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Sarah Shull

The Experience of Space

The Privileged Role of Spacial Prefixation in Czech and Russian

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Preface

The text which follows is a slightly revised version of my Ph.D. dissertation in Slavic Languages and Literatures as submitted at the University of California, Berkeley, in December 2000. Professors Johanna Nichols, Alan Timberlake, and Dan Slobin served on my dissertation committee. Financial support for dissertation research and writing was provided by the UC Berkeley Slavic Department, the US Department of Education (FLAS fellowship), the American Council for Collaboration in Education and Language Study (ACCELS research scholarship), the American Council of Teachers of Russian (ACTR research scholarship), and UC Berkeley (Humanities graduate research grant; Vice Chancellor fund for research).

I would like to express my gratitude to the members of my dissertation committee, Alan Timberlake, Dan Slobin, and especially the chair, Johanna Nichols, for their guidance, encouragement, thoughtful commentary, and detailed suggestions for revision of the manuscript. Their input has been invaluable, as has been their support for the experimental approach I chose to pursue.

This study would not have been possible without the participation of numerous Russian and Czech consultants who gave generously of their time. In particular, Galina Mixailovna Godina and Sasha Godina aided me immensely in recruiting consultants and welcomed me warmly into their family. Kostia Klioutchkine, Filip Kašpar, and Barbora Moravková painstakingly transcribed the audio recordings and reviewed my own transcriptions. Thanks to Julia Irvine for her friendship and unwavering faith in the value of this research, and to Ellen Langer for many helpful discussions over tea.

I cannot thank my family enough for their love, patience, and understanding: my Father (who read this entire manuscript despite having no background in either Slavic languages or linguistics), my Mother, my husband Tom Ryan, and Lysander.

Berkeley, California
February 2003

Sarah Shull

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Abbreviations and Symbols

TR	trajector
LM	landmark
TRY	trajectory
ACC	accusative case
INSTR	instrumental case
PP	prepositional phrase
I	imperfective verb form
P	perfective verb form
†	example does not originate from audiotaped data collected for this study

Chapter 1. Introduction

1.1 Purpose of the dissertation

What, if any, is the relationship among senses of the Russian verbal prefix *по-* in *по-йти* (*по-*'walk') 'to set out (walking)', *по-читать* (*по-*'read') 'to read for a little while', and *по-строить* (*по-*'build') 'to build (completely)'? Similarly, what unifies the uses of the Czech verbal prefix *pře-* in *pře-jít* (*pře-*'walk') 'to walk across', *pře-plnit* (*pře-*'fill') 'to overfill, flood', *pře-psát* (*pře-*'write') 'to rewrite', *pře-kousnout* (*pře-*'bite') 'bite in half', *pře-bolet* (*pře-*'hurt') 'to stop hurting', and *pře-číst* (*pře-*'read') 'to read (completely)'? It has been notoriously difficult to demonstrate the semantic unity of verbal prefixes in Slavic languages, despite the fact that such questions have received considerable attention in Slavic. Recent research has made significant progress in this area, but all attempts to unify the senses of a single prefix suffer (overtly or covertly) from the same shortcoming -- an inability to maintain a semantic distinction among *different* prefixes.

One promising recent trend in the study of prefixes has been to assume that spatial semantics is cognitively primary, acting as a source domain for all of linguistic meaning. In particular it has been suggested that the spatial sense of Russian verbal prefixes is the most basic one, and that abstract uses are metaphorically based on spatial uses. Thus, while the spatial meaning represents only a small fragment of the greater semantic network of each prefix, it may occupy a privileged position in relation to other senses within that network and may serve to distinguish among the different prefixes. If this is true, it is worth having a clear spatial definition of each prefix, since the semantic distinctions which are made in spatial language will be important for linguistic expression in abstract domains as well. One of the primary objectives of this dissertation is to provide a clear and concise description of the basic spatial meaning for several cognate prefixes in Czech and Russian.

The research presented here is thus aimed at carefully establishing the spatial meaning of prefixes. The primary motive for this research, however, is to evaluate the nature of the relation between spatial uses and abstract uses and to determine if abstract uses do indeed involve primarily spatial metaphor. A significant portion of the dissertation, therefore, is devoted to a discussion of the connection between spatial and abstract prefixation. A secondary purpose is to compare the spatial and abstract uses of prefixes in Czech and Russian, and to see whether differences in the verbal systems of these two languages can be correlated with underlying semantic differences at the spatial level.

1.2 Theoretical framework and structure of the dissertation

This dissertation applies a cognitive linguistic approach to the synchronic spatial semantics of verbal prefixes in Czech and Russian. One important assumption inherent in a cognitive approach is simply that linguistic categories are not all-or-nothing categories with rigid boundaries. Rather, linguistic categories, like other categories, have prototypes -- privileged or best examples -- to which other members of the

category are related in some manner. The prototype and its extensions, or related senses, form a semantic network. The semantic network as a whole thus describes the main senses of a morpheme and the manner in which these senses are related to one another.

Cognitive semantics recognizes the inherent fuzziness in language, as in all cognitive phenomena. The flexibility inherent in the cognitive apparatus is necessarily accompanied by a certain degree of imprecision, and while it is widely recognized that there is variation among groups of speakers, as well as individual speakers, there may also be variation within the speech of an individual. In attempting to determine the spatial meaning of individual prefixes, then, it is important to bear in mind that the basic spatial meanings themselves may have fuzzy boundaries. For this reason, this study attempts to assess semantic networks from a statistical standpoint rather than making hard and fast distinctions concerning what senses do and do not belong within a given semantic network. To this end prefixes are analyzed in terms of the frequency with which they occur in various contexts. Specifically, this study assesses prefix semantics by examining the frequency with which prefixes occur in combination with various cases and prepositions, as well as with the nominals which appear in a particular case or as complements of prepositions.

In order to accomplish this, it is necessary to have a large corpus of prefixed verbs used only in their spatial meaning. Data collection therefore focused on motion verbs, since prefixes manifest (primarily) spatial uses in combination with verbs of motion. The constructions used are, for the most part, quite simple. (The project was in fact designed to elicit simple constructions.) By collecting a sufficiently large sample of responses to identical (and fairly uncomplicated) visual material, an assessment of the statistical tendencies in each language could be made. Even if Czech and Russian prefixes exhibit a similar semantic range overall, one should be able to detect uses which are more or less common in one language than the other. The comparative aspect is quite useful in this kind of approach; in addition to giving a thorough description of the tendencies in one language, one may describe these trends against the background of another possible (and, in fact, real) set of tendencies in another language.

As a result of the analysis of prefix/prepositional phrase combinations, a classificatory system is proposed for spatial prefixes and prepositions in Czech and Russian. Classification is based on the primary (spatiotemporal) semantic features of <SOURCE>, <PATH>, and <GOAL>, as well as the secondary (spatial) features of <PROXIMITY>, <CONTACT>, <CONTAIN>, and the tertiary (spatial) features <DIRECT>, <CONTOUR>, and <ENCIRCLE>. These features are discussed in detail in Chapter 2, which is concerned with establishing the spatial prototypes of primary prepositions in Russian and Czech. Prefix semantics is covered in Chapters 3, 4 and 5, with Chapter 3 focusing on prefixes which express the <source> or <goal> features (*вы-/vy-*, *в-/v-*, *с-/s-*, *от-/od-*, *под-*, *у-/u-*, *при-/při-*, *за-/za-*), Chapter 4 on prefixes which express the <path> feature (*о(б)-/o(b)-*, *пере-/pře-*, *про-/pro-*, *pod-*), and Chapter 5 concentrating on the behaviorally unusual prefix *по-/po-*. Chapter 6 summarizes the findings of the research and discusses the nature of the relationship between spatial and abstract uses of prefixes in more depth. Some differences between Czech and Russian are also considered within the broader context of the two verbal systems.

1.3 The experiment

Research for the dissertation involved elicitation of speech samples concentrated on the theme of motion through space from a sizable group of native speakers of Czech and Russian. (All data collection was carried out in St. Petersburg, Russia and Prague, Czech Republic. Thus, no consultants were émigrés, and speech samples were not influenced by second language acquisition in a non-native environment.) Native speaker consultants were presented with a set of approximately 50 short animated movies (out of 150 total films) featuring a single figure moving (e.g. walking, running, swimming, flying, driving, crawling, climbing, etc.) with respect to some background object(s). Films were typically brief and specifically designed to elicit each prefix with different kinds of motion. Thus, for instance, one film depicted a boy walking into a house, another showed a bird flying into a house, a third showed a fish swimming into a cave, etc. A few films were slightly longer and were intended to elicit a connected narrative. Consultants were asked to describe the scenes as they were watching them unfold, and then once again from memory. Responses were recorded on audiotape and later transcribed by native speakers of Czech and Russian who had not served as consultants.

Segments of this corpus, selected at random, were then reviewed, and all motion verbs (prefixed and unprefixed) were entered into a database along with other relevant factors (tense, aspect, prefix, base verb, prepositional phrases, adverbs, film viewed, first or second viewing, etc.) The database consists of 2049 verb tokens in Russian representing 21 different speakers and 2019 verb tokens in Czech representing 24 different speakers. The dissertation is based primarily on an analysis of the verbs in this database alone. When this did not provide sufficient data to draw conclusions, however, searches of the entire corpus of transcribed material were occasionally performed.

Most of the examples given in the dissertation are actual transcribed utterances of consultants. Where the examples are part of longer narratives, often only the piece of the utterance necessary to demonstrate the point is given, but where I deemed it important, I have always attempted to provide more than sufficient linguistic context to ensure a realistic presentation of the material. Examples which are not taken from the corpus of transcribed materials usually are not presented as whole sentences. Instead, verbs are given as infinitives. Where full sentence examples which do not originate from the corpus are introduced, they are marked with the superscript symbol †.

