-.

This, however, is not supposed to be a problem, since the BAWP operation should, in principle, be capable of adjusting a goal argument into goalZA'. Yet the infelicity of the verbs in (65)-(67) with the spatial ZA- suggests that such adjustment has failed. The question is why. What is so special about the indeterminate motion verbs (and *throw* and *jump*) that prevents them from occurring with the spatial meaning of ZA-?

To answer this question, we need to take a closer look on some semantic contrasts between the motion verbs in (65)-(67) and the determinate and semelfactive motion verbs in the context when the goal argument is present. Consider the following examples in (68)-(70).

(68) a. Ivan bežal IMP DET v magazin.
    Ivan ran to store
    'Ivan ran to the store.'
b. Ivan begal IMP INDET v magazin.
    Ivan ran in store
    'Ivan used to run / ran back-and-forth to the store.'

(69) a. Jeff bromil PRF kamen' / kamni v kolodez.
    Jeff threw stone stones in well
    'Ivan threw the stone / all the stones at the well.'
b. Jeff brosal IMP ?kamen' / kamni v kolodez.
   Jeff threw stone stones in well
   'Jeff was throwing a/the stone / (the) stones at the well.'

(70) a. Ivan prygnul PRF na stul.
   Ivan jumped on chair
   'Ivan jumped at the chair.'
b. Ivan prygal IMP na stul.
   Ivan jumped on chair
   'Ivan was jumping / used to jump on a/the chair.'

The crucial difference between examples a and b in (68)-(70) concerns the relation between the moving entity and the goal at the culmination of a motion event. Thus, the determinate bezat IMP (to run) in (68a) is compatible with the progressive reading of run – Ivan was on his way to the store or reached it when the running event came to an end. On the other hand, the indeterminate begat' in (68b) has a diametrically opposite annulled result reading (Smith 1991) – Ivan has reached the store location at least once and has left it at the culmination of the running event. Thus, (68b) is compatible with the habitual used to run reading or with ran back-and-forth interpretation, but not with the progressive reading of run. In other words, the store is not a final location of Ivan at the culmination of the running event in (68b).

The following examples in (71) provide further evidence for that claim.

(71) a. Ivan bežal IMP DET v magazin desjat' minut, i seičas on uže tam.
   Ivan ran in store ten minutes and now he already there
   'Ivan ran to the store for ten minutes, and now he is there.'
b. *Ivan begal IMP INDET v magazin desjat' minut i seičas on uže tam.
   Ivan ran in store ten minutes and now he already there

The example (71a) is compatible with the context in which Ivan remained in the store after running there in ten minutes, while (71b) is infelicitous in such context.

Examples (69)-(70) demonstrate a slightly different distinction between semelfactive and imperfective verbs with respect to the goal location. The
semelfactive perfective *brosit*\textsuperscript{PRF} (to throw) in (69a) means that there was a single throwing event in which the holistic theme *stone* (or a group of stones) was thrown at the well. As we have seen in chapter III, semelfactive *throw* does not entail that *stone* reached the well at the culmination of the throwing event, but it certainly implies such outcome. Likewise, the semelfactive *prygnut*\textsuperscript{PRF} (to jump) in (69a) entails that there was a jumping event in which the moving entity *Ivan* tried to reach the chair and may have succeeded in this task. On the other hand, the imperfective *brosat*\textsuperscript{IMP} in (70a) is inherently iterative, entailing that there were multiple events of throwing the stone at the well. For this reason, *brosat*\textsuperscript{IMP} is odd with single stone object, since it implies that the same stone was thrown again and again. So if the stone falls into the well, the iterativity of *brosat' kamen'* (to throw stone) requires that *Ivan* pulls it back (or it bounces back) before resuming throwing. Thus, the throwing event in (69b) involves a sequence of reoccurring events in which *Ivan* throws a stone to the well, gets it back from the well and then throws it again. In the same manner, the imperfective verb *prygar*\textsuperscript{IMP} (to jump) in (70b) denotes a jumping event, consisting of an iterative sequence of mini-events of *Ivan* jumping on the chair, then jumping down on the floor, then jumping back on the chair. Now, the throwing process may very well come to an end after *Ivan* pulled the stone from the well, but before he managed to throw it back into the well. In the similar way, *Ivan* decides to quit jumping after he landed on the floor, but before he jumped back on the chair. In short, unlike the indeterminate *begat*\textsuperscript{IMP} (to run), the iterative verbs *throw* and *jump* in (60)-(70) do not exclude the possibility of *stone being in the well* or *Ivan being on the chair* at the culmination of an event, but they do not entail that their holistic themes remained at the goal location after reaching it. To conclude, the goals of the indeterminate and iterative motion verbs in (68)-(70) do not bound the path of a moving object, since the motion process may continue (in the case indeterminate motion verbs, must continue) even when a moving object reaches its goal.

What all this has to do with the prefix ZA-? In chapter III I proposed that the spatial prefix ZA- is associated with the bounded scale of space measure. Then, the degree of incursion within the goal area must be associated with some closed interval on the scale of space, supplied by the BECOME AT event of positional change. Moreover, BECOME AT requires that the moving object ends up within the goal area at the culmination of the motion event. But this requirement clearly clashes with the semantics of the indeterminate and iterative motion verbs, described above, which
allow in-and-out movement of their moving objects with respect to their goals. So there is a mismatch between the semantics of the motion verbs in (68)-(70) and the selectional restrictions of the spatial ZA-. This mismatch apparently cannot be solved by the BAWP shift. Consequently, the prefix ZA- moves to the next participants of the thematic hierarchy.

Having dealt with the first anomaly in the pattern, concerning the motion verbs, let me now address the issue of the ZA- prefixed resultant accomplishments with non-quantized plural themes. As mentioned earlier, such verbs alternate between the resultant and inchoative meanings of ZA- in (72).

(72) a. Ivan čital IMP knigi.
    Ivan read books
    'Ivan read books.'

b. Ivan začital PRF knigi.
    Ivan ZA-read books
    'I. Ivan started reading books.' 2. Ivan read all the books to pieces.'

The data in (72) violates the ZA-selection rule in (62) by allowing both the resultant and the inchoative reading in (72b), despite having a theme argument books in its argument structure. At the first sight, such ambiguity in the interpretation of začitati PRF knigi clashes with the thematic hierarchy principle I have argued for in the course of this discussion. A closer analysis, however, reveals that the theme books in the resultant interpretation of začitati PRF has different lexical interpretation than in the inchoative reading. While the theme of the resultant začitati PRF refers to some definite books, known from context, the theme of the inchoative začitati PRF is interpreted as books in general, or, more precisely, as referring to books as kind (Carlson 1977, Chierchia 1998). Chierchia 1998 defines kinds as totalities of the individual instances. For instance, the kind BOOKS comprises all individual instantiations of books in its interpretation. In Russian, the kinds are normally referred to by the bare plural nouns, as in (73).
(73) a. Dinozavry vymerli\textsuperscript{PRF}.

\begin{quote}
Dinosaurs died out
\end{quote}

'Dinosaurs are extinct.'

b. *Dinozavr vymer\textsuperscript{PRF}.

Dinosaur died out

'Chierchia 1998 suggests that the bare plural nouns in Russian freely alternate between generic, definite and indefinite interpretations, depending on the context. So, let's assume that the BP noun books in the inchoative začítat\textsuperscript{PRF} knigi (to start reading books) refers to the kind BOOKS in the context of Ivan developing a habit of reading books (without specifying particular books that he read). The question is why the interpretation of books as kind blocks the application of the resultant ZA-, forcing the ZA-selection rule to proceed to the temporal participant of the TH. The obvious answer is that the kind theme is incompatible with the resultant ZA-. Chierchia 1998 mentions that the kind does not have to refer to the actual real-world instances, since dodo in the dodo is extinct is acceptable under the kind interpretation even if there are no dodos in the actual world. The resultant prefix ZA-, on the other hand, needs existing real-world objects which it can measure in terms of their affectedness. Since kind reading of BOOK not only makes the individual books inaccessible, but does not even guarantee their real-world existence, the resultant ZA- fails to apply and the verb with kind argument is coerced into the inchoative reading. It should be mentioned, however, that the inchoative reinterpretation of normally resultant ZA-prefixixed accomplishments with kind themes is generally restricted in Russian and examples, such as (72), are not productive (Zaliznjak 1995, Šeljakin 1969). Perhaps the reason for this is a general incompatibility of the perfective aspect with habitual situations. Filip 1999 argues that perfective verbs in Slavic place a definiteness restriction on the interpretation of their direct objects even when such objects are bare plural or mass nouns. Thus, Ivan popil\textsuperscript{PRF} čaj (Ivan drank tea for a while) is interpreted as drinking a specific contextually determined amount of tea. In this respect, the kind reading of books in the inchoative interpretation of začítat\textsuperscript{PRF} knigi (to start reading books) and the habitual interpretation of such sentence appear to be anomalous not only with respect of the ZA-selection rule, but w.r.t. to the semantics of perfectivity as well.
A third type of anomaly in the pattern arises with the verbs that reject \(ZA\)-, reviewed in 6.2.5. These verbs are mostly intransitive activities and states, which are expected to occur with the inchoative meaning of \(ZA\)-, mapped against the obligatory temporal constituent by the rule in (59). However, as we can see in (74)-(76), the inchoative reading of \(ZA\)- is disallowed, in violation of the \(ZA\)-selection principle.

(74) a. Novyj kompjuter stoil \(^{\text{IMP}}\) 5,000 shekelej.
    New computer cost 5,000 shekels
    'A new computer cost 5,000 shekels.'
    b. *Novyj kompjuter zastoil \(^{\text{PRF}}\) 5,000 shekelej.
    New computer ZA-cost 5,000 shekels

(75) a. Ivan znal \(^{\text{IMP}}\) frantzuskij.
    Ivan knew French
    'Ivan knew French.'
    b. *Ivan zaznal \(^{\text{PRF}}\) frantzuskij.
    Ivan ZA-knew French

(76) a. Tzar' Pjoter I pravil \(^{\text{IMP}}\) Rossijej.
    Czar Peter I ruled Russia
    'Czar Peter I ruled Russia.'
    b. *Tzar Pjoter I zapravil \(^{\text{PRF}}\) Rossijej.
    Czar Peter I ZA-ruled Russia

As mentioned in 6.2.5, Padučeva 2004 divides the verbs incompatible with the inchoative \(ZA\)-, such as the ones in (74)-(76), into \atemporal properties and relations, such as \(stoit\)\(^{\text{IMP}}\) (to cost) in (74), \steady situations, such as \(znal\)\(^{\text{IMP}}\) (to know) in (75), and \occupations and behaviors, such as \(pravit\)\(^{\text{IMP}}\) (to rule) in (76). Padučeva 2004 argues that atemporal properties and relations do not have a temporal constituent in their denotation, while steady situations and occupations/behaviors hold for extra-long temporal intervals. While the concept of \atemporal properties can explain the absence of the inchoative reading (if there is no time participant, then the inchoative \(ZA\)- cannot apply), it is less clear why the inchoative \(ZA\)- cannot mark the onset of the state of \knowledge of French, or the beginning of the \ruled Russia occupational
activity. Moreover, as I proposed in the present chapter, all verbs have obligatory temporal constituents in their denotations. Thus, an alternative solution to the lack of the inchoative reading of ZA- in (74)-(76) needs to be sought. Again, such solution comes from the field of generics. Beginning with Carlson 1977, the studies of generics make a traditional distinction between stage-level and individual-level predicates. The individual-level predicates in the verbal domain express permanent or stable situations, such as know, love (Chierchia 1995: 177). Thus, it seems that Padučeva's 2004 categories of atemporal properties, steady states and life-time occupational and behavioral activities fall under the individual-level class of verbs. They appear to satisfy some of the tests for individual-level predicates, proposed in Chierchia 1995 for English data: stable stativity through time (?? Ivan znal IMP frantzuski po subbotam – Ivan knew French on Saturdays); oddness with locative modifiers (??David vesil IMP 100kg v svoj kvartire – David weighted 100kg in his apartment); a default generic reading of bare plural nouns with individual-level predicates (Sobaki nenavidjat IMP košek – Dogs hate cats). So, the question is why the fact that the verbs in (74)-(76) are individual-level predicates makes them infelicitious with the inchoative meaning of ZA-. Chierchia 1995 proposes that individual-level predicates are inherently generic, meaning that they must fall under the scope of generic operator. Without going into details of Chierchia 1995 account of genericity, the semantics of the generic operator imposes a specific set of requirements on the interpretation of an event denoted by the given predicate; namely, that such event holds in all worlds, maximally similar to ours, where the conditions for its realization are met. For instance, Ivan knows French is true for all worlds similar to the real world, where the individuals Ivan and French language exist. Under such approach, the generic operator is a special subtype of modal operator, such as can and must.

Since the generic operator imposes its restrictions on a temporal duration of the event, such as an effect of stability over long period of time, a generic predicate would be infelicitous with another temporal modifier that clashes with these restrictions (Chierchia 1995: 207). Thus, a temporal interval at which a generic verb holds cannot be restricted to a short temporally closed onset stage, singled out by the inchoative prefix ZA-. In such way, the analysis of the data in (73)-(76) and similar
verbs as inherently generic *individual-level* predicates accounts for their incompatibility with the inchoative ZA-\(^{47}\).

A clash between the inchoative ZA- and another temporal modifier is also manifested with the semelfactive perfective motion verbs, derived from the iterative motion verbs, which I discussed earlier. In contrast to their iterative counterparts, such semelfactive forms occur with the spatial meaning of ZA-, but not with the inchoative one.

(77) a. Ivan prygnul \(^{PRF}\) na stul.
   Ivan jumped on chair
   'Ivan jumped at/on the chair.'

b. Ivan zaprygnul \(^{PRF}\) na stul.
   Ivan ZA-jumped on chair
   'Ivan jumped on the chair.'

(78) a. Ivan brosil \(^{PRF}\) kamen' v kolodez.
   Ivan threw stone in well
   'Ivan threw stone at/to the well.'

b. Ivan zabrosil \(^{PRF}\) kamen' v kolodez.
   Ivan ZA-throw stone in well
   'Ivan threw the stone into the well.'

The semelfactive verbs in (77a)-(78a) denote single minimal atomic events of *throwing a stone at the well* and *jumping on the chair*, respectively. I assume that the anti-bounding entity entailment on the goal argument was removed in the process of deriving semelfactive verbs from their iterative counterparts, making their goal arguments accessible for the spatial prefix ZA-. So the question is why the verbs in (77)-(78) are barred from occurring with the inchoative ZA-. One possibility is to assume, by analogy with the determinate motion verbs, that the semelfactive motion verbs have obligatory goal arguments, which makes them acceptable only with the

\(^{47}\) The contrast between atemporal properties, on the one hand, and stable states and occupational activities, on the other, with respect to the temporal modification, as noted in Paducheva 2004, indicates that there might be different types of generic readings, some of which are 'stronger' than others. In fact, some recent studies indicate that there are various types of generic predicates in English (see, for instance, the analysis of the BP and IS genericity in Greenberg 2003).
spatial meaning of \(ZA\). There is, however, no sufficient ground in favor of such assumption. Contrary to the determinate motion verbs, the semelfactives in (77)-(78) do not entail a progressive motion towards some goal location and are acceptable with the *running on the spot* scenario, as manifested in (79).