1.4 The data

Data relevant to the semantics of individual prefixes is presented within the chapters covering those prefixes. In this section I provide merely an inventory of the prefixes which appeared in the database and some data on the frequency of prefixation in Czech and Russian.

Table 1.1. Inventory of all Russian and Czech prefixes in database

Russian

prefix	tokens	% total
о-	8	<1%
вз-	16	1%
при-	19	1%
от-	20	1%
до-	36	2%
в-	51	3%
с-	53	3%
пере-	78	5%
по-	145	9%
за-	157	10%
под-	196	13%
про-	225	15%
вы-	244	16%
у-	298	19%
total	1546	

Czech

prefix	tokens	% total
pood-	2	<1%
popo-	3	<1%
na-	4	<1%
pod-	4	<1%
před-	7	1%
po-	9	1%
u-	11	1%
za-	13	1%
o-	14	1%
vz-	18	2%
roz-	23	2%
do-	55	5%
s-	60	5%
v-	99	8%
pře-	128	10%
při-	135	11%
pro-	149	12%
od-	220	18%
vy-	278	23%
total	1232	

Table 1.2. Inventory of Russian and Czech cognate prefixes only

Russian

prefix	tokens	% total
о-	8	<1%
вз-	16	1%
при-	19	1%
от-	20	1%
до-	36	2%
в-	51	3%
с-	53	3%
пере-	78	5%
по-	145	9%
за-	157	10%
под-	196	13%
про-	225	15%
вы-	244	16%
у-	298	19%

Czech

prefix	tokens	% total
o-	14	1%
vz-	18	2%
při-	135	11%
od-	220	18%
do-	55	5%
v-	99	8%
s-	60	5%
pře-	128	10%
po-	9	<1%
za-	13	1%
pod-	4	<1%
pro-	149	12%
vy-	278	23%
u-	11	<1%

Table 1.3. Percentage of prefixed verbs in entire database

	prefixed verb tokens	% total
Russian	1553 (of 2049)	76%
Czech	1211 (of 2019)	60%

1.5 THEORETICAL CONCEPTS AND DEFINITIONS

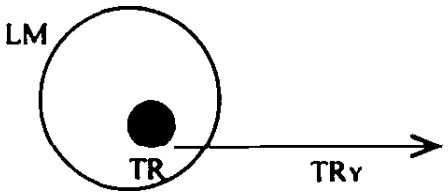
1.5.1 Relations profiled by prefixes: trajectors and landmarks

The description of prefix (and preposition) semantics presented in the following pages makes use of relational concepts which Langacker (1987) has called the TRAJECTOR (TR), the LANDMARK (LM), and the TRAJECTORY (TRy). A trajector and landmark together express a figure/ground relationship, such that the trajector is the element highlighted, or profiled, with respect to some landmark. The trajectory defines the path of motion of a trajector relative to the landmark. Prefixes in Czech and Russian, and prepositions (from which prefixes derive), are relational elements which, in spatial uses, can be described as defining a particular relationship between a trajector and a landmark. This framework has been used previously by Lindner (1983) and Brugman (1981) to describe the semantic networks of English verb particles and has been applied to Slavic verbal prefixes by Janda (1986) and Rudzka-Ostyn (1983a, b).

The current study focuses on prefixes in combination with verbs of motion. For this reason I have also included the concept of a trajectory. I do not, however, consider the trajectory to belong inherently to the prefix, since the fact of motion is always imparted by the motion verb itself. The concept of trajectory is, nevertheless, relevant and useful when discussing prefixes with motion verbs.

1.5.2 Schemata

Together a trajector, landmark, and trajectory define what I have called a SCHEMA. For example, certain prefixes may be described as representing a source containment schema, such that the landmark acts as a container for the trajector at the source point of motion:



Мальчик вы-шел из дома
A boy **out**-walked from the house
A boy walked out of the house

trajector	boy
landmark	house
trajector/landmark relationship	containment of trajector in landmark at source point of motion
schema	source containment schema

Figure 1.1. The source containment schema

It is important to keep in mind that schemata used to describe prefixes in this study are relevant *only* to prefixes with verbs of motion and do not necessarily describe either the spatial prototype of a prefix (although often they do) or non-spatial uses of prefixes. Schemata represent mental abstractions which are not tied to concrete spatial instantiations of elements. They function in human abstract reasoning processes and may apply to domains that are not necessarily spatial in character. Schemata represent recurrent patterns of experience in space, motion, and force, and are equivalent to what are known as IMAGE SCHEMATA in cognitive linguistics. In the words of Mark Johnson, they are "*not rich, concrete images or mental pictures, either*. They are structures that organize our mental representations at a level more general and abstract than that at which we form particular mental images" (1987:23-24). Schemata are thus spatial in character but, of course, are mental representations of space. (The assumption here is that all linguistic elements refer to mental representations of reality and not reality itself.) Some examples of image schemata which are relevant to prefixes are the CONTAINER SCHEMA, the CONTACT SCHEMA, the PROXIMITY SCHEMA, the BOUNDARY SCHEMA, and the SOURCE-PATH-GOAL (or simply PATH) schema. The spatial schema for a prefix with verbs of motion typically consists of a combination of two or more such basic image schemata. For instance the source containment schema given in Figure 1.1 combines a container schema and a source-path-goal schema.

1.5.3 Spatial vs. abstract prefixes

In the discussions which follow it will prove useful to distinguish between concrete (spatial) and abstract actions. Concrete actions may be defined as actions with an observable physical reality. Abstract actions, in contrast, involve mental and perceptual events, speech acts, or actions which otherwise include a primarily mental component. Abstract actions are experientially quite basic and may have observable effects but are nevertheless intangible or elusive as actions. For the purposes of the present study it is also important to distinguish between spatial and abstract prefixation. SPATIAL PREFIXES have nominal entities (which need not be explicitly expressed) as trajectors and landmarks:

(1) вы-мести сор из комнаты
*to sweep garbage **out** of the room*

trajector: garbage
landmark: room

ABSTRACT PREFIXES involve reference to the verbal action itself. In other words, prefix semantic features do not apply to entities (either concrete or abstract), but rather to actions or world states resulting from actions. This distinction will be discussed in more detail in later chapters, where it will be argued that it is preferable not to refer to trajectors and landmarks at all in cases of abstract prefixation. Trajectors and landmarks are a convenient tool for analysis of expressions concerning space, but it is typically counterproductive to search for abstract entities to fill these roles when attempting to comprehend abstract uses of prefixes. The important point for current purposes is simply that *the concrete or abstract nature of the verbal action itself does not determine the status of the prefix*. Thus a prefix may be used abstractly in combination with a concrete type of verbal action:

(2) вы-мести комнату
to sweep the room clean

Here the prefix does not refer to concrete entities at all, but rather to the (world) state which obtains as a result of the action of sweeping. Although abstract prefixation may accompany concrete actions, spatial prefixes do not combine with abstract actions.

A second point about this distinction is that trajector and landmark entities themselves may be quite abstract, but as long as they are nominal, or entity-like, in character, the prefix itself is not being used abstractly. In these cases the entire verb is used metaphorically:

(3) **vy**-padnout z paměti
to **out**-fall from memory
to forget

Thus, in example (3) the landmark, *paměť* 'memory,' is an abstract entity, but the prefix is used concretely in relation to the verb, *padnout* 'to fall'.

In analyzing prefixes, it is also important to distinguish the trajector and landmark for the prefix from the trajector and landmark for the expression as a whole. In concrete, spatial contexts the entire construction will have a trajector and landmark, referred to here as the CONSTRUCTIONAL TRAJECTOR and CONSTRUCTIONAL LANDMARK respectively. Where prefixes are used spatially, the prefix TR and LM will usually be identical to the constructional TR and LM. In example (1), for instance, the garbage is both the prefix trajector and the constructional trajector, and the room is simultaneously the prefix landmark and constructional landmark. In some cases, however, we will see that the prefix and the construction as a whole do not share the same TR and LM. In these cases failure to distinguish the prefix TR and LM from the constructional TR and LM leads to an incorrect interpretation of prefix semantics.

1.5.4 Some other useful cognitive concepts

As described in Section 1.2 above, linguistic categories can be expected to have PROTOTYPES -- senses or uses which are more central to the category as a whole, and which bear some relation to non-prototypical senses of a morpheme. The prototypical sense of a morpheme, taken together with non-prototypical senses, defines the extended SEMANTIC NETWORK of the morpheme. Although this study is concerned primarily with establishing the spatial prototype for several prefixes in Czech and Russian, evidence will be presented concerning the structure of the larger semantic network for some prefixes, including the nature of the links among non-prototypical senses of a prefix and the prototype. The concept of a RADIAL CATEGORY (Lakoff, 1987) is particularly useful in describing the extended semantic network of prefixes.

The defining feature of a radial category is simply that there are no general rules for producing non-central category members from the prototype. Rather, extensions from the prototypical sense are conventional and must be learned. Despite this fact, extensions are not random; they must be motivated in some way by the prototype. I will characterize this motivation as an EXPERIENTIAL CORRELATION or EXPERIENTIAL ASSOCIATION. I will also frequently use the term INFERENCE, which I consider to be a special case of experiential correlation, although it is not entirely clear when a particular relationship between senses should be characterized as one or the other. (It is important to note that, in theory, experience may involve typical or salient human perceptual and mental experience, or more strictly culture-specific experience. Prefix semantic networks in Russian and Czech do not, however, appear to involve any clearly culturally specific associations.)