(79) a. Ivan przygnul\(^{\text{PRF}}\) na meste.
    Ivan jumped on spot
    'Ivan jumped on the spot.'

b. Ivan brosii\(^{\text{PRF}}\) lopatu.
    Ivan threw spade
    'Ivan dropped the spade.'

In (79a), Ivan jumped once on the same spot, while (79b) is compatible with the interpretation of Ivan dropping the spade from his hands, which excludes the motion of spade towards some goal. Thus, there must be another reason for the absence of inchoative interpretation of (77b)-(78b). Note that the semelfactive verbs are the only perfective verbs that occur with the prefix \(ZA\). I assume that a perfective event has a well-defined temporary boundary that cannot be modified further. Perfective events are complete and cannot occur with temporal modifiers, which are incompatible with their completeness reading. Naturally, then, an event cannot be perceived as inchoative and complete at the same time. Therefore, the inchoative reading of semelfactive perfective verbs is disallowed for the same reason than in generic verbs: it clashes with another temporal modification of the time variable, imposed by a preceding application of some temporal modifier, be it a generic or perfective operator.

To sum up, the anomalies in the pattern of alternations of \(ZA\), covered in this section, arise as a result of the clash between the selectional restrictions of the prefix \(ZA\) and those, imposed by an input verb or another operator, on one of the relevant members of the TH. In the cases, discussed in this section, such clash cannot be resolved by the BAWP operation, since its origin lies in the core semantic properties of a given input verb or semantic operation. For instance, no metonymic shift can change the selectional restrictions that indeterminate and iterative motion verbs assign to their goal arguments, since such restrictions originate from the core lexical semantics of such verbs. Likewise, the BAWP would fail to shift an inherently
generic individual-level verb into a non-generic interpretation in normative real-world circumstances. I have showed, however, that the anomalies in the pattern are not isolated exceptions, but rather are semantically motivated and provide ground for making further predictions about the distribution of ZA- in Russian. Thus, the semantic network of meanings of ZA- that I present in the following chapter needs to systematically account for all the 'anomalous' cases, analyzed above. Before proceeding to setting up such a network, I'd like to set the record straight on another critical issue that I have evaded so far– the invariant meaning of the prefix ZA-.

6.5 The Invariant Meaning of ZA-

The ZA-selection rule, proposed in 6.3, allows calculating the meaning of an input verb with the prefix ZA- in a systematic way with respect to the thematic hierarchy of participants. The rule, as it is formulated in (59), is essentially a combination of a lexical mapping rule with a word-formation rule (Aronoff 1976). It maps the three prefixes ZA- – spatial, resultant and inchoative – to the existing participants of the TH. In some cases, the BAWP word-formation operation is engaged, deriving a new lexical ZA-prefixixed verb from an input verb by transforming its lexical meaning and adjusting the selectional restrictions, imposed by that verb on the relevant argument (theme or goal), or adding a new argument altogether. Thus, the spatial and the resultant prefixes ZA- act not only as aspectral shift operators, but also as word-formational ones, capable of coining verbs with new lexical meanings out of their inputs. The inchoative ZA-, on the other hand, does not seem to have word-formation effects on the semantics of its input verbs. Yet in the previous chapter V, I argued that the inchoative ZA- is a lexical prefix of the same type as the spatial and the resultant ZA-. Thus, at this stage we have three lexical verbal prefixes ZA-, which are arbitrarily related via the ZA-selection rule. Such rule accounts for the alternations of meanings of ZA- with verbs that have obligatory goals and/or themes in their lexical argument structures (and for those that have none). The BAWP operation, thus, complements the ZA-selection rule by proposing a way to account for the so-called idiosyncratic meanings of ZA-, though the mechanism of metonymic shifts and associations of the BAWP operation is not entirely semantically coherent (Aronoff 1976: 38) at this point. The question is whether the three prefixes ZA- can be interlinked in a different way than just an arbitrary relation that arises from the ad hoc
ZA-selection rule in (59). In other words, is there an underlying invariant meaning of ZA- that unifies the three meanings, observed in the previous chapters?

The proponents of the invariant meaning of ZA- hold the view that the specific meanings of ZA- can be reduced to a single semantic denominator. In chapter II, I outlined Paillard's (1995) proposal for such invariant meaning. The intuition, expressed in Paillard 1995 analysis, is that the prefix ZA- denotes a change that goes beyond some limit. That intuition is shared by Janda 1986 that describes the core meaning of ZA- as a transfer of trajector from the landmark into extra-domain. In more formal terms, it seems that what the three prefixes ZA- share in common is some measure scale which determines the extent of affectedness of the given participant – location, existing material object, and temporal trace of an event – in the course of an event of change. In chapter I, I presented a formal theory of prefixation that treats verbal prefixes in Slavic as extensive measure functions (Filip 2000, Filip and Rothstein 2006). A recent study by Katerina Součková builds upon Filip 2000 theory, proposing a unifying account for the prefix PO- in Czech (Součková 2004). Součková 2004 argues that the prefix PO- imposes a single measure criteria, which is roughly interpreted as *a little*, upon temporal traces (example 80a), paths (80b), changes of state (80c) and low intensity verbs (80d).

(80) a. Jakob o tom popřemýšlel\textsuperscript{PRF}. [adopted from Součková 2004]
Jakob about it \textsuperscript{PO-thought}
'Jakob thought about it for a little while.'

b. Lucie povytáhla\textsuperscript{PRF} dopis z obálky.
Lucie PO-from-pulled letter from envelope
'Lucie pulled out the letter from the envelope a bit.'

c. Tulipány povadly\textsuperscript{PRF}.
Tulips PO-withered
'The tulips withered a bit.'

d. Na stole poblikívála\textsuperscript{IMP} lampa.
On table PO-flickered lamp
'There was a lamp on the table, flickering intermittently.'
Součkova 2004 defines the delimitative prefix $PO$- in Czech as an extensive measure function, which is assigned the following semantic representation in (81).

\[(81) \quad [\[PO\]] = \lambda P \lambda e \ [P(e) \land m(e) = c_{\text{RELATIVELY SMALL}}]\]

whereas $P$ is a predicate, $e$ is an event variable, $m$ is a measure function on events and $c$ stands for a contextually determined value.

The semantic analysis of the prefix $PO$- in Součkova 2004 is based on the assumption that the measure prefixes apply to verbs that contain ordered scalar structures in their denotations. The prefix $PO$-, thus, applies to a measure scale, associated with the given verb, and measures a contextually appropriate interval on such scale. In such case, the meaning of a $PO$-prefixed verb depends on the type of a measure scale, associated with that verb. Součkova 2004 assumes that determinate motion verbs in Czech have ordered scales of progress along the path in their denotations and, consequently, acquire the meaning of move for a short distance with $PO$-. The change-of-state verbs are degree achievements (cf. Abusch 1986, Hay et al 1999), which have inherent measure scales of change with respect to some relevant property of their arguments. The application of $PO$- to such verbs results in a meaning that a small degree of change took place. Součkova 2004 assumes that all verbs are associated with temporal scales (I make the same assumption in this work), so that the prefix $PO$- can always measure the temporal duration of an event when other scales are unavailable.

In what follows, I propose a unifying analysis for the prefix $ZA$- in spirit of the Součkova 2004 proposal for the prefix $PO$- in Czech. My analysis of the prefix $ZA$-, however, differs from Součkova 2004 approach with respect to the concept of measure scales. The prefix $ZA$-, as I showed in the previous chapters, does not require a verb to supply an ordered measure scale in its denotation. $ZA$- can apply to a wide range of activity and state verbs in Russian, most of which do not have a pre-ordered scalar structure in their denotations.\(^{48}\) Rather, it is the prefix itself that imposes an

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\(^{48}\) As we have seen in chapter IV, one case of scalar activities in Russian are change-of-state verbs that give rise to the resultant accumulative reading of $ZA$-. It seems from Součkova 2004 analysis that Czech has a parallel class of change-of-state verbs as well. I tend to agree with Součkova 2004 that the determinate motion verbs may be associated with an ordered spatial scale. The distribution of the spatial and resultant prefixes $ZA$- in Russian, however, is not by any means limited to these two classes of verbs.
ordered structure on an event by introducing a unique BECOME event of change. I do not deny the fact that the prefix ZA- determines an extent of change with respect to some relevant measure scale. Such scale, however, is embedded in the semantics of the BECOME event, introduced by ZA-. Thus, I propose a more complex analysis of the prefix ZA-, treating it as an aspectual shift operator rather than a direct measure function on scales. In chapter III, I introduced the BECOME AT event of change in location, which is brought in by the spatial prefix ZA-. In chapter IV, I acquainted the reader with the BECOME AFF event that forms the resultant ZA-prefixed verbs, and discussed some of its semantic properties, such as a monotonic nature of change and selectional restrictions on its theme argument (i.e., gradable real-world existing material entity). In chapter V, I devised the BECOME INI event of a temporal change, which described an establishment of the onset phase of activity and state events. Now, let's assume that there is, indeed, an underlying invariant meaning for the prefix ZA- in Russian. In such case, BECOME AT, BECOME AFF and BECOME INI events of change, introduced by the spatial, resultant and inchoative prefixes ZA-, respectively, must be instances of a more abstract underlying event of change. Then, the source of the beyond the limit interpretation, attributed to the invariant meaning of ZA-, must lie in the semantic properties of that underlying BECOME event. And what are these properties exactly? To answer this question, one need to examine the BECOME AT, BECOME AFF and BECOME INI events, check what they have in common, and, on the basis of these findings, reconstruct the underlying incremental event of change, which constitutes what the traditional analyses refer to as the invariant meaning of ZA-.

Let's start, then, with the analysis of the spatial BECOME AT. In chapter III, I showed that the BECOME AT takes a location, denoted by the goal argument of a corresponding motion activity, as its incremental argument and denotes an event of continuous incursion into the goal area. The uniqueness of the spatial BECOME AT event of change arises due to two factors: a) the nature of change, denoted by it; b) the selectional restrictions it imposes on its goal argument. The second factor, in fact, stems from the first one, since the properties of the spatial change, denoted by the BECOME AT event, restrict the type of objects that may serve as its goal.

As proposed in chapter III, BECOME AT denotes an event of gradual incursion into some goal area. A spatial change, imposed by BECOME AT, is monotonically structured, meaning that the longer the corresponding motion process lasts, the more
and more parts of the goal area become accessible in the course of a given event. One implication of such requirement is that it restricts a spatial ZA-prefixed verb to denote progressive motion in one direction along the path. In chapter III, I assumed that BECOME AT is associated with a 'built-in' closed scale, which measures an extent of incursion into the goal area. The initial point on such scale corresponds to a zero extent of incursion, which is pragmatically interpreted as a source location of the moving entity just on an outer boundary of the goal area. Such assertion is corroborated by the behavior of the spatial ZA-prefixed verbs with source arguments, observed in chapter III – they take only those locations, immediately adjacent to the goal locations, as their sources. The final point on the scale determines the maximal degree of incursion, which I presume to be the back boundary of the goal location. Moreover, BECOME AT event requires that the extent of incursion into the goal area is sufficiently big at the culmination of the locative accomplishment event. Hence, the spatial measure scale includes a certain interval of validation, which ranges from some contextually defined default value to the final point on the scale. In other words, a moving object needs to go deep enough into the goal location for the truth conditions of a ZA-prefixed verb to be satisfied. The spatial measure scale of BECOME AT is graphically represented in (82), repeated from chapter III.

\[(82)\text{ spatial event of change BECOME AT:} \]
\[\lambda x \lambda e [\text{BECOME AT}(e) \land \text{GOAL}(e) = x]\]

\[\text{Spatial Measure Scale} \quad \text{the interval of validation}\]

\[\text{zero degree of incursion} = \text{default incursion} \quad \text{maximal incursion} = \text{back inner boundary of the goal location}\]

\[\text{adjacent outside location} \quad \text{monotonic positional change}\]

Naturally, the range of the interval of validation is dependent on the context and the properties of the goal location. The spatial ZA-prefixed zajdī PRF (to walk into) in zajdī PRF v komnatu (to walk into the room) has a different interval of validation than zajdī PRF v les (to walk into the forest). While the former event is presumably counted as true as soon as an agent of the walking event makes a step or two into the room, the latter is validated after, say, passing few dozen meters into the forest. With small goal
areas, such as *door in zajdiPrF v dver’ (to come into the door), the interval of
validation is narrowed down to an extremely short spatial interval.

The properties of the spatial event of change BECOME AT, as illustrated in (82),
determine the selectional restrictions, imposed on the goal argument. First, a goal
location must allow an incursion into its inner space. Thus, we would expect the verbs
of contact with surface to be excluded from occurring with the spatial ZA- due to the
fact that they involve only an external surface (i.e., an outer boundary) of their goal
locations. Indeed, such prediction is borne out in the case of stavitIMP (to put upon).
This verb is compatible with the goal argument, but its ZA-prefixed form does not
acquire the spatial meaning of ZA- (but is acceptable with the resultant cover one).

(83) a. Ivan stavitIMP knigu na polku.
   Ivan put book on shelf
   'Ivan put a/the book on the shelf.'
   b. *Ivan zastavilPRF knigu na polku.
   Ivan ZA-put book on shelf
   c. Ivan zastavilPRF polku knigami.
   Ivan ZA-put shelf with books
   'Ivan filled the shelf up by putting books.'

The incompatibility of (83b) with the spatial ZA- can be explained by the fact that
stavitIMP (to put upon) affects only the external surface of the shelf and is
incompatible with the meaning of incursion into the inner space of the shelf
(cf. zabirPRF gvozd’ v polku – to hammer a nail into the shelf). Second, a goal location
is matched against the closed interval on the spatial measure scale in (82). The
practical implication of such matching is that the motion event gets bounded by the
goal area and must culminate within it. If a moving entity comes in-and-out of the
goal area in the course of the motion event, it violates the monotonic positional
manner of change, set by the BECOME AT event. Thus, it is not surprising that the
spatial meaning of ZA- does not arise with the indeterminate and iterative motion
verbs that denote multi-directional in-and-out movements. In such a way, a goal
argument of a spatial ZA-prefixed verb, or GOALZA-, must satisfy two crucial lexical
entailments: accessible inner space and having a definite end-point. The second
entailment might explain why #raketa zaletelaPrF v kosmos (the rocket flew into
space) is odd, while "muxa zaletela"\textsuperscript{PRF} \textit{v okno} (a fly flew into the window) is perfectly felicitous. After all, space, unlike windows, does not have a final boundary.