Another defining feature of radial categories is that they may exhibit CHAINING, whereby non-central senses of a morpheme may motivate further extensions. A diagrammatic representation of a radial category might look something like this:

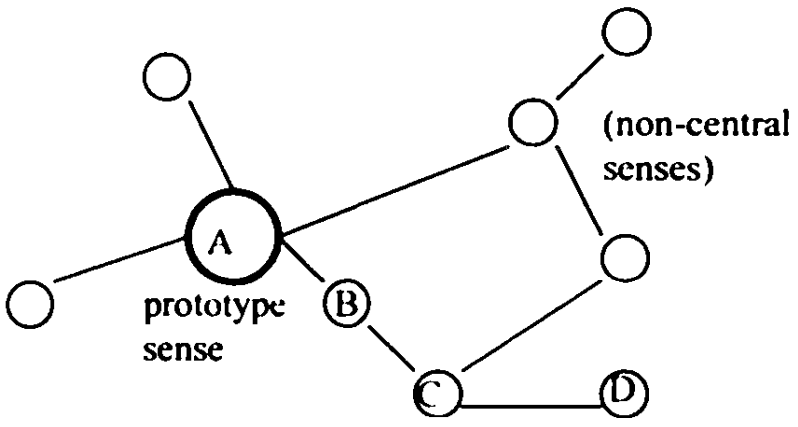


Figure 1.2. Schematic representation of a radial category.

Chaining often has the effect of completely obscuring the relationship between the prototype sense and some subsense (e.g. nodes A and D above are related through a chain of associations, but there is no obvious direct relationship between sense A and sense D). It will be argued here that the semantic networks of prefixes in Czech and Russian fit this description and thus represent radial categories.

1.5.5 Some concepts relevant to Slavic languages

1.5.5.1 Verbal aspect in Czech and Russian

One reason that prefixes have been the subject of study in Slavic languages is because they appear to serve sometimes as derivational morphemes, sometimes as purely inflectional morphemes, and frequently as both simultaneously. As derivational morphemes, prefixes derive new verbs from the base verbs to which they attach. As inflectional morphemes, prefixes create perfective verbs from imperfective simplex (base) verbs. Slavic languages are unusual in that aspect is primarily a grammatical category (i.e. is expressed inflectionally), whereas it is often expressed lexically in other languages. For example, in Russian and Czech it is frequently the case that for any given lexical meaning of a verb, there will be two forms to choose from: the IMPERFECTIVE and the PERFECTIVE. The addition of a prefix to an imperfective base verb is one way to produce such verb pairs:

(4) писать^{I} *to write*	>	на-писать^{P} *to write*
psát^{I} *to write*	>	na-psat^{P} *to write*

(Throughout this study where the aspect of a verb is relevant, a superscript *I* will be used to indicate an imperfective form and a superscript *P* will be used to indicate a perfective form.) In such cases the prefix is often considered semantically empty. In other words, it makes no semantic contribution to the verb, does not change the meaning in any way, and serves merely a perfectivizing function. This is sometimes called GRAMMATICAL PREFIXATION. In other instances the prefix may change the meaning considerably, in which case a new imperfective may be formed from the prefixed perfective by suffixation:

(5) писать^{I} *to write*	>	пере-писать^{P} *to rewrite*	>	пере-писывать^{I} *to rewrite*
psát^{I} *to write*	>	pře-psat^{P} *to rewrite*	>	pře-pisovat^{I} *to rewrite*

The two prefixed forms are then usually considered the proper imperfective/perfective pair. This is often referred to as LEXICAL PREFIXATION, since a wholly new verb has been derived.

An intermediate type of prefixation is often distinguished. In such cases prefixation modifies the course of the action in some way but does not produce a new lexical item (as evidenced by the lack of a derived imperfective). This is referred to alternatively as AKTIONSART, PROCEDURAL, or SUB-LEXICAL PREFIXATION:

(6) плакать^{I} *to cry*	>	за-плакать^{P} *to start crying*
brečet^{I} *to cry*	>	roz-brečet se^{P} *to start crying*

The relationship between aspect and morphological form is considerably more complicated than these simple examples suggest, but this brief discussion is sufficient for the purposes of the current study. With respect to motion verbs and the theoretical framework used in this study, I will define the perfective aspect in Czech and Russian as indicating that the trajector has traversed the entire trajectory and stands in the

designated relation to the landmark which holds at the goal of motion. Thus, for instance, for the source containment schema given in Figure 1.1, use of an imperfective verb (*вы-ходить*[I] 'to exit') makes no commitment as regards goal attainment by the trajector. A perfective verb form (*вы-йти*[P] 'to exit') indicates that the trajector has moved from inside to outside of the landmark (*дом* 'house') and, at this point in narration (and conceptualization), the trajector is outside of the house.

1.5.5.2 Verbs of motion in Czech and Russian

In Slavic languages the term MOTION VERB usually refers to a specific subset of all verbs expressing motion (approximately 11 verbs in Russian, slightly fewer in Czech). Verbs of motion are unique within the verbal systems of Czech and Russian because the normal aspectual opposition is further broken down. For each of these verbs there are two imperfective forms, the INDETERMINATE and the DETERMINATE. Determinate verbs may be defined as indicators of motion in a definite direction, occurring at a specific point in time. (This does not mean that motion is linear, but merely that the trajector is moving in an identifiable direction at the given moment.) Thus, determinates describe motion in progress. Indeterminate verbs are used more often to express non-progressive, and usually non-directional, motion, including aimless motion, motion in many directions, habitual motion, and the ability to engage in motion. For example, for the verb 'to walk,' Russian and Czech have the following indeterminate and determinate forms:

Table 1.4. Imperfective forms of Motion Verbs in Russian and Czech

	Indeterminate	Determinate
Russian	ходить[I] *to walk*	идти[I] *to walk*
Czech	chodit[I] *to walk*	jit[I/P] *to walk*[I]

Since the vast majority of examples of verbs of motion in the database involve directed motion, indeterminate verbs of motion do not play a large role in this study. Although the indeterminate/determinate distinction is not directly relevant to the research presented here, it is an important terminological distinction which will surface in some discussions of the data. Furthermore, the set of verbs included in the database was limited to those which participate in this subsystem in Russian, and to cognate verbs in Czech. This was simply a convenient way of deciding which forms to include in the database and does not represent a belief that Verbs of Motion proper are more likely to express basic spatial prefixation than other verbs which describe motion through space.

[I] Notice that the Czech determinate form is marked as both imperfective and perfective. Textbooks and grammars of Czech are inconsistent in the designation of Czech determinate verbs as imperfective or perfective in the past and future tenses. Traditionally it has been considered an imperfective form, although in Modern Czech it is quite clear that it may function as either an imperfective or perfective verb in the past and future tenses.

1.6 Previous work on prefix semantics

There has been a significant amount of research on prefix semantics in Slavic (in particular in Russian), and there are a variety of approaches to the subject. Previous research may be broadly divided into two categories. The first category is represented by studies which focus on listing a number of possible submeanings for a given prefix, often without attempting to identify a relationship among them and without designating a particular submeaning as primary or privileged in relation to others (for instance Bogusławski, 1963, and *Грамматика русского языка* 'Grammar of the Russian language', 1960, published by the Academy of Sciences, for Russian; Kopečný, 1962b, and *Příruční mluvnice češtiny* 'Reference Grammar of Czech', 1995, for Czech). The second trend is to seek an invariant meaning for a given prefix, from which all other meanings may be derived as contextual variants (for instance Flier, 1975; van Schooneveld, 1978; Gallant, 1979). More recently some studies (Janda, 1986; Rudska-Ostyn, 1983) have taken a cognitive linguistic approach to prefix semantics, rejecting both the notion of an invariant and of unrelated submeanings in favor of the notion of a prototype meaning. Other submeanings of a prefix are then generated from the prototype by rule-governed, motivated links. The current study has much in common with these works on a theoretical level but differs significantly with regard to method and conclusions.

Most attempts to uncover unity in prefix semantics have focused on one or a few prefixes, understandably, because the task of explaining the wide variety of uses of even a single prefix is immense. The principal exception to this is van Schooneveld (1978), who looks at the full range of Russian prefixes and prepositions in his attempt to demonstrate the semantic unity of prefixes. Very few studies have attempted a semantically based classification of prefixes in general, and none, to my knowledge, has done so cross-linguistically. Previous attempts to classify prefixes have focused primarily on classification according to the derivational and aspectual properties of prefixes, not on the semantics of prefixes per se, excepting the work of Hirschová (1978) on spatial prefixation in Czech. This dissertation looks at a significant number of prefixes and prepositions in Russian and Czech, attempting to analyze prefixes collectively as a semantic system. The principal studies on both the semantics and classification of Russian and Czech prefixes deemed relevant to the current study are reviewed in more detail below.

1.6.1 The search for an invariant

1.6.1.1 Flier

Flier (1975) discusses four Russian prefixes, *по-*, *про-*, *пере-*, and *об-*, which all share the semantic feature <+spanned>. The shared feature more or less corresponds to the classification <+path> used in this dissertation; in this sense Flier's work supports the notion that these prefixes belong to a single category as regards semantic classification. Nevertheless, Flier presents this, and two other features used to distinguish among the prefixes, <lateral> and <domanial>, as invariant features of prefixes, not as features which describe a central member of a category from which other members are derived. In particular, Flier's invariant description of each prefix in

terms of these features is not meant to be limited to spatial uses but is presumed to be descriptive of abstract uses of the prefixes as well. He assumes that features are simply interpreted metaphorically in non-spatial realms. In the current work, prefix classification and semantic features are presumed to be valid only for spatial uses of prefixes. The relationship of spatial meanings to abstract uses is shown to be more complex than metaphorical interpretation of invariant (spatial) features would suggest. In addition it will be suggested that the features <lateral> and <domanial> are not accurate descriptions of the semantic distinctions made by these prefixes in space. Flier's choice of features is a reflection of the fact that he is trying to accommodate both spatial and abstract uses of prefixes with a single set of features. This leads to insufficient specificity in the actual spatial features defining the prefix prototypes. This problem is examined in more detail in Chapter 4, when Path prefixes are under discussion.

1.6.1.2 van Schooneveld

Van Schooneveld (1978) attempts to find semantic unity in both prefixes and prepositions simultaneously, since he considers prefixes to be a special contextual variety of prepositions. To this end, modeling his approach after Jakobson's treatment of case semantics, he creates a hierarchy of distinctive features which exemplify the degree of alienation of a modifier (i.e. prepositional object, or here landmark) from that which is modified (i.e. trajector), including the features <dimensionality>, <duplication>, <extension>, <restrictedness>, and <objectiveness>. Once again, the attempt to unify all uses of prefixes, abstract and concrete, with a single set of invariant features forces the invention of excessively abstract features. The addition of prepositions only makes the task more impossible. Such abstract meanings may well allow all manifestations of a prefix or cognate preposition to be subsumed under one definition, but they cannot, in fact, distinguish properly among different prefixes.

Some examples will help to demonstrate the difficulties inherent in such an approach. Van Schooneveld distinguishes the preposition *за* from the preposition *на* according to the presence of the feature <duplication>. According to van Schooneveld, "duplication signalizes that always two perceptions, and not one amalgamated perception" (1978:21) result from the modification operation. *На*, in contrast, signals (perceptual) amalgamation between the prepositional object and the modified entity. It is probable that this suggestion stems from the fact that in spatial examples *за* indicates a proximal relation between two entities, whereas *на* indicates a contact relation. Nevertheless, amalgamation does not seem to be an appropriate distinction, given that even in spatial examples, such as *книга лежит на столе* 'the book is lying on the table,' humans do not perceive the book and the table as being truly amalgamated in any way. Van Schooneveld cannot simply say that *на*, in this context, designates a contact relation between the book and the table because <contact> is not abstract enough to include all possible uses of *на*. In extended and abstract uses of prepositions, however, there is no way to verify whether there is, in fact, perceptual amalgamation of the entities or not. Thus, for the example *он держал ее за руку* 'he held her by the hand' (1978:26), van Schooneveld insists that there is no perceptual amalgamation of the sort implied by *на*, simply because the preposition *за* is used and <duplication> is the

feature which distinguishes *за* from *на*. To justify this, he claims that "the hand is seen as a separate moment in the process of the perception of the described situation, rather than as separate from *он* ['he'] or *ее* ['her']". In other words, the perceptual distinctiveness posited of prepositional object from the modified entity has suddenly come to mean a temporal distinctiveness in perceptual processing. Similarly, a lack of perceptual amalgamation is supposed to account for abstract examples such as *я пью за ваше здоровье* 'I drink to your health,' in which a separation of the prepositional object from modifier produces (for some reason) the interpretation of prepositional object as the goal of the action (1978:26).

Even more problematic is van Schooneveld's explanation for the usual spatial interpretation of *за* as 'behind, beyond'. This interpretation must be realized somehow through the abstract distinctive feature of duplication. The use of *за* to mean 'behind', according to van Schooneveld, is entirely conventional, arising from the fact that the speaker conceptualizes the (perceptually) distinct object as located on the far side of the modified entity from him/herself. Such an explanation might be acceptable for deictic uses of *за*, but does not explain cases where the *behind* relation refers to an absolute orientation imposed on the modified entity (i.e. *дерево стоит за церковью* 'the tree stands behind the church' does not imply that the speaker/observer must be in front of the church). Here van Schooneveld must resort to the argument that "the perception relation going in a straight line from the observer via the referent of the prepositional object to the modified is the simplest one and hence the easiest to refer to and most likely to be referred to" (1978:28). By implication, *перед* 'in front of' is a rather more difficult morpheme, and indeed, to comprehend it the feature <objectiveness> must be included. This feature allows the prepositional object to be maximally distant from the observer, despite the fact that this reverses the normal or expected order of perceptual distance. In other words, *перед* does not mean 'in front of', but rather allows this interpretation, whereas *за* does not.

Given the state of current research into cognitive phenomena, it seems more efficient to suggest that humans experience a particular bodily orientation and tend to impose that orientation on other objects in their environment. It is easier to assume that *за* does indeed mean 'behind' and *перед* means 'in front of' in simple spatial contexts, regardless of what other meanings they may take on in abstract situations. More importantly, van Schooneveld's arguments provide an excellent example of the extensive degree of abstraction that is necessary to produce an invariant definition of all uses of a morpheme, both concrete and abstract.

Nevertheless, as with all of the attempts at defining an invariant meaning, van Schooneveld makes a number of insightful observations concerning prefixes. For instance, the feature <extension> is described as indicating a separation of certain qualities of the prepositional object that are not relevant to its relationship with the modified object from those qualities which are exclusively due to that relationship. For this reason "the prepositional object appears as minimally affected by the other elements of the situation described and as characterized by the qualities it retains afterwards, in the eyes of a more general 'ulterior' observer, who continues to observe after the situation...terminates" (1978:32). Thus, he states that in the expression *он шел по улице* 'he walked along the street,' the street is simply an "orientational medium but

remains otherwise unaffected by the process" (1978:34). The observation that the preposition *по* indicates that certain eternal properties of its complement are in focus is a subtle but important one, which is further discussed in Chapters 2 and 5, although it is presented here as arising from the interaction of two prominent spatial features, <contact> and <contour>.

1.6.1.3 Gallant

As with Flier and van Schooneveld, Gallant (1979) also attempts to describe the meaning of a Russian prefix (*вз-*) with invariant features. Gallant, in fact, views his work as somewhat of an extension to Flier's analysis of spanning prefixes. He suggests that prefixes do not add meaning to verbs, but rather specify features which are present in the base verb itself. This viewpoint is not unusual in the case of empty (purely perfectivizing) prefixes, which, according to some accounts, result from semantic overlap between the prefix and the base verb. It is a rather unusual viewpoint, however, with regard to lexical prefixation, i.e. prefixation which derives a new verb. Gallant's assertion does not seem so radical, though, if one considers what he means by specification of semantic features contained within the verb. These features are the variable features of a verb -- things generally unspecified in the verb itself, but clarified by context. If one acknowledges that such variable features should indeed be considered part of the semantic endowment of the base verb, then it is reasonable that the prefix would be seen not as deriving a new verb, but rather as specifying a more precise meaning of the verb under consideration. It is also obvious that semantic features of a prefix must be relevant to the verb in some way, otherwise the combination would not be exercised. It is questionable, however, whether the variable features should indeed be considered as contained within the verb itself, as they are at best merely *potential* features which may be relevant to a very large number of verbs (e.g. for the verb *пере-писать* 're-write,' is the feature <repeat> contained within the verb *писать* 'write'?)

Gallant critiques approaches (in particular, Bogusławski, 1963, and Rutkowska, 1967) which enumerate unrelated submeanings of prefixes, not for being inaccurate in their descriptions of prefix semantics, but rather for the tendency to include the meaning of the entire verb phrase within the prefix itself (1979:66). Indeed, it is often the case that the prefix is not sufficiently differentiated from its linguistic context, and this is one reason for the apparently large number of meanings posited for some prefixes. Nevertheless, the research presented here suggests that in some instances context provided by the verb phrase does, in fact, penetrate the semantic network of the prefix and become part of its meaning.

More pertinent to the current study are the semantic features which Gallant uses to define prefixes. He suggests that all prefixes make reference to an abstract conceptual framework, which he describes in terms of abstract geometry. The framework consists of two axes, one horizontal and one vertical, plus potential planes and volumes which derive from these axes. Each prefix expresses one or more frame features (<vertical> or <horizontal>, also potentially <plane>, plus Flier's features <lateral> and <domanial>) and one relational feature (<transgression>, <application>, <spanned>, etc.). The latter relates the action to the prefix framework, thus creating a limit. *Вз-* is

designated <+horizontal, +transgression>, such that the prefix indicates transgression of a horizontal limit. Gallant is careful to note that horizontal and vertical are not literal, spatial features, but evaluative ones. Although he admits that more research is required to ascertain the real significance of the horizontal/vertical distinction, he states that the horizontal feature "represents the axis of natural order...; the vertical represents the axis of conventional relations" (1979:60). It is not obvious, however, that there is a clear-cut distinction between natural and conventional limits, or that there is any justification for representing them on scales which are inherently different in some (ambiguous) way. In any case, since *вз-* is distinguished by the features <+horizontal, +transgression>, according to Gallant, verbs prefixed with *вз-* can be classified as violating a literal or figurative surface or threshold. It will be argued in the final chapter of this dissertation that all prefixed verbs may indicate transgression of an abstract threshold. Accordingly, these features cannot distinguish *вз-* from any other prefix. It will also be argued that the evaluative aspect of prefixes cannot be derived from abstract features (e.g. here, the prefix frame features) but rather must be derived from the original spatial meaning of the prefix or else must be purely conventional.

While Flier at least suggests that spatial uses of prefixes are basic, Gallant has argued in particular against the notion that *вз-* indicates 'upward motion', since this meaning is only manifested with motion verbs. He suggests that this interpretation is merely an effect of applying the <+transgression> feature to an actual horizontal surface. One could, however, argue precisely the reverse -- that motion upward off a surface may be abstractly interpreted as departure from some limit or canonical state. (The frequent reference to violation of a (potentially metaphoric) surface is, in fact, quite suggestive of a basic spatial meaning, since it is unclear why any abstract uses would otherwise be associated with the notion of a surface as opposed to a threshold, for instance.)