Now, let's reexamine the BECOME AFF event of material change, introduced by the resultant prefix \textit{ZA}-. In chapter IV, I argued that the BECOME AFF denotes a gradual change in the affected theme argument with respect to some gradable material property. A theme argument must take a real world object, the material existence of which is assured throughout the course of an event of change. This restriction excludes verbs of creation and consumption from occurring with \textit{ZA}-. When such verbs do occur with the resultant \textit{ZA}-, they undergo a shift in their lexical meaning via the BAWP operation. For instance, "stroiti"\textsuperscript{IMP} \textit{dom} (to build a house) is reinterpreted as the resultant cover verb in "zastroiti"\textsuperscript{PRF} \textit{pustyr'} (to build up an empty area). The consumption verb "est'\textsuperscript{IMP} (to eat) is also shifted into some sort of a resultant cover meaning "zaest'\textsuperscript{PRF} (to suppress the taste).

In chapter IV, I argued that the BECOME AFF event of change is also associated with a 'built-in' ordered closed measure scale of material change. Such change may include a change with respect to some general property of the theme argument (density, opacity, rustiness), a degree of cover, damage or possession. A relevant property of change is recovered from the lexical meaning of an input verb. I distinguished between four main submeanings of the resultant meanings of \textit{ZA}-: accumulative (with change-of-state scalar activities), cover (with \textit{butter} and \textit{fill} verbs), damage (with \textit{kill} verbs) and acquisition (with \textit{possession} verbs). With these verbs, the resultant \textit{ZA}- measures the extent of a change over a theme argument with respect to its incremental measure scale. An initial point on the scale, then, conventionally corresponds to a zero degree of affectedness of a theme argument with respect to the relevant property. A final point on the scale denotes a maximal degree of change for the given property. A measure scale includes an interval of validation for the given event of change, which ranges from the contextually or conventionally defined default value for the relevant type of change to the maximal value on the scale. The situation is graphically illustrated in (84).
(84) resultant event of change BECOME AFF:
\[ \lambda x \lambda e \left[ \text{BECOME AFF}(e) \land \text{THEME}(e) = x \right] \]

The nature of change of BECOME AFF has a number of applications for the selectional restrictions on its theme argument. First, as mentioned earlier, it has to be an existing real-world material entity. True, that in some cases the theme is rather abstract, as reputation in zapjatnat',\textsuperscript{PRF} repjutaziju (to shame oneself, lit. to stain one's reputation). In this case, however, reputation undergoes a metaphoric drift into a surface-type object of surfaces, which is normally taken as a theme argument by the cover verb zapjatnat',\textsuperscript{PRF} (to stain over), as in zapjatnat' stol černilami (to stain the table with ink). An additional restriction on a theme of a resultant ZA-prefixed verb, THEME\textsuperscript{ZA*}, is its ability to undergo a gradual change with respect to the relevant property. Thus, if a certain theme object corresponds to the maximal value on the relevant material measure scale, it will not occur with the given ZA-prefixed verb. For instance, ice is incompatible with zamerznut',\textsuperscript{PRF} (to freeze), since it \textit{a priori} has the maximal value on the scale of frost and cannot undergo any further change (cf. *led zamerz\textsuperscript{PRF} – the ice froze vs. voda zamerzla \textsuperscript{PRF} – the water froze). Likewise, an object of a resultant ZA-prefixed verb needs to reach some maximal value on the relevant closed scale, meaning that the change cannot go on indefinitely. For example, some emotional states have a component of intensity in their lexical meaning, which in theory makes them acceptable as input for the resultant ZA-. However, those emotional states that entail a more or less stable level of intensity, such as love, are generally excluded from taking the resultant prefix ZA-. Zaliznjak 1995 points out that love can acquire a resultant meaning of ZA- only in a special context, meaning to spoil with excessive love, as in roditeli zaljubili \textsuperscript{PRF} rebenka svoimi laskami (the parents spoiled the child with their excessive tenderness). Generally, nonetheless, love does not impose a definite change on its object. The selectional restrictions of the resultant
BECOME AFF event of change on its theme can, thus, be summarized as the following lexical entailments: existing real world object, material entity, gradable, undergoes restricted change up to some final limit.

The last event of change, associated with the inchoative prefix ZA-, is the BECOME INI event of temporal change. This event differs from the other two by affecting a temporal existence of an event directly, rather than its goal or theme. As I explained in chapter V, BECOME INI denotes a monotonic change on the scale of time from non-existence of an event to the first moment at which it definitely holds. The BECOME INI event has a 'built-in' closed time scale in its denotation. A first point on the scale corresponds to zero duration of an event – its temporal non-existence (nebytie in Šeljakin's (1969) words). A final point on the scale is an absolute time of validation for the given event, the first moment at which it can be definitely established that the given event took place in an actual world. The BECOME INI event implies that a given event continues beyond this point, but does not entail it. Thus, both (85a) and (85b) are compatible with the verb zarabotati^{PRF} (to start working) in (85).

(85) a. Computer zarabotal^{PRF}, no tut Že otklučišla^{PRF}.

   Computer ZA-worked but right away shut down
   'Computer started working, but shut down right away.'

b. Computer zarabotal^{PRF}, i do six por rabotaet^{IMP}.

   Computer ZA-worked and till now is working
   'Computer started working and is still working.'

The time scale for the BECOME INI is provided below.

(86) inchoative event of change BECOME INI:

\[ \lambda e \left[ \text{BECOME INI}(e) \land \text{Arg}(e) = \tau(e) \right] \]
As we have seen in 6.4, the BECOME INI event also applies some selectional restrictions on its temporal component. The temporal trace of an event must be *non-bounded* by other time modifiers, such as generic or perfective operators.

Having looked into the semantic properties of BECOME AT, AFF and INI events with respect to their nature of change and selectional restrictions, let's check what these events of change have in common.

(87) **Common semantic properties of spatial, resultant and inchoative events of change:**
- they have built-in closed measure scales in their denotation.
- the initial point on the scale is a zero degree of change, the final point is a maximal degree of change.
- the interval of validation of the change of a measured entity is restricted to a top subinterval on the scale, between a default and a maximal value on the scale.
- a default value for validation of the relevant change is conventionally or contextually supplied.
- a nature of change is monotonically increasing. Consequently, a measured entity is monotonically affected.

In such way, the nature of change in the BECOME AT, BECOME AFF and BECOME INI events is remarkably similar. The only real difference between these events concerns a choice of the measure scale. In BECOME AT, the scale measures a change in location; in BECOME AFF it measures a material change of an object with respect to some property and in BECOME INI the scale measures a change in a temporal trace of an event, from the point of its non-existence to its time of validation. So, if these scales could be represented as instantiations of a single measure scale, it would be possible to formulate a single invariant meaning of the prefix *ZA-*.

However, a spatial scale belongs to the SPACE dimension, a material change scale belongs to the MATERIAL PROPERTIES dimension and a temporal scale belongs to the dimension of TIME. While SPACE and MATERIAL PROPERTIES can presumably be represented as subdimensions of MATTER, it is not the case for the TIME dimension. So we need to look deeper for the unifying property of the three dimensions above. I assume that the measure scale, associated with the event of
change, imposed by the prefix ZA-, is underspecified with respect to its dimension of measure and degrees on the scale. Thus, not only specific degrees on the measure scale are recovered from the lexical meaning of an input verb, the properties of its theme and the context, but also the measure dimension itself. If a measured entity is a location, denoted by the goal argument, than the measure scale is associated with the dimension of space. If a measured entity is a material object (denoted by a theme argument), than the measure scale is associated with some relevant material dimension, based on the properties of an object and a lexical meaning of a given input verb.

Finally, when the measured entity is τ(e), the measure scale becomes the temporal one. To put it differently, the prefix ZA- supplies a general universal measure scale that can be fit to measuring spatial, material and temporal changes, depending on the type of a measured entity (location, object, τ(e)), semantics of a given input verb and contextual support. Consequently, spatial, resultant and inchoative events of change can be viewed as specific instantiations of an abstract event of change, call it BECOME ESTABLISHED, or, in short, BECOME ESTAB. BECOME ESTAB imposes a monotonic change upon some entity – location, object, temporal trace of an event – with respect to its 'built-in' universal closed measure scale, so that the degree of change of that object at the culmination of a given event corresponds to some predetermined interval of validation at the top part of a scale. The interval of validation and the specific dimension of a measure scale are retrieved from the lexical semantics of an input verb, the properties of a measured entity, the context and our general world knowledge. A maximal degree of change (as well as the default one) is also contextually or conventionally determined (e.g., in damage verbs, death for animate objects; in cover verbs, filling up of a container). The initial point on the scale is, however, a fixed one, corresponding to zero degree of affectedness for the measured entity (an adjacent source location for a goal area, zero thickness for a jam, temporal non-existence for an event). The measure scale of the BECOME ESTAB event of change is represented in (88) below.
(88) A Universal Built-In Scale of the BECOME ESTAB Event of Change

\[ \lambda R \forall e \left[ \text{BECOME ESTAB} \left( e \right) \land \text{Arg}(e) = R(e) \right], \text{where } R(e) \text{ is } \theta(e_1) \text{ or } \tau(e_1). \]

The BECOME ESTAB event in (88) is basically a definition of the invariant meaning of ZA-. The beyond the limit intuition actually reflects that: a) it imposes an ordered structure of incremental change on unordered events, deriving accomplishment events out of activities and states; b) a measured entity needs to be sufficiently affected in the course of the change.

The obvious question now is how the BECOME AT, AFF and INI events are derived out of the BECOME ESTAB event in (88). The answer to this question is provided by the ZA-selection principle in (59), which only needs to be slightly modified to account for the invariant meaning of ZA-.

(89) Final ZA-selection rule:

**Thematic Hierarchy:** \text{GOAL}^{ZA} > \text{THEME}^{ZA} > \tau(e)

- the BECOME ESTAB event of change, introduced by ZA-, takes a highest participant, provided by an input verb, with respect to the thematic hierarchy of participants above.
- if such participant does not satisfy selectional restrictions of BECOME ESTAB, it can by substituted by the right one by modifying the lexical meaning and, by doing so, altering the selectional restrictions of an input verb via the BAWP operation. If such adjustment fails (as with goals of indeterminate motion verbs), BECOME ESTAB selects the next participant in the hierarchy.
- the BAWP operation can enrich the argument structure of an input verb, adding originally unavailable goal or theme arguments. In such case, an input
verb acquires a new lexical meaning with ZA-. The success of the BAWP operation depends on its ability to metonymically shift an input verb by association with some of the prototypes in (59). Moreover, in some extreme cases, the BAWP operation can derive new empty-based ZA-prefix verbs directly from nominal elements, granted there is an adequate contextual support for such derivation.

The specific meaning of ZA-, then, depends on which participant of the thematic hierarchy is selected as a measured object by the BECOME ESTAB event of change with respect to the transfer rule in (89). If it is a goal location, an input verb acquires a spatial meaning of ZA-. If it is a theme, a ZA-prefix output gets a resultant meaning of ZA- (a submeaning of which is determined by the lexical meaning of an input verb, context and real-world knowledge). Finally, if a selected participant is a temporal trace of an event, an input verb is shifted into a ZA-prefix inchoative accomplishment.

To sum up, in this chapter I discussed the alternations of the meanings of ZA- in Russian. The analysis of such alternations resulted in formulating the invariant BECOME ESTAB event of change, introduced by the prefix ZA- in (88), and the transfer rules from that invariant meaning to the three core meanings of ZA- (spatial, resultant and inchoative) in (89). I proposed the BAWP mechanism to account for the 'idiosyncratic' meanings of ZA-, such as zastroit’PRF pustyr’ (to build up the empty area) and zagovorit’PRF menja (to confuse me by talking). I also provided an explanation for the anomalies in the pattern of alternations of meanings of ZA- in section 6.4. Thus, we now possess all the tools for constructing a semantic network of prefixal meanings, proposed in Krongauz 1998. In the next chapter, I shall construct such network for the prefix ZA-.
Chapter VII.
The Semantic Network of Meanings of ZA-.

7.1 Introduction

Chapters III, IV and V presented a formal account for the three core meanings of the prefix ZA-. Chapter VI proposed a way to narrow these meanings down to an invariant meaning of ZA- and briefly outlined the general transfer mechanism from the invariant meaning to its three specific instantiations. In the current chapter, I shall construct the semantic network of meanings of ZA-, which provides a detailed step-by-step account of the implementation of the semantic mechanisms, discussed in chapter VI, in the lexicon. Before doing so, however, I have to keep the promise I made in chapter I, which is to clarify an important theoretical issue – a correlation between prefixation and perfectivization in Russian.

In chapter I, I argued, following Filip 1999, 2003, that the verbal prefixes in Russian are not grammatical perfectivizers. Yet all prefixed verbs in Russian are perfective49. What, then, is a source of perfectivity of the prefixed verbs? Filip and Rothstein 2006 addresses this question by assuming that perfectivization of the prefixed verbs in Russian is imposed by a morphologically null perfectivizing operator, analogous to the maximalization operator MAX_E in English. MAX_E applies to a set of events Σ, partially ordered by some ordering criterion with respect to some measure scale, such that MAX_E (Σ) ⊆ Σ, and yields sets of maximal, or telic, events with respect to that ordering criterion. In such way, perfectivity in Russian is closely related to the concept of telicity in English. Thus, let me first clarify what I mean by the terms telicity and telic events. A formal definition of a telic event, as provided in Krifka 1998, is illustrated in (1).

\[ \forall e \forall e' [X(e) \land X(e') \land e' \leq e \rightarrow INI_E(e', e) \land FIN_E(e', e)] \]

49 Granted that they did not undergo a secondary imperfectivization. Some accounts claim that a small group of prefixed indeterminate motion verbs, such as vybegat' IMP (to be running out), are imperfective, despite adding the prefix VY- (Kagan 2007). Isačenko 1960, however, argues that verbs like vybegat' IMP (to be running out) are secondary imperfective forms of the prefixed determinate motion verbs in Russian, such as vybezat' PRF (to run out). While I find Isačenko's explanation convincing, I leave open the possibility that the vybegat' IMP type verbs are a single exceptional case of prefixed, yet non-perfective verbs in Russian.
The formula in (1) defines an event as telic if it has well-defined initial and final points. For instance, an initial point of a building event, having the house as its theme, starts at the erection of the scaffolds, while its final point occurs when the house comes into existence as a real-world object. An important property of telic events following from (1) concerns a relation between a telic event and its subevents – a subevent of a telic event cannot be defined as a telic event of the same kind. A subpart of the telic event of building the house cannot be itself considered as the telic event of building the house. In English, one of the diagnostics of telicity is the temporal test with the in X time modifier. Telic VPs occur with in X time, as in (2a), while atelic ones occur with for X, as in (2b).