In any case, once again, a single set of abstract features is assumed to be sufficient for description of both concrete and abstract uses of prefixes. Gallant himself notes that invariant semantic features must be very abstract, since a given morpheme typically has a wide range of uses. It is argued here that any semantic features abstract enough to serve as an invariant cannot properly distinguish among prefixes. Furthermore, even in spatial uses of prefixes, where the features <horizontal> and <vertical> might be interpreted literally, these do not appear to be the appropriate features for distinguishing among prefixes. In order to ascertain the appropriate parameters for distinguishing among prefixes, the spatial uses of prefixes must be examined separately from abstract uses.

1.6.1.4 Dobrušina

More recently Dobrušina (1997) has attempted to give an invariant definition of the prefix *из-*. She identifies three very general characteristics of the prefix *из-*: 1) It indicates a change of some kind in an actant (usually the direct object of a transitive verb or the subject of an intransitive verb); 2) The change need not reflect the intended aim of the action; 3) The change manifested in the actant is qualitatively opposed to the original state of the actant. Dobrušina sees this third characteristic of *из-* as the defining feature of the prefix and explains that, in effect, whether or not one may perceive

developmental stages in the process of change, the prefix *из-* is concerned only with absolute boundaries between one stage and the next. Thus *из-* indicates the existence of mutually exclusive initial and final states. In fact, it is doubtful if this can be considered a defining criterion for a prefix. All prefixes indicate some kind of change, and all change can be described as defining a boundary between two mutually exclusive states. Dobrušina at least partially recognizes this by indicating that, when there is a gradual progression from the initial state to the final state, *из-* indicates the change only at the very last stage of this process, such that the mutually exclusive initial and final states represent extreme points on a scale. Nevertheless, changes in general do not have inherent boundaries demarcating mutually exclusive states outside of subjective human interpretation, and in many cases several reasonable boundaries separating mutually exclusive states can be recovered.

In any case, Dobrušina formulates an invariant meaning for *из-*, which she states in the following way: Some actant is no longer subject to the effects of an action (named by the base verb) either because the actant has already attained the most extreme state which can result from that action, or because the action defines only two possible states, i.e. the action either took place, or didn't take place. These two options immediately highlight the problem with this definition. Why should the base verb *пугать* 'to frighten' define two mutually exclusive states, such that, as Dobrušina points out (1997:123), if one has begun to get a little bit frightened, then one is already *ис-пуганный* 'frightened,' but not yet necessarily *на-пуганный* '(thoroughly) frightened'? In other words, it is clearly possible to indicate degrees of fear, so why doesn't *ис-пугать* mean 'frightened to the most extreme extent'? In contrast, why does *из-рисовать доску* 'to cover the entire blackboard with writing' not simply indicate a change from a clean blackboard to one which has some drawing on it?

Although there is validity to the distinctions made by Dobrušina, especially regarding the attainment of (what is perceived as) an exhaustive state of some sort, the invariant description cannot ultimately distinguish *из-* from any other prefix. For instance, she explains the difference between *из-лечить* 'to cure' and *вы-лечить* 'to cure' as one of focus on two extreme, mutually exclusive states of sickness and health, with no attention to the process which links them in the former case, versus focus on the transition between two states, which are not necessarily viewed as extremes in the latter case. This observation concerning the difference between the two verbs may be quite accurate, but it cannot be generated by the invariant definition given for *из-*. What is necessary is an explanation of why specific associations or interpretations attach to the final state with *из-* and not with other prefixes, which can also indicate extreme and/or mutually exclusive states of one kind or another.

1.6.2 Cognitive approaches to prefix semantics

Janda (1986) examines the semantics of four Russian prefixes, (*за-*, *пере-*, *до-*, *от-*) in depth, and links all the uses or submeanings of each prefix to a single schematic prototype in cognitive space, which she defines as human mental conception of space (cf. image schemata). As in the current study, she uses Langacker's concepts of trajector, landmark, and trajectory to comprehend prefix meaning. Her study follows the format of earlier work by Lindner (1983) and Brugman (1981) on English verb

particles, and by Rudzka-Ostyn (1983a, b) on verbal prefixation. In Janda's study a central meaning is posited for a given prefix and is described in terms of a schematic (cognitive spatial) diagram rather than features. Certain transformations are then performed on the original diagram in order to derive schemata representative of other uses. Transformations include such things as a change in the dimensionality of the landmark, a change from a single to a multiplex trajector, identification of the trajector with the trajectory or with the landmark, and so on.

Janda's work represents a significant advance in the understanding of prefix semantics in Russian, demonstrating (by means of transformations) the importance of linguistic context in prefix interpretation. Although this approach differs substantially from one which posits invariant features for prefixes, it does, nevertheless, share a prominent aspect with them. The cognitive spatial diagrams are abstract diagrams, meant to subserve both spatial and abstract uses of prefixes, just as invariant features were intended to account for both spatial and abstract uses of prefixes simultaneously. Thus, although Janda assumes that spatial uses of prefixes are primary, according to her analysis abstract uses can only be metaphorically derived from the spatial uses. The schematic diagrams must therefore serve as the basis for both spatial and abstract uses. It will be argued here that such diagrams do not fully describe the nature of the relation between spatial and abstract uses of prefixes. As with all accounts which attempt to explain concrete and abstract uses with a single mechanism, the appropriate distinguishing features of prefixes cannot be correctly identified by the schematic spatial diagrams alone.

A second aspect of these cognitive studies which differs from the approach taken here is the method for determining which meaning, or schema, of a prefix is basic. In previous studies a single basic spatial meaning is asserted, apparently on the basis of intuition. Although it may at first seem obvious that a particular spatial use of a prefix (or verb particle) is basic, in fact there can be a number of spatial manifestations of a prefix or verb particle, and it is not entirely clear which version is most central or what criterion should be used to make such a judgment. For instance, Janda assumes that the prototypical schema for *за-* is based on a submeaning she glosses as *deflection* (*за-йти в магазин* 'make a side trip into a store'). This is an entirely reasonable assumption, since *за-* with motion verbs is commonly used to describe a side trip somewhere off a main or intended route. After examining the data I collected on the spatial uses of *за-* and its cognate preposition, however, I have found that, in terms of the direction of semantic extension, *deflection* is most likely a secondary use which derives from another spatial use of *за-* with motion verbs, namely, *to go behind/beyond (an object)*: *за-йти за дом* 'to go behind the house'. This meaning does not inherently carry any sense of deflection from some intended course of motion or canonical goal. Choosing 'behind' as the basic meaning of the prefix in terms of semantic origin affects the understanding of how various submeanings of the prefix are interrelated. In other words, choosing what is synchronically, perhaps, a cognitively primary meaning as the spatial prototype may not necessarily produce the best analysis of the relationships among the uses and submeanings of a morpheme.

Similarly, Janda assumes that the basic meaning of *пере-* involves the transgression of two boundaries located on a one-dimensional landmark (the *transfer*

submeaning: *пере-нести вещи в другую комнату* 'to move/transfer things into another room'), whereas the submeaning *over* (*пере-йти через гору* 'to go over the mountain') is considered derived by transforming the landmark into a three-dimensional object. The analysis presented here suggests that both of these spatial uses are equivalently basic and need not be derived from one another. In general, the method for determining the prototypical spatial meaning of a prefix in this study differs from similar cognitive studies by considering both the semantics of cognate prepositions and the relative frequency of purely spatial uses of prefixes as reflected in the database.

1.6.3 Classification of spatial prefixes

In terms of prefix classification, the previous work on Slavic prefixes which is most similar to the current study is that of Hirschová (1978). Hirschová presents a spatial semantic analysis of Czech prefixes based on the combination of various prepositional phrases with prefixed verbs expressing spatial meanings or in which the spatial meaning is easily uncovered. Expressions which Hirschová considers as preserving spatial elements, however, are often considered fully abstract (i.e. non-spatial) in this study. For instance, Hirschová suggests the notion of proximity can be detected in the preposition *o* 'about' in the expression *vyprávět o dovolené* 'to tell about (one's) vacation'. As a result of such judgments, many quite abstract uses of prefixes and prepositions were included in the study, obscuring the basic spatial meanings which were being explored. Expressions with prefixed verbs and prepositional phrases analyzed by Hirschová were excerpted from the *Slovník spisovného jazyka českého* (*The Dictionary of Literary Czech*).

After analyzing 2330 dictionary examples, Hirschová classifies prefixes and prepositions as expressing either a spatial source, intermediate element, or goal (*vychodisko, prostřední člen, cíl*). This classification is essentially identical to the <source>, <path>, <goal> distinction made in the present work, although Hirschová classifies some prefixes and prepositions (*mezi, pod-*), here considered as belonging primarily to the Path category, as Goal elements. Hirschová further classifies the prefixes graphically with arrows that indicate motion and relation to a source, path or goal element (cf. landmark). To a large extent these graphic classifications can be viewed as expressions of the features given here as <proximity>, <contact>, and <contain>, although the prefixes are never explicitly grouped in such a way. Finally, Hirschová identifies prefixes and prepositions as expressing either motion along a closed curve (*o(b)-, o*), centrifugal motion (*roz-*), centripetal motion (*s-, s*), and linear motion (all remaining prefixes and prepositions). The closed curve may be taken as the equivalent of the feature <encircle> used in this study, but otherwise Hirschová does not present potential correlates of the tertiary spatial features <direct> or <contour>, which are posited for Path prepositions and prefixes in the current work.

Beyond certain aspects of the classificatory system, however, the similarities between the current study and Hirschová's are minimal. Hirschová explores the possibilities for combining prefixes expressing source, intermediate element, or goal with prepositions of these same designations and concludes that expressions with source and goal prefixes come in two structural varieties, one which allows only a corresponding source or goal preposition (*od-pojít vagón od vlaku* 'to disconnect a car

from a train'), and one which has a secondary slot for the expression of the opposing relation, which may or may not be filled (*od-stoupit od okna (k dveřím)* 'to move away **from** the window (**toward** the door)'). Prefixes expressing a relationship to an intermediate element are analyzed similarly, although there are more possibilities (e.g. the prefix may occur obligatorily with only a corresponding intermediate preposition, with an intermediate preposition and optional source and goal prepositions, with a source preposition and optional intermediate and goal prepositions, etc.) Hirschová makes no further attempt to distinguish the spatial semantics of individual prefixes on the basis of possible combinations with prepositions.

Finally, Hirschová does not examine the relation between spatial and non-spatial uses of prefixes, although she suggests a preliminary classification of non-spatial prefixes into two groups: those in which a spatial meaning can be detected, and those in which it cannot, due to semantic bleaching of the prefix. No attempt is made to describe the relation between the proposed spatial distinctions and the non-spatial uses. Although Hirschová considers the first group to behave in a manner similar to spatial prefixes and prepositions in terms of possible prefix/preposition combinations, she questions whether there is any discernible regularity in prefix/preposition combinations for the latter group. This represents a recognition that fully abstract uses of prefixes cannot be fruitfully classified according to parameters which are inherently spatial, a conclusion which is discussed in the final chapter of this dissertation.

1.6.4 Previous work on prefix semantics: summary

The approach taken in this dissertation shares one basic assumption with all of the studies reviewed above -- the various uses, or submeanings, of prefixes are assumed to be related to one another in some way. This work differs from previous work in the presentation of the nature of the relationship among submeanings. As we have seen, a major problem with seeking an invariant meaning for prefixes is that, in order to accommodate all uses of a prefix, the invariant meaning must be so abstract that it cannot distinguish among different prefixes. The cognitive approach represented by Janda attempts to circumvent this problem by identifying one central sense for each prefix as a prototype and deriving other senses by various transformations to the prototype. Each prototype, however, may be subjected to the same set of transformations, suggesting that the prototype configurations are also incapable of distinguishing among prefixes and, in fact, function as invariants.

In addition, none of the works cited above which attempt to find unity in prefix semantics distinguishes properly between the basic spatial meaning of a prefix and abstract uses. Instead, both spatial and abstract uses of prefixes are considered simultaneously in constructing a semantic model, whether it is presented as an invariant or prototype. In some cases this conflation of spatial and abstract prefixes is intentional on theoretical grounds. In other cases the conflation is accidental. Although the cognitive approaches appear to consider spatial prefixation as basic, it was noted in Section 1.5.3 that use of a concrete, spatial verb does not necessarily imply a concrete use of a prefix. It is, in part, the fact that previous studies do not distinguish between the basic spatial sense of a prefix and other senses (which may well be used in spatial contexts) that accounts for the difficulty encountered in describing the semantic unity of

a prefix. One of the assumptions of the current study is that the appropriate parameters for distinguishing among prefixes can only be ascertained by examining the basic spatial uses of prefixes separately from abstract uses. Any attempt to consider both spatial and abstract uses as belonging to the same level of semantic analysis will miss the precise nature of the semantic distinctions among the prefixes.

Chapter 2. A typology of Czech and Russian prepositions

2.1 Some preliminary remarks

Assessment of the basic spatial prototypes of prefixes in Czech and Russian in this study was accomplished primarily by examining the frequency of prepositional phrase types in combination with prefixes. In order to conduct such an assessment, it is first necessary to have a comprehensive description of the spatial prototypes for prepositions. Prepositions generally present a clearer picture of spatial relations because they are directly associated with overt and obvious landmarks in all cases, which is not necessarily true for prefixes. This chapter is therefore concerned with outlining a typology of prepositions used with motion verbs in Czech and Russian.

The spatial meaning of prepositions, in turn, is assessed by examining the frequency and properties of the landmarks which serve as complements of these prepositions. Prepositions and their complements (landmarks) do not simply function independently of one another in the construction of linguistic meaning. In the following discussion, prepositions are described as PROFILING, or highlighting, certain aspects of their landmark complements. Landmarks, in turn, are described as having various CONSTRUALS (depending on what aspect of a landmark is profiled). Inference will be shown to play a role in determining what a preposition is profiling, and thus, how a landmark is construed.

2.2 Typology of prepositions

2.2.1 Standard classifications

Textbooks of Czech and Russian typically classify certain prepositions which occur with motion verbs according to two sets of parameters, which I will call DIRECTIONAL features and RELATIONAL features. Directional features describe the direction of the trajectory of motion, and relational features describe the (initial or final) relationship of the moving figure (trajector) to the landmark. Russian and Czech have three prepositions[1] which describe the trajectory of the moving figure in terms of the direction of origin of motion (SOURCE PREPOSITIONS, which are designated <+source>), and three prepositions which describe the trajectory in terms of the direction of destination of motion (GOAL PREPOSITIONS, which are designated <+goal>), as shown in the chart below. In addition, each of these prepositions may be classified according to the kind of relationship which holds at the source or goal point in the trajectory: proximity of the trajector to landmark (<+proximity>), contact of the trajector with the landmark (<+contact>), or containment of the trajector within the landmark (<+contain>)[2]:

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[1] Modern Czech has only two common distinct Source prepositions, *od* 'away from' and *z* 'out of' (see Table 2.1), due to conflation of the two dental fricatives, *s* 'off of' and *z* 'out of' (Trávníček 1935). *S* is maintained as distinct only in the meaning 'down off of', which expresses both source and contact, but also imposes further limits on the direction of the trajectory.

[2] The Goal prepositions *на* and *в* in Russian and *na* in Czech are distinguished from homophonous locational prepositions with the same contact/containment designation by the fact that they require a

Table 2.1. Classification of Source and Goal[3] prepositions in Russian and Czech according to directional and relational features

	Russian		Czech	
	Source	Goal	Source	Goal
Proximity	от	к	od	k
Contact	с	на	z (s)	na
Contain	из	в	z	do

2.2.2 Extension of the standard classification

The standard classification given here will be used throughout this work, although it will be extended in two new ways in order to accommodate a variety of other prepositions that combine with verbs of motion in Czech and Russian. The remaining prepositions describe the relationship of the moving figure to the landmark during the course of motion rather than at the source or goal point of motion. These prepositions will be referred to as PATH PREPOSITIONS, since they describe the relationship of trajector and landmark throughout the path which links the source and goal points of the trajectory. Path prepositions in Russian include *мимо* 'by, past', *вдоль* 'along', *вокруг* 'around', *через* 'across, over', *по* 'on, along', *сквозь* 'through', *под* 'under', *над* 'above, over', *за* 'behind, beyond', *перед* 'in front of' and *между* 'between, among'. Czech path prepositions include *kolem* 'by, past; around', *podél* 'along' *přes* 'across, over', *po* 'on, along', *skrz* 'through', *pod* 'under', *nad* 'above, over', *za* 'behind, beyond', *před* 'in front of', and *mezi* 'between, among'. (In the absence of a preposition, nominals in the instrumental case (INSTR), and in the accusative case (ACC) in combination with certain prefixes, may describe a path relation in both languages as well, as discussed later.) Most of these prepositions also function as locational prepositions. The path interpretation arises through the presence of a non-static verb. When these prepositions are combined with verbs of motion, the preposition is interpreted as describing the path, or trajectory, of the moving trajector over time relative to the landmark.

The second extension of the standard classification involves categorizing the Path prepositions according to two additional sets of spatial features. The first set is composed of the familiar trajector/landmark relational features <proximity>, <contact>, and <contain>. The second set of features is termed here TRAJECTORY ORIENTATION, since these features apply only to prepositions which describe extended trajectories in space (i.e. Path prepositions). The trajectory orientation features are <direct>, <contour>, and <encircle>. <Direct> simply refers to a trajectory which describes a direct line in space, regardless of the shape of the landmark. <Contour>, in contrast,

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complement in the accusative case rather than the locative case. Location prepositions can be classified in a similar manner but are not considered here, since this study focuses on motion.

[3] There are, in fact, additional Goal Proximity prepositions: Russian *под* 'below' and *за* 'behind,' and Czech *nad, pod, před,* and *za* ('above', 'below', 'in front of', and 'behind'). These prepositions simply add specificity to the notion of proximity.

describes a trajectory which is determined by the shape (contour) of the landmark itself. <Encircle> refers to a trajectory which entirely circumscribes the landmark.

These two sets of features serve to distinguish Path prepositions in terms of the *origin* of the semantic oppositions they encode. As we will see, however, they are not necessarily themselves features of the prototype meaning of the prepositions, since certain features interact to produce more prominent distinctions (features). In fact, at first glance the Path prepositions do not seem to fall neatly into any pattern according to these two sets of parameters, in part because of such interactions. Path prepositions profile properties of trajector(y)/landmark relations over an extent of space (and time) rather than at points; they are, therefore, significantly more complicated than Source/Goal prepositions and less readily amenable to feature analysis by casual observation. The additional set of trajectory orientation features reflects this increased complexity. Nevertheless, the original features can be detected by examining the frequency with which prepositions occur with various types of landmarks. Thus, in order to effect a classification of Path prepositions, the relationship between prepositions and the landmarks that occur with them must be explored.