(2) a. John built the house in a year / *for a year.
   b. John pushed the cart for an hour / *in an hour.

In the case that the Filip and Rothstein 2006 assumption that the perfectivization operator yields telic events is correct, perfective verbs in Russian are ought to occur with the in X time modifier, in contrast with the atelic imperfective verbs, which must take for X time. Prima facie, such prediction is borne out, as shown in (3).

(3) a. John postroil\textsuperscript{PRF} dom za god / *god.
   \begin{quote}
   John built house in year year
   'John built the house in a year.'
   \end{quote}
   b. John tolkal\textsuperscript{IMP} telegu čas / *za čas.
   \begin{quote}
   John pushed cart hour in hour
   'John pushed a/the cart in an hour.'
   \end{quote}

   In (3), the Russian analogs of build and push in (2) display the same reaction w.r.t. the temporal modification tests as their English counterparts. Thus, the data in (3) supports Filip and Rothstein's (2006) assertion that perfective verbs in Russian have telic events in their denotations. On the other hand, some perfective verbs in Russian occur with for X time modifier, which at first seems as counterevidence for counting them as telic. Such verbs are derived from imperfective activities and states by the
prefixes \textit{PO-} and \textit{PRO-}. Nonetheless, a close analysis reveals that such \textit{PO-/PRO-} derived perfective activities and states denote telic events in terms of their entailment properties, as shown in (4)-(5) (Braginsky 2003).

(4) a. John pogovoril\textsubscript{PRF} čas.
   John PO-talked  hour
   'John talked for an hour.'
   ≠

b. John pogovoril\textsubscript{PRF} polčasa.
   John PO-talked  half an hour
   'John talked for half an hour.'

(5) a. John požil\textsubscript{PRF} v Tel Aviv pjet\' let.
   John PRO-lived in Tel Aviv five years
   'John lived in Tel Aviv for five years.'
   ≠

b. John požil\textsubscript{PRF} v Tel Avive dva goda.
   John PRO-lived in Tel Aviv two years
   'John lived in Tel Aviv for two years.'

We see that the perfective event of \textit{talking for an hour} in (4a) does not entail \textit{talking for half an hour} in (4b). Both events have different final points, and the perfective event of \textit{talking} in (4b) cannot be a subpart of the \textit{talking} event in (4a). Hence, \textit{pogovorit}'\textsubscript{PRF} (to talk for a while) is a telic activity verb. The same holds for (5) – if (5a) is true, than (5b) is false, and vice versa. Thus, perfective states are telic as well. It is yet unclear why the telic perfective activities and states occur with \textit{for X time} in Russian, but such irregular behavior of these verbs with respect to the temporal modification test does not undermine their telicity, as demonstrated by the entailments in (4)-(5).

Having proven that perfective verbs in Russian, indeed, denote telic events, the next question is why the prefixed verbs in Russian are uniformly perfective. In order

\footnote{E.V. Paducheva suggests to call \textit{PO}-prefixed activity verbs \textit{delimited activities} (p.c.); see also Piñón 1993 for the discussion of perfective \textit{PO}-prefixed activities in Polish.}
to answer this question, let's examine first what triggers the application of the telicity operator $MAX_E$ in English.

### 7.2 On Telicity, Perfectivization and Prefixation

A recent theory of telicity in Rothstein 2007 argues that a verbal phrase in English is assigned a telic reading only if the conditions for individuating what counts as a single occurrence of an event, denoted by the given verb, are specified. This principle is formulated in (6) below.

(6) A VP is telic, if it contains sufficient lexical information on the basis of which a unique single event, denoted by the given verb, can be individuated.

For instance, an event of building the house is telic, since language user can define what counts as building the house event, based on his general knowledge of the world. An event of running a mile can be also classified as telic, since a mile measure phrase provides lexical information about what counts as a normative running event in the given circumstances. I will provide a formal analysis of these examples and the telicity criterion in (6) later on.

Some English verbs inherently denote single well-defined, or atomic, events as a part of their lexical meaning. Such verbs, which are called naturally atomic in Rothstein 2007, are semelfactives and achievements (examples (7a)-(7b), respectively). Thus, by the telicity criterion in (6), it follows that the verbs in (7) denote telic events.

(7) a. John jumped. [Semelfactive]
   b. The train arrived at the station. [Achievement]

I should note here that semelfactive and achievement events are by default expressed by perfective verbs in Russian, as in (8a)-(8b)$^{51}$. Since perfective verbs are counted as telic, the lexical classes of semelfactive and achievement verbs show a similar behavior with respect to telicity in both English and Russian.

---

$^{51}$ As noted in the previous chapters, perfective achievements can only be imperfectivized under the habitual interpretation, as in Poezd přijíval$^{\text{IMP}}$ na stanici v sem’ časov utra (The train used to arrive at the station at 7 a.m.). Semelfactives cannot undergo a secondary imperfectivization at all.
(8) a. John prygnul\textsuperscript{PRF}.
   John jumped
   'John jumped [once].'

b. Poezd pribyl\textsuperscript{PRF} na stanziju.
   Train arrived on station
   'The train arrived at the station.'

Activity verbs in English, such as (9a), are generally atelic, but can be forced into a telic interpretation by adding a measure expression, as in (9b).

(9) a. Mary ran for an hour / *in an hour.

b. Mary ran a mile in an hour / *for an hour.

Transitive accomplishment verbs in English are telic with single or quantized plural objects, but are atelic with bare plural/mass objects.

(10) a. John built the house / three houses in a year.

b. John built houses for a year.

Rothstein 2007 proposes that all verbs are inherently countable and contain a measure criterion $U$ for identifying a single instance of an event, denoted by the given verb, as illustrated in (9).

(11) $V \rightarrow \lambda e. P(e) \land \text{MEAS}(e) = <1,U>$

The maximalization operator $MAX_E$ applies in English at the level of VP, yielding a maximal set of events, denoted by VP, which count as 1 by the $U$ criterion. The $U$ criterion, however, does not have to be \textit{a priori} lexically specified. In the case $U$ is explicitly provided (either by the lexical semantics of the verb itself or by modifying expressions and/or context), the given verb becomes telic with $MAX_E$. When $U$ cannot be recovered, $MAX_E$ applies vacuously and a verbal predicate counts as atelic. Rothstein 2007 provides the following account for the application of $MAX_E$. 
(12) TELIC (VP) = \( \lambda e. P(e) \land MEAS(e) = <1, U> \lor MAX_{e} U(e) \) if \( U \) is specified
\( \lambda e. P(e) \land MEAS(e) = <1, U> \) otherwise.

The fact that the telic operator applies at the level of VP allows shifting naturally atelic predicates, such as activity verbs, into a telic interpretation by adding measure expressions, which make it possible to recover the \( U \) value for the given event. Consider the following example (13), repeated from (9).

(13) a. Mary ran for an hour / *in an hour. [adopted from Rothstein 2007]
\[ \exists e [RUN(e) \land Agent(e) = Mary \land MEAS(e) = <1, U> ] \]

b. Mary ran a mile in an hour / *for an hour.
\[ \exists e [RUN(e) \land Agent(e) = Mary \land MEAS(PATH(e)) = <1, MILE> \land MAX_{e, \lambda e. RUN(e) \land MEAS(PATH(e)) = <1, MILE>} (e) ] \]

In (13a), the \( U \) criterion for the running event cannot be identified, licensing an atelic reading. In (13b), on the other hand, the value of \( U \) is provided by the spatial measure of distance, \textit{a mile}, which allows the \( MAX_{e} \) to pick out the maximal set of \textit{run a mile} events, denoted by the VP.

Semelfactives and achievements inherently denote single events and, therefore, have a lexically specified \( U \) value as a part of their lexical meanings. Consequently, these classes of verbs are naturally telic. Accomplishments, on the other hand, are complex events of change, which involve an incremental relation between a \textit{BECOME} event of change and its theme. When a theme object is a countable, or atomic, entity, such as \textit{house} in \textit{John built the house}, a single event of change can be established, resulting in the telic reading of the accomplishment VP. When a theme is non-atomic, such as \textit{houses} in \textit{John built houses}, a single event of change cannot be determined, leading to an atelic interpretation of the accomplishment predicate.

Now, let's return to the prefixed verbs in Russian. Since the perfectivizing operator in Russian was previously assumed to be analogous to the \( MAX_{e} \) operator in English, it must apply under the same conditions, as defined in (12). Put differently, the \( U \) criterion for a given input verb must be specified as a precondition for applying the perfectivizing operator. I assume that, similarly to English, semelfactives and achievements in Russian contain a built-in \( U \) criterion in their lexical meanings. Thus, these two lexical classes of verbs are automatically perfectivized, as in (3).
other hand, the data in (4)-(5) demonstrates that verbs denoting non-atomic events, such as activities and states, can be perfectivized as well. Consequently, there must be some semantic mechanism that explicitly provides the $U$ measure criterion for non-atomic verbs in Russian. Filip and Rothstein 2006 proposes that the missing lexical information for recovering the $U$ value for non-atomic verbs in Russian is provided by verbal prefixes. A subset of prefixes act as extensive measure functions on events, delimiting the development of an event with respect to some measure scale and, by doing so, setting up a range of alternative $U$ values. This proposal is corroborated by the semantic analysis of the prefix $ZA$-, outlined in the previous chapter. $ZA$- not merely derives accomplishments from activities (and states) by imposing the incremental BECOME ESTABLISHED event of change. It also restricts the extent of change in locations, objects and temporal traces of events by providing a specific interval of validation at which the given event holds, ranging between the default and the maximal values on the closed measure scale, introduced by the BECOME ESTAB event of change. The values on the scale are recovered from the properties of a measured entity, the context and our real-world knowledge. For instance, take the imperfective determinate motion verb $bežat^{\text{IMP}}$ (to run). Its goal argument, say forest, is picked up as an incremental argument of the BECOME ESTAB event of change, imposed by $ZA$-. In such case, the values on the scale correspond to units of measuring distance (since it is a part of our world knowledge that spatial locations are measured in units of distance); the default value is a minimal point of entry into the forest (say, ten meters from the outskirts of the forest); and the maximal value on the measure scale is the contextually determined point, where the forest ends. By providing such interval of validation, $ZA$- sets a range of $U$ values for identifying what counts as an event of running into the forest; namely, crossing the entry point of the forest and stopping somewhere within its boundaries. The semantic denotations of $bežat^{\text{IMP}}$ (to run) and its $Z4$-prefixed counterpart $zabežat^{\text{PRF}}$ (to run into) are provided in (14a)-(14b), respectively.
(14) a. bežat\textsuperscript{IMP} (to run) $\Rightarrow \lambda x.\lambda e. \text{RUN}(e) \land \text{GOAL}(e) = x \land \text{MEAS}(e) = <1,U>

b. zabežat\textsuperscript{PRF} (to run into) $\Rightarrow \lambda x.\lambda e. \exists e_1,e_2 [e=S(e_1\cup e_2) \land \text{RUN}(e_1) \land \text{GOAL}(e_1)
\land \text{MEAS}(e) = <1,\lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{GOAL}(e_1)\land x> 
\land \text{MAX}_{\lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = x}(e)

The $U$ criterion in (14b) is determined by the semantic properties of the BECOME ESTAB event of change, imposed by the prefix $ZA$-, and the properties of its goal argument. Thus, the prefix $ZA$- itself is not the perfectivizing operator, but it sets the ground for an application of such operator by supplying a measure criterion for a single event of change. The separation between the prefixation and the perfectivization in Russian has a number of important implications.

First, as noted in Filip and Rothstein 2006, a prefix can, in principle, apply to a perfective verb (basic or derived with other prefix). If a prefix was a grammatical perfectivizing operator, such application had to be prohibited by the laws of the grammar (e.g., one cannot apply the -ing progressive operator in English to already progressive verb: *John is writing / (*writinging)). Chapter III illustrated that the prefix $ZA$- applies to perfective semelfactive verbs and shifts them into locative $ZA$-prefixed accomplishments. The question is why, then, $ZA$- does not occur with other basic and derived perfective verbs in the lexicon. A possible explanation for this fact is, as suggested in Filip and Rothstein 2006, a single delimitation constraint on measuring events; namely, an event can be measured in only one way along one of its parameters. Since different prefixes are associated with distinct measure scales and/or intervals of validation, it is plausible that $ZA$- is incompatible with the truth conditions, set by other prefixes, in derived perfective prefixed verbs. In the case of the semelfactive motion verbs, $ZA$- apparently does not clash with the semantics of a perfectivizing suffix $nu$-, allowing the spatial $ZA$-derivation. Moreover, some basic perfective verbs, such as dat\textsuperscript{PRF} (to give) and kupit\textsuperscript{PRF} (to buy), also occur with $ZA$-, forming what seems to be the resultant accomplishment verbs zadat\textsuperscript{PRF} (to assign <homework>) and zakupit\textsuperscript{PRF} (to buy lots of <goods>).

Second implication of Filip and Rothstein's (2006) account of prefixation concerns the relation between a perfective verb and its arguments. Filip and Rothstein 2006 account argues that the crucial difference between English and Russian with
respect to telicity parameter is that the maximalization operator, $MAX_E$, applies at the level of VP denotations in English (and Germanic languages in general), and at the level of V denotations in Russian (and other Slavic languages). This argument is based on the fact that an atomic/non-atomic status of theme arguments of accomplishment verbs in English plays a crucial role in determining atelic/telic interpretation of accomplishment VPs (Rothstein 2004, 2007). In Russian, however, an object of a perfective accomplishment verb is normally interpreted as an atomic entity, even if it is a bare plural or mass noun. Consider the following examples (15)-(16) that illustrate the difference between two languages.

(15) a. John wrote the letters in half an hour / *for half an hour.
   b. John wrote letters ??in half an hour / for half an hour.

(16) a. John napisal $^{PRF}$ pis'ma za tri časa / * tri časa.

   John NA-wrote letters in three hours three hours
   'John wrote the letters in three hours.'

   b. John kupil $^{PRF}$ jabločnyj sok.

   John bought apple juice
   'John bought (some definite quantity) of apple juice.'