2.2.3 Overview of the classification of Path prepositions

The chart below presents a simplified overview of Path preposition classification according to the two sets of spatial features described in the previous section. It is important to emphasize that, for initial purposes of classification, many complicating factors have been left out of this chart. Although this classification is intended to yield prototype descriptions of each preposition, this chart provides only a schematic introduction to the relevant parameters for determining the prototype meaning. The chart was constructed according to the frequency with which landmarks of various shapes, sizes, locations, and functions combine with the following prepositions to describe motion events. Some Path prepositions have been left out of this chart, since it is based on the most common prepositions in the database which exemplify TR/LM relational features and trajectory orientation features. Some additional prepositions are given in parentheses, but in practice these prepositions were comparatively rare in the data base. Omitted prepositions will be discussed later.

Table 2.2. Classification of Path prepositions in Russian and Czech

		Trajector/landmark relation		
Trajectory orientation		Proximity	Contact	Contain
Direct:	Russian:	мимо (над, под...)	через	через (сквозь)
	Czech:	kolem (nad, pod...)	přes	INSTR (skrz)
		'past' ('above', 'under')	'across'	'through'
Contour:	Russian:	вдоль (над, под...)	по	по/через/над etc.
	Czech:	podél (nad, pod...)	po	INSTR
		'along' ('above', 'under')	'along on'	'through'
Encircle:	Russian:	вокруг	вокруг	
	Czech:	kolem	kolem	
		'around'	'around'	

2.3 Path prepositions and landmarks: frequency patterns in the data

The justification for the classification of Path prefixes presented in the previous section comes from an examination of the frequency of certain types of landmarks with each preposition. Preposition/landmark combinations were analyzed according to the size and shape of the landmark, the relevant dimension in which motion occurred relative to the landmark, and the status of the trajector/landmark relationship during motion. As a result of this analysis, preferred or prototypical landmarks can be described for each preposition. For instance, it is clear that some prepositions preferentially indicate trajector interaction with landmarks in the *short dimension* of the landmark, while others preferentially interact with the *long dimension* of the landmark. This, in turn, is reflected in the frequency of landmarks of certain general shapes occurring with each prefix. Some prepositions occurred almost exclusively with landmarks which function as surfaces for motion, whereas others rarely occur with such landmarks. The most common kind of landmark occurring with a prefix is considered the prototypical landmark for that prefix.

2.3.1 Prototypical landmarks for Path prepositions

The Russian prepositions *мимо* and *через* and the Czech prepositions *kolem* and *přes* are far more likely to occur with long, narrow objects as landmarks than with objects of relatively even dimensions. Furthermore, the trajectory will almost always pass or cross the landmark in the narrow dimension. Thus, a typical landmark for these prepositions is a road, a tree, or anything with a clearly defined short dimension.[4] *Мимо* and *kolem* also always exhibit a non-contact relationship to the landmark, with the landmark typically located laterally to the trajector (that is, to the side, not above or below: cf. *идти мимо дерева/jít kolem stromu* 'walk past the tree'). *Через* and *přes*, in contrast, occur most frequently with landmarks which act as surfaces for motion and are, thus, in contact with the trajector and located below the trajector (*идти через дорогу/jít přes ulici* 'walk across the street'). Nevertheless, Russian *через* also occurs quite freely with landmarks which act as containers for a trajector (e.g. a tunnel, an arch, water) and, in this case, shows no preference for long, narrow objects or crossing in the short dimension (*ехать через туннель* 'drive through a tunnel').

Landmarks for *вдоль, по, podél,* and *po* typically have at least one long dimension, with the length of other dimensions being irrelevant (e.g. a road, a forest). The trajectory passes or crosses the landmark in the long dimension. Thus, the trajectory described by these prepositions is often perpendicular to the trajectory described by the prepositions *мимо, через, kolem* and *přes* in relation to the dimensions of the landmark:

(1) a. Змея ползет через дорогу vs. b. Змея ползет по дороге
A snake is slithering across the road *A snake is slithering along the road*

[4] The notions of long and short dimension are relative to the size of the trajector. For a human figure, a road or a tree trunk has a clearly defined long and short dimension. For the scale of an insect, a small twig would also serve as a satisfactory example of a landmark with a long and short dimension.

Вдоль and *podél* most often describe non-contact relations between trajectors and landmarks, which are also usually located laterally with respect to one another (*идти вдоль реки/jit podél řeky* 'walk along the river'). Landmarks with *по* and *po*, on the other hand, are usually support surfaces for motion and are thus always in contact with the trajector and located below it (*идти по дороге/jít po ulici* 'walk along the road'). Russian *по*, nevertheless, may sometimes occur with container landmarks (*ехать по туннеле* 'drive along in a tunnel').

Landmarks for the prepositions *вокруг* and *kolem* 'around' may be of any size or shape, provided they are bounded in at least two dimensions and, thus, may be circumnavigated by the figure, which traces the perimeter of the landmark. Neither the Russian nor the Czech preposition is sensitive to landmark status as a support surface for the trajector versus landmarks located laterally to the trajector.

Finally, the Czech instrumental case, in this study, is reserved primarily for expression of container landmarks without regard to the size and shape of the landmark (i.e. it occurs equally frequently with containers possessing a short dimension, such as arches, or those possessing a long dimension, such as tunnels: *jít branou*-INSTR 'go through the arch'/*jet tunnelem*-INSTR 'drive through the tunnel').

2.3.2 Some complications

In the previous section the preferred landmarks for a number of Path prepositions in Russian and Czech were described. Most of these prepositions, however, can, and do, combine with non-prototypical landmarks. The interpretation of these expressions provides crucial evidence concerning the significance of the prototypical landmarks themselves and for the determination of preposition prototype meaning.

2.3.2.1 The flexibility of prepositions

Despite the fact that prepositions profile specific aspects of landmarks, the structural dimensions of landmarks are not nearly as amenable to subjective interpretation as the semantic features of a preposition are. For example, a preposition may focus attention on the surface or container properties of a landmark, but it does not change the understanding of the basic structure of that landmark. Landmarks, in contrast, are more likely to influence the interpretation of a preposition, since prepositions do not refer to concrete physical entities with stable properties. As a result, prepositions are, in fact, quite flexible in combining with landmarks of various dimensions. Appropriate interpretation of an expression will often involve a shift in the relevance of the semantic features of the preposition. This fact complicates the recognition of relevant semantic features in the case of Path prepositions. For instance, despite the fact that the best landmarks for *через* and *přes* are long and narrow, landmarks which have more or less equal dimensions may occur with these prepositions (as well as with the preposition *по/po*, for which such landmarks are prototypical). Different aspects of the trajector(y)/landmark relationship are profiled with each preposition, although it is not always immediately obvious what, precisely, is profiled in each instance, and why:

(2) a. Пантера прошла через лес vs. b. Животное прошло по лесу
*A panther walked **across** the forest* *An animal walked **along** in the forest*

Even more problematic is the case of prepositions which prefer proximal short dimension landmarks. For instance, given that trajectors with Russian *мимо* typically interact with the short dimension of the landmark, why does it not give a reading equivalent to the preposition *через* in example (3)?:

(3) a. Змея проползла мимо речки vs. b. Лебедь плывет через реку
*A snake slithered by **past** the river* *A swan is swimming **across** the river*

While it seems clear that the notion of proximity precludes the interpretation of crossing the river here (which involves contact with the river), how is it possible that *мимо* can combine with such a landmark in the *long dimension*, and how does *мимо* then differ from *вдоль* in the example below?:

(4) Автомобиль ехал вдоль реки
*A car drove **along** the river*

2.3.2.2 Prepositions with ambiguous landmark preference

Another complication is that it can be difficult to determine landmark preference for some prepositions. Russian *через*, for instance, appears to prefer long, narrow landmarks crossed in the short dimension, but it is acceptable with container landmarks as well. When combined with container LMs, *через* exhibits no preference for long, narrow landmarks and short dimension spanning. The Czech instrumental case similarly does not concern itself with short dimensions versus long dimensions as regards containment. The Czech preposition *kolem*, which was described in the previous section as if it possesses two distinct senses, may be used to indicate short dimension spanning of laterally located landmarks or complete encirclement of a landmark. Neither *kolem* nor *вокруг* distinguishes contact and non-contact with landmarks. If the distinctions proposed for Path prepositions are valid, why have these contrasts been neutralized? It is worth questioning whether there is reason to make distinctions according to these parameters if the prepositions do not yield readily to classification, especially when classification appears straightforward for Source and Goal prepositions.

2.3.2.3 Solutions

The solutions to the complications presented above involve the interaction of individual landmarks and other contextual factors with the prototypic semantic features of the given preposition in such a way that a relevant subset of the principal features is automatically selected. In some cases TR/LM relational features and TR orientation features interact with one another to highlight a particular feature, such that one feature predominates at the expense of others. The neutralization of certain distinctions can be explained in terms of redundant features present in the prototype for each preposition and by the relative rarity of certain path types in experience, which obviates the need for

a given distinction. Before examining these processes in detail, however, it is necessary to demonstrate how the relevant semantic features were extracted for each preposition from the landmark frequency data.

2.4 Semantic features for Path prepositions

The frequency of prototypical landmarks for each preposition allows for a reconstruction of relevant semantic features for that preposition. It should be made explicit that we are working backwards from data concerning the frequency of landmarks with each preposition to establish the semantic features for the prototype meanings of the prepositions. Thus, features are described as if they are generated from the characteristics of typical landmarks. In fact, speakers presumably have internalized the prototype semantic features for each preposition and simply apply the relevant features to each landmark. This allows the speaker to infer the appropriate trajectory/landmark relationship, such as *crossing in the short dimension*[5] *in contact with the surface*, etc.