In (15a), the letters licenses a telic interpretation of the write the letters VP, while the non-atomic bare plural noun letters in (15b) gives rise to an atelic interpretation of the VP. In (16a), on the other hand, the bare plural noun letters is interpreted as some definite atomic object. Even the mass noun apple juice – an object of the perfective verb kupit' $^{PRF}$ (to buy) in (16b) – is perceived as some contextually defined specific quantity of apple juice (for instance, a bottle of apple juice). Examples like (16) appear to serve as evidence for Filip and Rothstein 2006 assertion that the perfective operator applies at the level of V-denotations. Suppose an accomplishment root verb, such as napisat' $^{PRF}$ (to write) in (16a), denotes a maximal accomplishment event of writing. Due to the incremental relations between an event of change and its theme in accomplishment events, a maximal (telic) accomplishment event curves out some finite chunk of its theme argument. Thus, the maximal finite event of writing must have some definite quantity of letters as its theme. It seems, then, that the
perfectivizing operator alters the selectional restrictions that an input verb imposes on its arguments, forcing it to choose atomic themes (or contextually available atomic parts in the case of mass/plural themes). But does (16) really indicate that such definiteness restriction on the interpretation of themes of perfective accomplishments comes from the perfectivizing operator itself?

Let's take the case of the locative accomplishment $zabezat^{PRF}$ (to run into). The prefix $ZA$- imposes the BECOME ESTAB event of change onto the input determinate motion verb $bežat^{IMP}$ (to run). BECOME ESTAB takes a location, denoted by the goal argument of $bežat^{IMP}$ (to run), as its incremental argument and imposes a set of the following restrictions on the manner of change: 1) monotonic incursion into the goal area; 2) a location just outside or on the outer border of the goal area serves as a starting point of incursion; 3) a closed interval of validation on the spatial measure scale for the given event of change, ranging between a default entry point to the given location and its final boundary. Suppose that a given location is the forest. A starting point of entering into the forest is its outskirts, the default entry point is, say, ten meters into the forest; and the maximal value is the point where the forest ends – let's say 10,000 meters into the forest. So the interval of validation for $zabezat^{PRF} v les$ (to run into the forest) locative accomplishment is between ten and 10,000 meters into the forest, as illustrated in (17).

(17) spatial $RUN\ INTO\ THE\ FOREST$ event of change:

In such way, the prefix $ZA$- introduces the range of $U$ values for identifying the atomic events of running into the forest. Any event, which involves an incursion of ten to 10,000 meters into the forest, can be validated as an instance of $zabezat^{PRF} v les$ (to run into the forest). The perfective operator, then, singles out a set of maximal events of running into the forest with respect to the spatial measure scale in (17),
provided by ZA-. Let's assume that in the given context only the (set of) events of running 2,000 meters into the forest are picked by the \( MAX_E \) operator as being in the denotation of \( \text{zabežat}^{\text{PRF}} \) v les in (18).

(18) John zabežal\(^{\text{PRF}}\) v les.

\[
\exists e. \exists e_1, e_2 \left[ e = S(e_1 \sqcup e_2) \land \text{RUN}(e_1) \land \text{GOAL}(e_1) = \text{forest} \land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \text{GOAL}(e_1) \land \text{MEAS}(e_1, \lambda e. \text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{forest} \land \text{MAX} < \lambda e. \text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{forest} > (e), \right. \\
\left. \text{where the U value, provided by the event of change and the context, is 2,000 meters into the forest.} \right]
\]

In such case, one might argue that the perfective operator applies at the level of \( VP \)-denotation, when the goal argument position is filled in by \( \text{forest}. \) Filip and Rothstein's (2006) argument in favor of the V-level position of the perfectivizing operator is based on the fact that theme arguments of perfective verbs are bounded even if the theme is a bare plural or mass object, indicating that a given event is maximally bounded at the level of root verb. The same observation is true for locative ZA-prefixed accomplishments, since \( Vse \text{ studenty zašli}^{\text{PRF}} \) v kabinety is interpreted as \textit{all the students went into the rooms}, meaning some specific definite rooms. The boundness of a theme/location in a ZA-prefix verb, however, has to do with the fact that the \text{BECOME ESTAB} event of change, brought in by the prefix ZA-, comes with a built-in closed measure scale that is mapped against a measured entity, restricting the choice of a location/theme argument in ZA-prefix verbs to bounded objects. Thus, the prefix ZA- allows an alternative explanation to the bounded status of its goal or theme arguments, which does not involve an application of the perfectivizing operator at the level of V-denotation. Moreover, a behavior of the prefix ZA- with accomplishments with bare plural direct objects seems to indicate that the \( MAX_E \) operator in Russian applies to VPs. As shown in the previous chapters, such accomplishments acquire the inchoative reading of ZA- only when their objects are interpreted as \textit{kinds}, as in (19b). Otherwise, they are interpreted as resultant ZA-prefix accomplishments, as in (19a).
(19) a. John začital \textsuperscript{PRF} knigi.
   John ZA-read \hspace{1em} books
   'John read the books to pieces.'
b. John začital \textsuperscript{PRF} knigi.
   John ZA-read \hspace{1em} books
   'John started reading books (in general).'

In the previous chapter, I explained the alternation of meanings of začítat'\textsuperscript{PRF} in (19) by assuming that the prefix ZA- cannot measure the extent of change of kind argument and, consequently, takes the lower-ranking temporal trace participant in the thematic hierarchy as its argument. But had the perfective operator applied to začítat'\textsuperscript{PRF} and forced it to take atomic themes only, it could not have taken the kind argument as its theme at the first place. One could argue, of course, that some other semantic operation occurred at the level of V-denotation, preceding the application of \textit{MAX}, and shifted a theme argument of začítat'\textsuperscript{PRF} into the kind reading. In such case, we might expect this operation to occur in other prefixed forms of \textit{read} as well. Yet it is not the case, as shown in (20).

(20) a. John pročital \textsuperscript{PRF} knigi.
   John PRO-read \hspace{1em} books
   'John read all the books.'
b. John dočital \textsuperscript{PRF} knigi.
   John DO-read \hspace{1em} books
   'John finished reading all the books.'
c. John perečital \textsuperscript{PRF} knigi.
   John PERE-read \hspace{1em} books
   'John reread all the books.'

The bare plural noun \textit{books} can only acquire a definite interpretation in (20), excluding the possibility of a generally available shift of bare plural objects into kind-type denotations in perfective verbs. Nonetheless, there might be another explanation for the data in (19). Accomplishments with bare direct objects may undergo an aspectual type-shift operation, which changes their status into habitual predicates,
making their theme argument unrecognizable as such by the prefix Za-. Thus, the analysis of the prefix Za- does not provide conclusive evidence either in favor of Rothstein & Filip 2006 claim regarding the position of perfectivizing operator or against it. In the case of Za-, the restrictions on the definiteness of location and theme arguments in perfective Za-prefixed accomplishments arise due to the homomorphism between the closed measure scale of the BECOME ESTAB event and its incremental argument. To put it differently, the closed measure scale, inherently built into the semantics of BECOME ESTAB, determines that the extent of change that a given argument undergoes is bounded. Consequently, an incremental argument of BECOME ESTAB, mapped against such closed measure scale in the process of constructing an incremental chain of stages for the given event, needs to be bounded as well. Thus, the restriction on maximal entities as measured arguments of perfective accomplishments seems to arise from the prefix Za-, rather than the perfectivizing operator. However, it may not be the case for other verbal prefixes in Russian. Thus, I will leave the question of a precise position of perfectivizing operator open at this point, though I concur with Filip & Rothstein 2006 that it applies to a given verb after the application of Za-.

To sum up, the perfectivizing operator and the prefix Za- are two distinct semantic functions in Russian. The prefix Za- imposes selectional restrictions on the measured argument of an input verb via the BECOME ESTAB event of change, which sets a range of values for identifying an atomic event of change with respect to the properties of a measured argument, the context and our knowledge of the world. The perfective operator, applying at the later stage, selects the most appropriate set of maximal events in the given circumstances from the range of alternatives, provided by the prefix Za-.

7.3 The Semantic Network of Meanings of Za-

A semantic network of meanings of a prefix, as proposed in Krongauz 1998, must account for an invariant meaning of a prefix, the transfer rules for shifting from an invariant into specific meanings, and the influence of contextual factors on the semantics of the prefix. Since the latter component of the semantic network – the contextual factor – lies outside the scope of this work, I shall propose a (partial)
semantic network of meanings for the prefix $ZA-$, which includes the first two components.

**The Invariant Meaning of $ZA-$**

In the previous chapters of this dissertation, the meaning of $ZA-$ was defined as a derivation mechanism from input into output verbs. In the course of the investigation of the semantic properties of $ZA-$, I have shown that $ZA-$ acts as an aspectual shift operator, deriving distinct subtypes of accomplishments – locative, resultant, inchoative – from activity and state input verbs. In the case of an aspectual mismatch between the $ZA$-shift operation and its input, i.e., when an input verb is a lexical accomplishment, it is shifted into activity by the EXT operation prior to the application of the prefix $ZA$-. In chapter VI, I argued that the three meanings of $ZA$- are instances of a more abstract accomplishment event, and the difference between them depends on the choice of a measured argument. The template for this abstract event of change, call it the establishment $ZA$-prefixed accomplishment, is as follows.

\[(21) \textit{Establishment Accomplishment Template} \]

$$
\lambda R \lambda x_{1...N} \lambda P \lambda e \exists e_1, e_2 [ e = S(e_1 \sqcup e_2) \land P_{\text{ACT./STATE}}(e_1) \land \theta_{1...N}(e_1) = x_{1...N} \\
\land \text{BECOME ESTABLISHED}(e_2) \land \text{Arg}(e_2) = R(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] 
$$

where $R(e_1)$ is either $\theta(e_1)$ or $\tau(e_1)$.

The prefix $ZA$-, thus, shifts input verbs into establishment accomplishments, as illustrated in (22).

\[(22) \textit{Establishment Accomplishment Shift for Activities and States} \]

$$
ZA\text{-SHIFT} (\lambda R \lambda x_{1...N} \lambda P (P_{\text{ACT./STATE}}(e) \land \theta_{1...N}(e) = x_{1...N}) \land R(e)) = \\
= \lambda R \lambda x_{1...N} \lambda P \lambda e \exists e_1, e_2 [ e = S(e_1 \sqcup e_2) \land P_{\text{ACT./STATE}}(e_1) \land \theta_{1...N}(e_1) = x_{1...N} \\
\land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = R(e_1) \land \text{INCR}(e_1, e_2, C(e_2))] 
$$

As mentioned above, lexical accomplishments cannot occur with the prefix $ZA$-. Thus, they first undergo a shift into activities by the EXT operation, repeated in (23).
(23) Activity Extraction Operation

\[ \text{EXT}(\lambda y \lambda x_1 \ldots x_N \lambda P \lambda e \exists e_1 e_2 \mid e = S(e_1 \cup e_2) \land P_{\text{ACTIVITY}}(e_1) \land \theta_{1 \ldots N}(e_1) = x_1 \ldots x_N \]
\[ \land \text{Theme}(e_1) = y \land \text{BECOME-Ed}(e_2) \land \text{Arg}(e_2) = \text{Th}(e_1) \land \text{INCR}(e_1, e_2, C(e_2))) \]
\[ \rightarrow \lambda y \lambda x_1 \ldots x_N \lambda P \lambda e \left[ P_{\text{ACTIVITY}}(e) \land \theta_{1 \ldots N}(e) = x_1 \ldots x_N \land \text{Th}(e) = y \right] \]

The ZA-shift in (22) replaces the spatial, resultant and inchoative ZA-shifts, presented in chapters III, IV and V, respectively. Consequently, the establishment accomplishment in (21) is a unifying template for the locative, resultant and inchoative accomplishments. In such a way, the division of the abstract invariant meaning of ZA- into specific spatial, resultant and inchoative interpretations is dependent on the choice of the \( R(e) \) argument of the BECOME ESTAB component of the establishment accomplishment, derived by (22). That choice is governed by the general transfer rule mechanism, discussed in the previous chapter. If \( R(e) \) is a location, ZA- derives a spatial accomplishment; if \( R(e) \) is a material entity, a resultant accomplishment is formed with ZA-; if \( R(e) \) is a temporal trace of an event, ZA- derives an inchoative accomplishment. Thus, the categorization of the ZA-prefix verbs in Russian, derived by the ZA-shift rule in (22), into spatial, resultant and inchoative accomplishments is based on the set of transfer rules that regulate which argument of an input verb is picked up as an incremental argument of the BECOME ESTAB event of change. Let me illustrate how these rules work on the basis of some examples from the lexicon.

In chapter VI, we have seen that the prefix ZA-, or, more precisely, the BECOME ESTAB event, associated with it, is sensitive to three types of entities: locations, material objects and temporal traces of events. These entities form a thematic hierarchy structure, repeated in (24).

(24) Thematic Hierarchy:

\[ \text{GOAL}^{ZA} \rightarrow \text{THEME}^{ZA} \rightarrow \tau(e) \]

Applying to a certain input verb, BECOME ESTAB chooses one of the participants in the hierarchy in (24) as its incremental argument with respect to the following transfer rules.
**Transfer Rule 1:** Take the highest-ranking participant of the thematic hierarchy in (24), available in the argument structure of the given input verb, as an argument of the BECOME ESTAB event of change.

The transfer rule 1 has a number of implications for the distribution of meanings of ZA-prefixed verbs. In the simplest case, the input verbs with obligatory goal arguments, which satisfy the selectional restrictions of ZA-, acquire the spatial meaning of ZA-; and the input verbs with mandatory theme arguments are derived into resultant ZA-prefixed accomplishments. Granted that all events have a temporal trace, verbs that do not allow goals and themes in their lexical argument structure, acquire the inchoative meaning of ZA-. Consider the following examples (25)-(27).

(25) a. John šel \(^{\text{IMP}}\) \(v\) les.
    John walked in forest
    'John walked to the forest.'
    \(\exists e \left[ \text{WALK}(e) \land \text{Agent}(e) = \text{John} \land \text{GOAL}(e) = \text{forest} \land \text{MEAS}(e) = <1,U> \right] \)

b. John zašel \(^{\text{PRF}}\) \(v\) les.
    John ZA-walked in forest
    'John walked into the forest.'
    \(\exists e \exists e_1, e_2 \left[ \text{e} \overset{S}{=} (e_1 \cup e_2) \land \text{WALK}(e_1) \land \text{Agent}(e_1) = \text{John} \land \text{GOAL}(e_1) = \text{forest} \land \right.\)
    \(\text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \text{GOAL}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) \land \text{MEAS}(e) = <1, \lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{forest} > \land \right.\)
    \(\text{MAX} < \lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{forest} > (e) \),
    where the \(U\) value is an extent of incursion into the forest, supplied by the semantics of BECOME ESTAB and the context, corresponding to some \(X\) units of distance.

The determinate motion verb idti \(^{\text{IMP}}\) (to walk) in (25a) has a mandatory goal argument in its lexical argument structure and, therefore, acquires the spatial meaning of ZA- in (25b). The prefix ZA- in zajdti \(^{\text{PRF}}\) \(v\) les (to walk into the forest) selects the goal argument, lexicalized by the forest location, as an incremental argument of the BECOME ESTAB event, which maps forest to its built-in measure scale, providing a
range of values for what counts as \textit{walking into the forest} event. Once one of these values is selected as the best alternative in the given context (= \(U\) value), the perfective operator applies, yielding a set of maximal events of walking the \(X\) distance into the forest.

(26) a. Derevo soxlo\textsuperscript{IMP}.

\begin{align*}
\text{Tree} & \quad \text{dried} \\
'A/\text{the tree dried}.'
\end{align*}

\[\exists e \left[ \text{BECOME DRIER}(e) \land \text{Theme}(e) = \text{tree} \land \text{MEAS}(e) = <1,U> \right]\]

b. Derevo zasoxlo\textsuperscript{PRF}.

\begin{align*}
\text{Tree} & \quad \text{ZA-dried} \\
'The \text{tree dried up}.'
\end{align*}

\[\exists e_1, e_2 \left[ e = ^{S}(e_1 \cup e_2) \land \text{BECOME DRIER}(e_1) \land \text{Theme}(e_1) = \text{tree} \\
\land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) \\
\land \text{MEAS}(e) = <1, \lambda e. \text{BECOME ESTAB}(e) \land \text{Theme}(e) = \text{tree} > \\
\land \text{MAX} \lambda e. \text{BECOME ESTAB}(e) \land \text{Theme}(e) = \text{tree}(e) \right],
\]

where the \(U\) value is an extent of the dryness of the tree, supplied by the semantics of \text{BECOME ESTAB} and the context, corresponding to some \(X\) units of temperature.

The scalar activity verb \textit{soxnut}\textsuperscript{IMP} (to dry) in (26a) does not have a goal argument, but includes an obligatory theme in its lexical argument structure. Hence, by the transfer rule 1, it acquires the resultant meaning of \textit{ZA}- in (26b). The prefix \textit{ZA}- in \textit{zasoxnut}\textsuperscript{PRF} (to dry up) picks a theme argument, lexicalized by the \textit{tree} object, as an incremental argument of \text{BECOME ESTAB} event. \text{BECOME ESTAB} constructs an incremental chain of stages for the \textit{drying of the tree} event, imposing its own measure scale on the inherent measure scale of \textit{dry}. The interval of validation, embedded within the measure scale of \text{BECOME ESTAB}, provides a range of values for what counts as \textit{drying up of the tree} event. One of these values is chosen as expressing an extent of dryness of the tree in the given context. Then, the \(\text{MAX}_E\)
operator applies to the denotation of *zasoxnut’ derevo* (to dry up tree), yielding a set of maximal events of *tree drying up to the extent X*.\(^{52}\)

\((27)\) a. John smejalsja\(^{\text{IMP}}\).

John laughed

'John laughed.'

\[\exists e \ [\text{LAUGH}(e) \land \text{Agent}(e) = \text{John} \land \text{MEAS}(e) = <1,U>]\]

b. John zasmejalsja\(^{\text{PRF}}\).

John ZA-laughed

'John began to laugh'

\[\exists e_1,e_2 [e = S(e_1 \cup e_2) \land \text{LAUGH}(e_1) \land \text{Agent}(e_1) = \text{John}\]

\[\land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \tau(e_1) \land \text{INCR}(e_1,e_2,C(e_2))\]

\[\land \text{MEAS}(e) = <1,\lambda.e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \tau(\text{LAUGH}(e))>\]

\[\land \text{MAX} \lambda.e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \tau(\text{LAUGH}(e))(e),\]

where the *U* value is a time of validation for the laughing event, supplied by the semantics of BECOME ESTAB and the context, corresponding to some *X* units of temporal duration.

The activity verb *smejat’sja*\(^{\text{IMP}}\) (to laugh) in (27a) takes neither goal nor theme arguments. Thus, the only participant of event that can be measured by BECOME ESTAB is the temporal trace of the laughing event. By the transfer rule 1, *smejat’sja*\(^{\text{IMP}}\) acquires the inchoative meaning of ZA- in (27b). The prefix ZA- in *zasmejat’sja*\(^{\text{PRF}}\) (to start laughing) selects a temporal trace of the event, denoted by the input verb, as an incremental argument of the BECOME ESTAB event. BECOME ESTAB constructs a temporal interval of validation for laughing, corresponding to the onset phase of the laughing event. I assume that the contextually determined moment of validation of *laugh* is selected as the *U* value for *zasmejat’sja*\(^{\text{PRF}}\). Then, the \(\text{MAX}_E\) operator applies to the denotation of *zasmejat’sja*\(^{\text{PRF}}\) (to start laughing), yielding a set of maximal inchoative events of laughing.

\(^{52}\) I assume that the theme argument of the intransitive *zasoxnut’*\(^{\text{PRF}}\) (to dry up) originates at the direct object syntactic position and is raised to the subject position after the applications of ZA- and \(\text{MAX}_E\).
Naturally, verbs that have alternative argument structures, allow alternative readings with the prefix ZA-. An example of such verb is *gruzit* \(^{\text{PRF}}\) (to load) in (28).

(28) a. John gruzil \(^{\text{IMP}}\) korobki v gruzovik.
   John loaded boxes in truck
   'John loaded (some) boxes into a/the truck.'
   \(\exists e \ [\text{LOAD}(e) \land \text{Agent}(e) = \text{John} \land \text{Theme}(e) = \text{boxes} \land \text{Goal}(e) = \text{truck}
   \land \text{MEAS}(e) = <1, U>]\)

b. John gruzil \(^{\text{IMP}}\) gruzovik.
   John loaded truck
   'John loaded a/the truck.'
   \(\exists e \ [\text{LOAD}(e) \land \text{Agent}(e) = \text{John} \land \text{Theme}(e) = \text{truck} \land \text{MEAS}(e) = <1, U>]\)

c. John zagruzil \(^{\text{PRF}}\) korobki v gruzovik.
   John ZA-loaded boxes in truck
   'John loaded boxes into the truck.'
   \(\exists e \exists e_1, e_2 [e = S(e_1 \sqcup e_2) \land \text{LOAD}(e_1) \land \text{Agent}(e_1) = \text{John} \land \text{Theme}(e_1) = \text{boxes}
   \land \text{Goal}(e_1) = \text{truck} \land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \text{Goal}(e_1)
   \land \text{INCR}(e_1, e_2, C(e_2)) \land \text{MEAS}(e) = <1, \lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{truck}
   \land \text{MAX}(\lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{truck})(e),\)
   where the \(U\) value is an extent of incursion into the forest, supplied by the semantics of \text{BECOME ESTAB} and the context, corresponding to some \(X\) units of distance.

d. John zagruzil \(^{\text{PRF}}\) gruzovik (korobkami).'
   John ZA-loaded truck with boxes
   'John loaded the truck up (with boxes).'
   \(\exists e \exists e_1, e_2 [e = S(e_1 \sqcup e_2) \land \text{LOAD}(e_1) \land \text{Agent}(e_1) = \text{John} \land \text{Theme}(e_1) = \text{truck}
   \land (\text{Instr}(e_1) = \text{boxes}) \land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1)
   \land \text{INCR}(e_1, e_2, C(e_2)) \land \text{MEAS}(e) = <1, \lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{truck}
   \land \text{MAX}(\lambda e.\text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{truck})(e),\)
   where the \(U\) value is an extent of filling up the track, supplied by the semantics of \text{BECOME ESTAB} and the context, corresponding to some \(X\) units of capacity.
The verb *gruzit' PRF* (to load) can occur with an optional goal argument, expanding its lexical argument structure from *Agent, Theme* in (28b) to *Agent, Theme, Goal* in (28a). Consequently, its *ZA*-prefixed counterpart *zagruzit' PRF* alternates between the spatial reading of *ZA*- in (28c), taking the goal *truck* as the incremental argument of BECOME ESTAB; and between the resultant meaning of *ZA*- in (28d), picking up the theme *truck* as the argument of the BECOME ESTAB event of change. While the same object *truck* serves as the argument of the BECOME ESTAB event in both (28c) and (28d), in (28c) it is shifted into a location-type object by the spatial preposition *v*-. As the result, the measure scale of the BECOME ESTAB event in (28c) consists of degrees of distance, based on the empirical fact that locations are measured in units of distance. On the other hand, *truck* in (28d) is an individual material object, belonging to the CONTAINER taxonomic class by the virtue of the lexical semantics of *load*. Thus, it is interpreted as undergoing a change in terms of its capacity, and the measure scale of BECOME ESTAB in (28d) is associated with the measure units of capacity. Consequently, the sentences in (28c) and (28d) vary in their interpretations. (28c) means that the boxes moved into the truck location, but does not provide any information whether the truck was loaded up or not. (28d), on the other hand, entails that the truck object undergoes a significant change with respect to its capacity in the course of the loading (by boxes) event.

The transfer rule 1 accounts for the simple cases of deriving *ZA*-prefixed verbs in which the prefix *ZA*- acts as an aspectual shift operator that derives *ZA*-prefixed accomplishment verbs from activities and states without radically altering a lexical meaning and an argument structure of its input verbs. However, as illustrated in chapter VI, the prefix *ZA*- can also take part in the word-formation process in Russian, introducing new lexical verbs into the lexicon by changing a lexical meaning and/or argument structure of the input verb forms. In this process, *ZA*- triggers the *By Analogy With Prototype* lexical coercion process (BAWP), which metonymically shifts the lexical meaning of an input verb prior to applying the prefix to make it meet the semantic requirements of *ZA*- . Such shift models a meaning of the given input verb by association with some basic, or prototypical, *ZA*-derivations, obtained by the transfer rule 1. The BAWP mechanism accounts for two types of shifts: 1) a drift in the lexical meaning of an input verb; 2) a drift in the lexical meaning of an input verb and the transformation of its argument structure. The former case is illustrated as the transfer rule 2; the latter – as the transfer rule 3.
Transfer Rule 2: In the case of a clash between the semantics of the given input verb and the application conditions of \textit{ZA-}, alter the lexical meaning of the input verb by the BAWP shift to meet the selectional requirements of \textit{ZA-}. Then, apply \textit{ZA-} to the altered input verb, in accordance with the transfer rule 1.

Let me illustrate how the transfer rule 2 works on the basis of the input verb \textit{stroit'} \textsc{IMP} (to build). As explained in chapter IV, the BECOME ESTAB event of change, introduced by \textit{ZA-}, restricts its incremental theme argument to be an existing material object. This restriction bars creation verbs, such as \textit{build}, from occurring with \textit{ZA-}. Thus, the prefix \textit{ZA-} cannot apply to \textit{stroit'} \textsc{IMP} (to build) in its normal meaning of bringing some object (\textit{house}, \textit{wall}, etc.) into existence in the course of building. The only way \textit{ZA-} can occur with \textit{build} is if the latter undergoes a semantic drift in its lexical meaning, which, consequently, alters its selectional restrictions on its theme. Here, the BAWP shift comes to play. As noted in chapter VI, the four lexical classes of input verbs that naturally acquire the resultant meaning of \textit{ZA-} are \textit{butter/fill} verbs, such as \textit{asfaltirovat'} \textsc{IMP} (to asphalt), \textit{damage} verbs, such as \textit{mučit'} \textsc{IMP} (to torture), \textit{accumulative} verbs, such as \textit{gustet'} \textsc{IMP} (to thicken) and \textit{acquisition} verbs, such as \textit{kupit'} \textsc{PRF} (to buy). The first class gives rise to the resultant \textit{cover} submeaning of \textit{ZA-}; the second – to the \textit{damage} submeaning; the third – to the \textit{become} subclass of the resultant \textit{ZA}-prefixed verbs; and the fourth – to the \textit{get} subclass. The BAWP operation has to reconstruct the semantics of \textit{stroit'} \textsc{IMP} (to build) by analogy with one of these lexical classes. A process of \textit{building} is normally not associated with the meanings of damage, acquisition or accumulation of some property, but its outcome leads to covering some space with buildings. Therefore, the most logical alternative is to model \textit{stroit'} \textsc{IMP} (to build) after the \textit{butter/fill} verbs, changing its lexical meaning into \textit{cover by building}. Such semantic drift in the meaning of \textit{stroit'} \textsc{IMP} affects its selectional restrictions with respect to its theme. Assuming that the \textit{butter} verbs select material objects of the taxonomic classes \textit{container} and \textit{surface}, the reconstructed \textit{stroit'} \textsc{IMP} takes \textit{container} or \textit{surface}-class theme as well. Then, the prefix \textit{ZA-} applies to the \textit{butter} verb \textit{stroit'} \textsc{IMP}, derived by the BAWP shift, coining a new lexical verb \textit{zastroit'} \textsc{PRF} (to cover by building, to build up).
(29) John zastroil PRF pustyр'.
    John ZA-built empty area
    'John built the empty area up.'

\[ \exists e. \exists e_1, e_2 \left[ e = S(e_1 \sqcup e_2) \land \text{BUILD}(e_1) \land \text{Agent}(e_1) = \text{John} \land \text{Theme}(e_1) = \text{empty area} \right. \\
\left. \land \text{BECOME ESTAB}(e_2) \land \text{Arg}(e_2) = \text{Theme}(e_1) \land \text{INCR}(e_1, e_2, C(e_2)) \right. \\
\left. \land \text{MEAS}(e) = <1, \lambda e. \text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{empty area}> \right. \\
\left. \land \text{MAX}_{\lambda e. \text{BECOME ESTAB}(e) \land \text{Arg}(e) = \text{empty area}}(e) \right. \]

where the \( U \) value is an extent of building up the empty area, supplied by the semantics of BECOME ESTAB and the context, corresponding to some \( X \) units of capacity.

The question is why \textit{house}, the original theme argument of the input creation verb \textit{build} is generally incompatible with zastroит' PRF. I assume that \textit{house} is not normally perceived as a \textit{container}-class object, which makes its choice as the theme of zastroит' PRF problematic. However, I believe that the appropriate contextual support makes such choice possible, as in (30).

(30) John zastroil PRF dom vnutrennimi peregorsdami.
    John ZA-built house with interior partition-walls
    'John built the house up with interior partition-walls.'

In (30), the \textit{house} is perceived as a container that is filled up by partition-walls. Though the sentence in (30) is not very natural, it is still felicitous in Russian.

As shown in the previous chapter, the BAWP shift is not always possible. There are (at least) four cases in which it fails to apply, as follows.

**Failures of the BAWP shift:**

1) The BAWP shift fails in the case of indeterminate and iterative motion verbs. The reason for such failure is that the manner of motion, described by such verbs, is incompatible with the semantics of the BECOME ESTAB event, associated with ZA-. BECOME ESTAB denotes a gradual monotonic change in affectedness of its incremental argument. In the case of the goal argument, it means that there is a
gradual monotonic incursion into the goal location in the course of the motion process, denoted by an input verb. An interval of validation, marked on the closed measure scale, associated with the BECOME ESTAB event of change, delimits the extent of incursion in such a way that a moving participant of a motion event stays within the boundaries of the goal location at the culmination of the given event. Indeterminate and iterative motion verbs violate these requirements, since they describe non-directional motion events. Even adding a goal argument to such verbs does not guarantee that the moving object ends up within the goal location at the culmination of the given motion event. For instance, \textit{John \textit{xodil}^{IMP} v les} [John walked to the forest] and \textit{John \textit{prygal}^{IMP} na stud} [John jumped on the chair] do not entail that John stayed in the forest after entering it, or remained on the chair after jumping upon it (in fact, \textit{xodit}^{IMP} [to walk] has a strong implication that John entered the forest and then walked out).

The BAWP shift, then, would have to coerce indeterminate and iterative motion verbs into denoting directional motion events, with their goal locations bounding the extent of the motion process. But verbs, denoting events of that kind, are already available in the lexicon – they are determinate and semelfactive counterparts of indeterminate and iterative motion verbs, respectively. I assume that the economy principle of the word-formation does not allow grammar to form new words with the exact lexical meanings as the existing ones. Thus, the BAWP shift does not occur with indeterminate and iterative motion verbs in Russian, forcing \textit{ZA-} to select the themes or the temporal traces of these types of verbs as an incremental argument of BECOME ESTAB event of change.

2) The BAWP operation also fails in the case of the transitive motion verbs that have moveable objects as their themes. In such case, the prefix \textit{ZA-} selects a temporal trace of a given motion verb as the incremental argument of the BECOME ESTAB event of change. A typical case of such failure of the BAWP rule is \textit{tolkat'}^{IMP} (to push), which can take animate or inanimate objects as its theme. In the former case, the \textit{ZA-} prefixed \textit{zatolkat'}^{PRF} can acquire the resultant damage meaning of \textit{ZA-}, though an inchoative reading is also possible. In the latter, however, only the inchoative interpretation is available. Thus, one cannot use \textit{zatolkat'}^{PRF} \textit{telegu} (to start pushing the cart) in the sense of \textit{to destroy the cart by pushing}. The reasons for the impossibility of the BAWP shift with holistic themes are yet unknown. As noted in chapter VI, it cannot
be related to the contrast of animate vs. inanimate themes, since there are other cases of the resultant damage verbs with inanimate themes, such as \textit{zastirat'}\textsuperscript{PRF} \textit{pjatno} (to remove the stain by washing) and \textit{zastirat'}\textsuperscript{PRF} \textit{plastinku} (to wear the record out by playing).

3) The third type of failure of the BAWP shift concerns generic individual-level activity and state verbs in Russian. Such activities and states do not normally have a theme or a goal argument, so that the only available participant of the thematic hierarchy to be measured by BECOME ESTAB is a temporal trace. However, the temporal traces of generic events are not bounded and, thus, violate the mapping-to-the-closed scale condition of the BECOME ESTAB event. In some cases, generic events can be shifted into a non-generic usage, as in the case of \textit{zalubit'}\textsuperscript{PRF} (to spoil with love) in \textit{Roditeli zalubili rebenka svoimi laskami} (The parents spoiled the child with their excessive tenderness). Such cases, however, are relatively rare, indicating that generic events consistently resist the BAWP shift operation.

4) A different case of the BAWP failure is accomplishments with plural objects, denoting \textit{kinds}, such as \textit{zacitat' knigi} (to start reading books). Though the \textit{kind}-type objects violate the selectional restrictions of \textit{ZA}-, the BAWP rule does not apply to exclude them from occurring with \textit{read}, allowing \textit{ZA}- to take the next participant in the thematic hierarchy – a temporal trace of \textit{read books} – as an incremental argument of BECOME ESTAB. Thus, the exceptions in (1)-(4) above provide grounds for making the following generalization, formulated in the transfer rule (2b).

**Transfer Rule 2b:** if the BAWP fails to apply with respect to a particular argument of the input verb, apply \textit{ZA}- to the next member of the thematic hierarchy of the given verb, in accordance with the transfer rule 1.

In the case of indeterminate and iterative motion verbs, \textit{ZA}- could not measure the extent of progress into their goal locations. It also fails to apply to holistic theme arguments of the transitive motion verbs. Thus, \textit{ZA}- is left with the temporal trace participant of the TH and, consequently, these verbs are assigned the inchoative meaning of \textit{ZA}-. When plural \textit{kind} objects of the input verbs are inaccessible by \textit{ZA}-,
as in the exception (4), the input verbs acquire the inchoative interpretation with \( ZA- \).
Finally, when the input verbs denote generic events, barring their temporal traces from being measured by the BECOME ESTAB event, the given input verbs do not occur with \( ZA- \) at all (since a temporal trace is the lowest-ranking participant in the thematic hierarchy structure).

The transfer rule 2 extends the range of verbs, occurring with the prefix \( ZA- \), in Russian, by changing the lexical meanings of imperfective verbs, found in the lexicon, via the lexical coercion BAWP shift, so that they could satisfy the selectional restrictions of the BECOME ESTAB event. The transfer rule 3 involves a more powerful word-formation operation in which the BAWP operation derives new lexical verbs by altering the lexical meaning and expanding the argument structure of its input verbs. The \( ZA- \) shift, then, applies to these derived forms, shifting them into \( ZA- \)-prefixed accomplishments and, thus, enriching the inventory of \( ZA- \)-prefixed verbs in the verbal lexicon of Russian.

**Transfer Rule 3:** Add a goal and/or theme argument to the argument structure of the given input verb and alter its lexical meaning by the BAWP shift to meet the selectional requirements of \( ZA- \). Then, apply \( ZA- \) to the altered input verb, in accordance with transfer rule 1.

The transfer rule 3 accounts for some cases of the spatial and resultant \( ZA- \)-prefixed accomplishments, derived from the input verbs, which do not have goal and theme arguments in their lexical argument structures, respectively. For instance, the spatial accomplishment \( zabit' \,^{\text{PRF}} \, gvozd' \, ^{v} \, stenu \) (to hammer the nail into the wall) is derived from the input verb \( bit' \,^{\text{IMP}} \), which does not have a goal argument position in its argument structure. The BAWP shift adds the missing goal argument and changes the meaning of \( bit' \,^{\text{IMP}} \) into \textit{move into some area by hitting}, modeling it after the prototypical transitive \textit{determinate motion} verbs, such as \( nesli \,^{\text{IMP}} \) (to carry something <somewhere>). In such a way, the BAWP shift creates a new homophonous verb \( bit' \,^{\text{IMP}} \) in Russian, which contains two obligatory lexical arguments – theme and goal – in its syntactic argument structure. Then, the prefix \( ZA- \) applies to that new verb, taking the goal argument as an incremental argument of the BECOME ESTAB event. As the result, a new \( ZA- \)-prefixed verb \( zabit' \,^{\text{PRF}} \) (to move something somewhere by hitting) enters the lexicon.
In another example, the BAWP shift models an intransitive *tanzevat’ IMP* (to dance) after the prototypical input *damage* verbs, such as *mučat’ IMP kogo-to* (to torture someone), adding a theme argument. Then, the prefix *ZA-* applies, forming the resultant damage accomplishment *zatanzevat’ PRF kogo-to* (to make someone tired/sick with excessive dancing).

The full force of the BAWP shift is manifested in the case of the 'empty-based' *ZA*-prefixed verbs in (31).

(31) a. John *zafutbolil PRF mjাč v vorota.*
   John *ZA-futboled ball in gate*
   'John kicked the ball into the gate.'

b. Vsemirnaja *pautina sovsem zapautinila PRF Mishu.*
   World wide web *totally ZA-webbed Misha*
   'The world-wide-web totally entangled Misha in its net.'

The *ZA*-prefixed verbs in (31) seem to be derived from the imperfective verbs *futbolit’* and *pautinit’*. These verbs, however, are 'empty-based', having no lexical meaning on their own. On the other hand, *futbol* (football) and *pautina* (web) are nouns in the lexicon. It looks like the BAWP shift first derives *futbolit’* from *futbol* and *pautinit’* from *pautina*, respectively. The former is modeled after the *determinate motion* verbs, assigning it a meaning of *throw with force* and adding the holistic theme and goal arguments. The latter is modeled after the *butter/fill*-class verbs, such as *zaputat’ PRF* (to tangle), acquiring the lexical meaning of *to entangle in the net* and getting the theme argument via the BAWP drift. Then, the prefix *ZA-* applies to the given derived forms, introducing two brand-new *ZA*-prefixed accomplishments to the lexicon. Naturally, deriving new verbs directly from nominal expressions by the BAWP shift requires a considerable contextual support.

The picture that emerges from the discussion of transfer rules 2 and 3 may create an impression that any verb can have its lexical meaning and/or argument structure adjusted by the BAWP shift to make it compatible with *ZA-. Nonetheless, as mentioned in the previous chapter, this is not the case. So far, I discussed four cases in which the BAWP operation systematically fails. This, however, does not imply that the BAWP shift succesfully applies to all the other input verbs in the lexicon. In fact,
the success of the BAWP operation largely depends on context and on a possibility of singling out a certain element in the meaning of the input verb (or noun), which might be associated with the prototypical derivations ofZA-. In other words, the so-called 'idiosyncratic' meanings ofZA-prefixed verbs are not entirely unpredictable, but rather fall in the range of lexical meanings of five thematic classes ofZA-prefixed verbs, derived from the corresponding prototypical input verbs (chapter VI, example 61, page 298); namely, *move into*, *cover*, *damage*, *become* and *acquire*. While it is not possible at this stage to predict with absolute certainty whether a certain verb can be adjusted by the BAWP shift to occur with the prefixZA- (and which meaning it acquires), a language user presumably makes such decision by comparing the given verb in some specific contextual environment against the prototypical derivations ofZA- and choosing the best alternative available in the given circumstances.

The three aforementioned transfer rules account for the range of theZA-prefixed accomplishments in Russian, with transfer rules 2 and 3 supplementing the transfer rule 1. The transfer rule 1 creates the basic prototypical subset of the spatial, resultant and inchoativeZA-prefixed accomplishments, derived by theZA-shift operation in (21). The transfer rule 2 explains the triggering of the BAWP shift, which allows theZA-shift application with verbs that do not originally satisfy the selectional restrictions ofZA-. The transfer rule 3 expands the range of input verbs forZA- even further by creating new homophonous verbs with a different meaning and argument structure from the existing ones. The situation is summarized in (32).

(32) **Formation of theZA-Prefixed Verbs in the Lexicon**

| Prototypical |ZA-prefixed verbs, obtained byZA-shift and the BAWP shift. (transfer rule 1) |ZA-prefixed verbs, obtained byZA-shift and the BAWP shift. (transfer rule 2) |

Division of theZA-prefixed verbs in the lexicon
The combination of the \(ZA\)-shift mechanism in (21) (which constitutes the invariant meaning of \(ZA\)-) and the BAWP word-formation mechanism, linked together via the three transfer rules, account for formation of the \(ZA\)-prefixed verbs in Russian, providing the (partial) semantic network of meanings of \(ZA\)-. This network completes the investigation of semantics of \(ZA\)-, conducted in this study. The findings of the semantic analysis of \(ZA\)- and their theoretical implications are summed up in the following sections 7.4-7.5.

7.4 Conclusions

In the introductory chapter, I set up a number of research questions that I intended to answer in the course of this work. It is time now to go back to these questions and check to which extent I have succeeded in providing answers for them.

**Question 1:** What is the semantic function of the verbal prefix \(ZA\)- in Russian? Is it a grammatical perfectivizing operator that shifts imperfective verbs into perfective ones?

**Answer 1:** The prefix \(ZA\)- is not a grammatical perfectivizing operator in Russian, though it sets the conditions for the application of the perfectivizing operator by providing a range of values for capturing the extent of the change, denoted by a \(ZA\)-prefixed verb, as outlined in 7.2. Its primary semantic function is of a lexical aspectual shift operator. \(ZA\)- takes activities (and some dynamic non-generic states) as its input and yields derived *establishment* accomplishments as its output. The *establishment* \(ZA\)-prefixed accomplishments constitute a special subtype of derived accomplishment events in Russian that come with inherent restrictions on their manner and extent of change. These restrictions originate from the internal semantic structure of the artificial BECOME ESTAB event of change, associated with the prefix \(ZA\)-. The *establishment* accomplishments in Russian are divided into three core instantiations – spatial, resultant and inchoative. Such division depends on the type of an incremental argument of the BECOME ESTAB subevent of an *establishment* accomplishment event. When such argument is a goal, denoting a location-type object (i.e., \(l\)-type), an *establishment* accomplishment acquires the spatial meaning of \(ZA\)-. When the incremental argument is a theme, denoting an existing individual-type
object (i.e., \(d\)-type), a derived \(ZA\)-prefixed accomplishment is interpreted as the resultant one (further subdivided into *accumulative*, *cover*, *damage* and *acquisition* thematic subclasses). Finally, when the argument of BECOME ESTAB is a temporal trace of an event (i.e., \(\tau(e)\)), denoted by an input verb, the derived accomplishment acquires the inchoative meaning of \(ZA\). Goals, themes and temporal traces of events constitute a thematic hierarchy of participants in an event, as defined in chapter VI. A highest-ranking member of the thematic hierarchy, provided by a particular input verb, is selected as the incremental argument of the BECOME ESTAB event of change. The range of meanings that can be expressed by the particular unprefixed verb, combined with \(ZA\), is governed by the three transfer rules, formulated in chapter VI and this chapter.

**Question 2:** Is \(ZA\) a lexical operator that changes a lexical meaning and/or argument structure of its input verbs?

**Answer 2:** The secondary semantic function of the prefix \(ZA\) is of a word-formational lexical operator that can change the lexical meaning and argument structure of its input verbs. Such change takes place in two stages. At the first stage, \(ZA\) triggers the BAWP shift operation, which applies to the input verb, altering its lexical meaning and/or argument structure to accommodate it for the selectional restrictions of the prefix \(ZA\), as described by the transfer rules 2 and 3. At the second stage, the altered input verb undergoes \(ZA\)-shift operation, deriving a new lexical *establishment \(ZA\)*-prefixed accomplishment.

The crucial point here is that the BAWP shift is not an independent lexical operation, but works in tandem with the prefix \(ZA\). In the previous chapters, I discussed a similar semi-dependent semantic operation EXT, which shifts imperfective accomplishments into activities to make them compatible with the aspecausal shift operation, imposed by the prefix \(ZA\). I assumed that the EXT operation is not limited to \(ZA\), but is rather available to other verbal prefixes in Russian. I shall extend this assumption to the BAWP shift mechanism, hypothesizing that it may precede the mechanism of verbal prefixation in Russian. Such assumption accounts for the well-known fact in the linguistic literature on prefixation that other verbal prefixes in Russian can also derive 'idiosyncratic' prefixed verbs that differ in their lexical meanings and argument structures from their input counterparts. In fact,
existence of idiosyncratic meanings is considered as one of the distinguishing marks of the lexical prefixes, as illustrated, for instance, in Svenonius 2004 and Ramchand 2004. The word-formational properties of the prefixes received much attention in Krongauz 1998 that provides numerous examples of empty-based prefixed verbs and atypical usages of existing prefixed verbs in special contexts (e.g., in poetry). As claimed earlier, the BAWP shift allows extending the range of verbs, coined by the prefix ZA-, from a set of prototypical cases, discussed in chapter VI, to a more lexically enriched set of ZA-prefixed accomplishments. In such a way, the BAWP shift turns the verbal prefixation mechanism in Russian into a powerful tool for introducing new lexical expressions into the lexicon. The most extreme manifestations of the combination of the BAWP and ZA-shifts are the empty-based ZA-prefixed verbs, which are presumably derived directly from the nominal expressions, as illustrated in (31). The BAWP shift, thus, enhances the semantics of the prefix ZA- as an aspectual shift operator, assigning it an additional semantic feature of the word-formational function.

The natural question is why the BAWP shift operation requires to be followed by a prefix rather than standing on its own. Perhaps, the answer to this question has to do with the fact that a verbal prefix provides a very rigidly structured event of change, making it more feasible to recover the lexical meaning of such an event from the context. For instance, let's take the empty-based ZA-prefixed verb zafigačit'\text{PRF} in zafigačit'\text{PRF} kamen'\text{PRF} v\text{PRF} okno (to cast the stone into the window). Zafigačit'\text{PRF} is formed from the lexically empty base, which does not have a coherent meaning of its own (or its original historical meaning is lost in a contemporary language). However, a speaker of Russian deduces from its intuitive knowledge of the meaning of ZA- and the presence of the goal argument in the VP that zafigačit'\text{PRF} must be interpreted as move something into some area. Therefore, the general structure of the change, provided by the prefix ZA-, together with some contextual support and an intuitive analogy with existing motion verbs is sufficient for filling in the lexical meaning of the empty-based input verb.

**Question 3:** Is there a way to predict a distribution of the meanings of ZA- on the basis of the meanings of its input verbs? In other words, which meanings of ZA- arise with which verbs?
Answer 3: Yes, and no. On the one hand, there are lexical classes of input verbs that consistently acquire a particular meaning of the prefix ZA-. These verbs form the pattern of the prototypical derivations of ZA-, presented in chapter VI. For instance, determinate motion verbs acquire the spatial meaning of ZA-; butter and fill verbs take the resultant cover submeaning of ZA-; the scalar change of state activities serve as an input for the resultant accumulative ZA-prefixed accomplishments. I have also illustrated some exceptional cases of ZA-derived verbs, which systematically violate the pattern by selecting the 'wrong' meanings of ZA- (such as indeterminate motion verbs that take only the inchoative meaning of ZA-) or not occurring with ZA- at all (such as generic activities and states). Hence, lexical verbs, belonging to prototypical and exceptional categories of the input verbs, allow a high degree of predictability in regard to the lexical meaning of their ZA-prefixed outputs.

On the other hand, many lexical verbs in Russian form idiosyncratic ZA-prefixed accomplishments, which have distinct lexical meanings and/or argument structure than their inputs. I explained such cases by proposing the BAWP metonymic shift that models such verbs after some prototypical category of the input verbs. At the moment, I do not have formal tools for providing an extensive semantic analysis of the BAWP operation. Thus, it is currently impossible to predict with certainty whether a certain non-prototypical input verb can occur with ZA-, and which meanings of ZA-it may take (or submeanings - in the case of deriving a resultant accomplishment). As we have seen in chapter IV, some verbs may express more than one submeaning of ZA-, depending on the properties of their theme argument and the context. For example, zalečít^{PRF} (to cure completely) alternates between the cover submeaning of ZA- in zalečít^{PRF} ranu (to cure the wound completely), and the damage submeaning in zalečít^{PRF} čeloveka (to kill/cause damage to the person by excessive healing).

Though it is clear that the range of meanings of ZA- that a given input verb may express is limited to the ones, set by the prototypical derivations, there is still a certain level of idiosyncrasy in the case of ZA-prefixed verbs, derived by the transfer rules 2 and 3 with the aide of the BAWP shift.

Question 4: Is there an invariant meaning of ZA- in the lexicon? If so, how is it divided into specific submeanings?
**Answer 4:** Yes. I defined the term *meaning of ZA-* as the semantic operation that takes an input verb and yields its ZA-prefixed output. The three types of ZA-shifts (spatial, resultant and inchoative), discussed in chapters III, IV and V, are reduced to the single ZA-shift operation, illustrated in (22). The division into the spatial, resultant and inchoative meanings of ZA- depends on the choice of the incremental argument of the BECOME ESTAB event of change, introduced by the ZA-shift. The selection of the appropriate incremental argument for a given input verb is made with respect to the thematic hierarchy of the participants in the event, denoted by that input verb, as outlined by the transfer rule 1. The prefix ZA- is sensitive to three types of participants – locations (denoted by goal argument), objects (denoted by theme) and temporal traces of events. Granted that all events have temporal traces, the inchoative meaning of ZA- is the default choice for all verbs that lack goal and theme arguments in their argument structure (or have goals and themes that do not meet the application conditions of ZA- and resist the BAWP shift). Individual-level generic events, denoted by *stable state* and *occupational* activity verbs (Padučeva 2004), however, do not allow their temporal traces to be bound by ZA-, rejecting the ZA-shift.

To sum up, the research goals, set up in the introductory chapter, have been met with moderate success. Moreover, the current case study of the prefix ZA- provides more general implications for the research of prefixation in Slavic languages.

### 7.5 Implications and Directions for Further Research

The study of the semantics of the verbal prefix ZA-, undertaken in the current work, has a number of important implications for the verbal prefixation in Russian. First, I analyzed ZA- as an aspectual shift operator, which takes (sets of) activity and state events and yields (sets of) accomplishment events. An interesting question to ask at this point is whether the other verbal prefixes in Russian behave as aspectual shift operators as well. Examples of delimited perfective PO/PRO-prefixed activities and states in the lexicon, such as the ones in (4)-(5), indicate that some prefixes do not shift their input verbs into accomplishment events. What is, then, the function of the prefixes PO- and PRO- that derive perfective activities and states? Clearly, they create new subtypes of activities and states by imposing some temporal boundary on their duration. It appears, thus, that the verbal prefixes modify the internal structure of
events, denoted by the input verbs, by imposing additional structural restrictions on the given events. A subset of prefixes, such as ZA-, may derive new subtypes of accomplishments as a byproduct of imposing such restrictions; a different subset of prefixes may create new types of achievements; while yet another subset, manifested by PO- and PRO-, gives rise to distinct types of activity and state events. The picture that emerges from such prefixal behavior is that, on the one hand, the four Vendlerian classes are relevant for Russian, but, on the other hand, they can be internally subdivided into a much richer spectrum of subclasses (compared to English), due to specific aspectual restrictions, introduced by the verbal prefixes. In such case, research in verbal prefixation in Russian may provide valuable contributions to our understanding of the lexical aspectual system of verb classes in this language.

The second implication of the current study, which is related to the first one, is the distinction between imperfective and perfective accomplishments in Russian. In the previous chapters, I argued (following Mehlig 1985, Padučeva 1996, among others) that the class of accomplishment verbs in Russian is represented by both imperfective and perfective verb forms. The crucial point here, however, is that imperfective accomplishments in Russian are normally the basic ones, while perfective ones are mostly derived by the verbal prefixes. In this work, I have demonstrated that the prefix ZA- creates a special subclass of derived accomplishments by imposing the artificial BECOME ESTAB subevent of change on lexical activities and states. Even when an input verb for the prefix ZA- is a lexical imperfective accomplishment, it undergoes a shift into an activity verb prior to the application of ZA-. Thus, all the ZA-prefixed accomplishments (including the ones derived from imperfective accomplishment verbs) are derived constructions in which an artificial BECOME ESTAB event of change replaces a lexical BECOME event, normally supplied as a part of the meaning of a genuine lexical accomplishment. The artificial nature of BECOME ESTAB accounts for both the strength and the weakness of ZA-prefixed accomplishment events. On the one hand, it makes the ZA-derived accomplishments 'stronger', in the sense of narrowing down the range of their possible meanings and the choice of their potential themes, by applying semantic restrictions, embedded in the semantics of the BECOME ESTAB event, on the manner and extent of change, expressed by a derived establishment accomplishment. On the other hand, a lexical vagueness of BECOME ESTAB makes a ZA-prefixed accomplishment 'weaker', allowing its lexical meaning to be more susceptible to the contextual and pragmatic
implicatures. Such susceptibility might be the reason for using the prefix *ZA*- as a word-formational tool, combined with the BAWP metonymic shift operation in Russian. If the BECOME ESTAB event does not have a clear lexical concept of change, but rather imposes some general outline for such change, such event of change is more flexible and dependent upon context than the lexical BECOME events.

By analogy with *ZA*-, it can be argued that all the prefixed accomplishment events in Russian are, in fact, derived accomplishments, while the only 'truly' lexical accomplishment verbs in Russian are the imperfective ones. If so, we might expect the imperfective lexical accomplishments and their derived counterparts to differ in the range of meanings they can express. Such difference is expected to be found even in the so-called pure aspectual pairs of accomplishment verbs, such as *pisat* IMP – *napisat* PRF (to write), where, at the first sight, there seems to be no semantic contrast in the lexical meaning of a verb between the imperfective and perfective forms. In fact, in chapter IV I demonstrated a difference between an imperfective accomplishment *asfaltirovat* IMP (to asphalt) and its *ZA*-prefixed counterparts with respect of their entailments on the extent of change of their themes. Yet *asfaltirovat* IMP – *zaasfaltirovat* PRF is regarded as a pure aspectual pair in many traditional accounts of prefixation (e.g., Tikhonov 1962). A further research of semantic differences between members of traditional aspectual pairs may show whether this expectation is borne out.

The exploration of the semantics of *ZA*- revealed some interesting issues for the future research on the lexical aspect in Russian. One of such issues are the scalar activities in Russian, such as *gustet* IMP (to become thick), mentioned in chapter IV. The scalar activities constitute yet another subtype of activity events in Russian, which does not have an analog in English. The determinate motion verbs might constitute a different type of scalar activities in Russian, having a possible ordered path structure in their denotation, as suggested in Součkova 2004 for Czech. Thus, the further investigation of the lexical aspect in Russian would have to account not only for different subclasses of derived prefixed perfective activities, states, accomplishments and achievements, but to pay a close attention to various possible subclasses of the imperfective lexical verbs as well.
To conclude, I have started the investigation of semantics of the prefix ZA- with the hope of providing a reliable model that would enable predicting the lexical meaning of a ZA-prefixixed output on the basis of the meaning of its input verb. I have partially fulfilled this goal by identifying the prototypical categories of the input verbs, deducing the invariant meaning of ZA-, constructing the pattern of alternation of meanings of ZA- and accounting for the anomalies in the pattern. I have also proposed the BAWP shift mechanism that supplements the primary ZA-shift operation, opening the way for the word-formational usage of the prefix ZA-. Having said that, some issues, involving the semantics of ZA- and the prefixation in general, remained unsolved in the course of this study. Nonetheless, I hope that the current case study of the semantics of the verbal prefix ZA- will shed some light on the semantic mechanism of ZA- and prefixation in general, contributing to a vast research on prefixation, perfectivization and lexical aspect in the Russian language. I believe that the insights, offered in this exploration, would prove helpful to subsequent research on ZA-, which would eventually allow reconstructing the complete semantic network of the meanings of the prefix ZA- in Russian, including contextual and pragmatic factors, not discussed in this thesis.
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A summary of the work to be examined is to examine the semantic nature of imperfective action (Tikhonov 1962) and to examine the role of imperfective (imperfective) forms in different meanings of their various forms in the various forms.

The analysis of the perfective verbs is addressed by Tikhonov (1962) in one of his eight stages of the action (demonstrating imperfective action). The perfective form of the imperfective action is the form of the action that has been completed, whereas the imperfective action is the form of the perfective action.

While imperfective action has been shown to affect the meaning of the lexicon, it is also possible to determine the perfective action of imperfective action.

The analysis of the imperfective action is addressed by Tikhonov (1962) in one of his eight stages of the action (demonstrating imperfective action). The perfective form of the imperfective action is the form of the action that has been completed, whereas the imperfective action is the form of the perfective action.

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The inchoative meaning of ZA is not the spatial meaning of ZA-.

The resultant meaning is the outcome of an event.

The inchoative meaning is not the resultant meaning of an event.

The inchoative meaning is not the resultant meaning of a change.
כלל בחרת המשמעות של זא — בראש מועל יוזה מוסים על בסיס המבנה הארגומנטית של מ料理.

(ZA-selection principle) מפעילי המוסברים בחומש הפקר.ANI דוג בפעוליים — אנלוגיים — במ-Smith על הזרמה של הזרמה, העכל הפועללים על כיוונים א- בלוקסיקון הל diferencia בחרת. עבור, הפרק שיש מנשה את המשמעות האחריות של כיוונים הא- בלוקסיקון הל diferencia בחרת.

האנאיה והתחדויות של הפרק

פרק שני ינית הנדרת הפרמאלאית של המשמעות האחריות של זא — פרקה את התוכנית הסיטוגותית

של המשמעויות הזרמות של זא — בראש ו칠הל האחריות של זא —ynchי-כליל מ엮יה

פרונטס ממשמעות ודללוש המשמעויות הסטרים של זא — הפרחים, התרנויות

התחדויות. הפרק שני ינית עם בקוש בך הזרמות — התחדויות הפרמות-ברפים. הפרק

וזיא מיצג בחרת המונחים והזרמות האפורות הפרמקטבליות של מאים לעל יסוד, בחרת ליצירות 2006 Filip and Rothstein של הפרמקטבליות בфрמט הסכלאניות. הפרק, הפרק, הפרק ומי

מנסת את מסקנות המחבר והשלוחים לע הזרמה הזרמות ברוסית ומצייגים מפסר קויים ממארק

ענדי בנות.
עבודה ומעシュנת חדרכחה של פרופסור סון רוטשטיין
מן המחלקה לאנגלית של אוניברסיטת בר-אילן.
הסמונטייה של הקידומת镶嵌-ברוסית

hibor les' kabat hatnogar "doktor fur filosofiyot"

מאת:

פסל בריגנסקי

המחלקה לangelogיט

הוגוש לשטו' אוניברסיטת בר אילת

ארד ב', תש"ח

รมת ג'