2.4.1 Trajectory orientation features

The first set of semantic features to be discussed deals with trajectory orientation. If a long, narrow object is passed or crossed in the narrow dimension, the object itself does not convey much information concerning the contour of the path. This suggests that for prepositions which preferentially indicate interaction with landmarks in a short dimension (*мимо, через, kolem, přes*), the contour of the landmark is irrelevant to the shape of the trajectory. Another way of saying this is that the trajector is likely to pass a very narrow object in a direct line relative to that object, as there is little space or time to engage in deviations from the course of motion. The distance covered is too short to allow for significant meandering in the trajectory. Since the trajector moves in a (more or less) straight line with respect to the LM, prepositions exhibiting a preference for long, narrow landmarks spanned in the short dimension are referred to as Direct prepositions.

If an object is passed or crossed in the long dimension, however, the contour of the landmark itself becomes relevant to the contour of the trajectory. (This can be maximally true for the encirclement trajectory, which may echo the contour of the landmark all the way around the object until the path intersects with itself.) Thus, prepositions that preferentially indicate interaction with landmarks in the long dimension (*вдоль, по, podél, po*) or around the perimeter of the landmark (*вокруг, kolem*) imply a closer connection between the trajectory and the landmark contour than Direct prepositions do. I have called these prepositions Contour prepositions and Encirclement prepositions, respectively.

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[5] Although the short and long dimension of the LM object are not part of preposition prototype semantics, it is worth noting that traces of landmark structure are found in the etymology of two Russian and Czech prepositions: po*dél*, в*доль*, from the root meaning *length*. In contrast it would seem that the shape of the trajectory, independently of the LM, may be at least as important as LM structure in the etymology of о*коло*/*okolo*, *kol*em, and во*круг* from the roots for *wheel* and *circle* respectively.

We can now see that, for landmarks without a clear short and long dimension, the semantic distinction between Direct and Contour prepositions is primarily determined by this feature regarding contour relevance. In the following example *kolem* does not indicate that the trajectory traced by the figure follows along the contours of the body of water, but merely that it is in proximity to it. In contrast, *podél* indicates that the trajectory is intimately connected with the contour of its landmark (see also examples (3)a and (4)):

(5) a. Jeli **kolem** vody vs. b. Holčička šla **podél** vody
*They drove **past** the water* *A girl walked **along** the water*

CONTOUR is thus a measure of the intimacy of trajector(y)/landmark relations, or the degree to which the LM can be said to determine the trajectory. An important point about the features <direct> and <contour> is that they imply something about the "power dynamic" between trajector and landmark in determining the course of the trajectory. A Direct preposition indicates that the trajector proceeded in a direct line regardless of the presence of a landmark, whereas a Contour preposition indicates that the landmark fully defines the course of the trajectory. The fact that these two features suggest differential contributions on the part of the trajector and landmark to determination of the trajectory turns out to be significant for prefix semantics as well. This topic is discussed more fully in Section 2.6.

Notice that this observation regarding the relevance of LM contour is not obligatory from the facts concerning LM frequency; a trajectory along the short dimension of a landmark could theoretically follow the contour of that landmark quite closely. Conversely (as we have seen with *мимо* and *kolem*), a trajectory along the long dimension of a landmark may ignore landmark contour. Nevertheless, the experiential observation that trajectories in relation to very narrow objects are not controlled or directed by the contour of the object shows up in the linguistic data as a high frequency of short dimension spanning relations with landmarks in combination with certain prepositions. Similarly, the fact that only spatially extensive landmarks can control the contour of a trajectory shows up as an absence of short dimension trajector/landmark relations with certain prepositions. Thus, the significant feature of Direct prepositions is the irrelevance of landmark contour, whereas Contour prepositions specifically indicate the relevance of landmark contour.

No examples of prepositions describing complete encirclement of a landmark by a trajector occurred in the data base, but, for the sake of completeness, an additional feature, <encircle>, should be included based on examples from the greater corpus of transcribed data (e.g. *kosmonaut ob-chází kráter* 'the astronaut encircles the crater'). Encirclement prepositions indicate that a trajector moves around the perimeter of a LM, such that the starting point is equivalent to the endpoint of motion. The trajectory thus intersects itself and describes a circle (more or less) around the LM. Encirclement is essentially the opposite of containment; whereas containment indicates that the LM encompasses the trajectory, encirclement indicates that the trajectory encloses the LM.

2.4.1.1 Features implied by trajectory orientation

The presence of one TRv orientation feature does not always imply the absence of the other features. For instance, Contour prepositions do not positively (or typically) indicate <+encircle> but do not preclude it either, since following the contour of an object bounded in two dimensions around to the starting point of motion would indeed eventually lead to an encirclement trajectory. Nevertheless, an encirclement trajectory would not be profiled in this case. At first it seems that Contour prepositions also do not preclude a direct trajectory, since a landmark's contour may itself be direct, or may be so amorphous as to indicate little or nothing about the actual contour of the trajectory (e.g. *идет по земле* 'walks along on the ground'). In this case, however, the trajector still traces the LM contour, but the contour itself may be described as having a zero value. Prepositions marked <+contour>, then, may be always considered <-direct>, even when the trajectory appears to be indistinguishable from a direct trajectory. Similarly, a Direct preposition is always <-contour>. Direct prepositions cannot indicate <+encircle> either, since in most circumstances a straight line cannot encircle a landmark. For the same reason, the concept of a straight trajectory does not make sense for Encirclement prepositions. <Contour>, on the other hand, although clearly not a distinguishing feature of Encirclement prepositions, may at least be implied, since a trajectory which encircles a landmark also often traces its external contour. Thus, Encirclement prepositions may be considered <±contour>.

Another important feature which is implied by the <direct> feature and which can be extracted from the landmark frequency data is concerned with the presence of LM endpoints. A path which follows the short dimension of the LM is assumed to successfully SPAN[6] the LM from one side to the other. Recall that the notion of short is relative to the trajectory. Thus, a moving trajector will pass from side to side of the LM in the course of a (spatially and temporally) very brief trajectory. The same observation does not apply to trajectories which follow the long dimension of the LM. In example (4) above, one hardly assumes that the trajector moved from the source of the river to its mouth, where it empties into some other body of water.

Given this fact, an important implied feature for Direct prepositions is that the trajector has moved from one side of the LM to the other and, borrowing Flier's (1975) term, this feature will be referred to as . Contour prepositions are unmarked for and thus do not carry any implication that the trajector has gone from side to side of the LM. Notice that although <+contour> implies <-direct>, it does not imply <-span>. Contour can be relevant whether or not a trajector moves from one side of an LM to the other. In contrast, the feature and the <direct> feature are clearly interrelated. A straight trajectory requires a starting point and endpoint which are non-equivalent; the feature indicates that such points (namely, the two sides defined by the short dimension of the LM) are present. For landmarks without a clear long and

[6] The term *span* is borrowed from Flier (1975), for whom <+spanned> is a semantic feature which applies to four Russian prefixes and is defined as "spanning the periphery bounding the inceptive and terminal limits of the domain". With respect to containment contexts the condition of spanning only in the periphery cannot be said to hold. Therefore, *span* is used here to indicate merely a trajectory which stretches from one side of an LM to the other, without reference to domain vs. periphery.

short dimension, the feature may serve to distinguish between Direct and Contour prepositions.

The distinction between the examples in (2), above, can now be explained as follows. In the first example (with *через*) the trajector is assumed to move from one side of the forest to the other along a more or less straight route, while the second example (with *по*) neither implies that the trajectory stretched all the way across the LM, nor that it was in a direct line, but simply that it followed the contour of the forest in some way (i.e. motion took place within the bounds of the forest).

One demonstration of the relevance of the features <direct> and is that replacement of a prefixed or determinate verb of motion with an indeterminate verb of motion has distinctly different consequences for Direct and Contour prepositions:

(6) ходить через лес
to walk regularly (i.e. take a particular route) across the forest (iterative)

(7) ходить по лесу
to walk regularly in the forest (iterative)
to walk around in the forest (progressive, no direct TRv involved)

The first example can produce only an iterative reading because a direct trajectory with distinct, non-equivalent starting and ending points on either side of an LM is incompatible with a multi-directional interpretation of the verb. The Contour preposition *по*, however, carries no implication of specified source and goal points of motion, nor of a directed trajectory connecting them. It is, therefore, perfectly compatible with a multi-directional, in-progress interpretation. A progressive reading with the preposition *через* would require a determinate verb. [7]

Direct prepositions thus imply that spanning of the landmark occurs, whereas Contour prepositions do not. The concept of spanning does not usually make sense for Encirclement prepositions, since these require equivalent starting and ending points. Nevertheless, non-equivalent sides can be imposed on the landmark, even if they are not highlighted by the Encirclement preposition. Thus, theoretically <+span> is implied by Encirclement prepositions for any two arbitrarily chosen sides of the landmark. Spanning, however, is not a significant distinguishing feature of Encirclement prepositions.

2.4.1.2 Summary of trajectory orientation features

So far, we have seen how certain landmark preferences can be related to the trajectory orientation features <direct>, <contour>, and <encircle>. A preliminary list of potentially relevant semantic features is presented in the chart below. Next we turn our

[7] The progressive, multi-directional interpretation of the indeterminate verb with the preposition *по* suggests that the movement of the TR is potentially aimless or lacking in intent to get somewhere. The trajectory of motion is determined primarily by the LM. In contrast, the direct trajectory, which spans the LM associated with *через*, implies that the trajectory is not determined by the dimensions of the LM but by the intentions of the TR. The TR thus controls the direction of motion. The degree to which each preposition focuses attention on either the TR or the LM is discussed more fully in Section 2.6.

attention to landmark preferences and the relational features <proximity>, <contact>, and <contain>.

Table 2.3. Trajectory orientation features for Czech and Russian Path prepositions

Trajectory orientation	prepositions	primary features	implied features
Direct: Russian: Czech:	мимо, через kolem, přes 'past', 'across'	+direct	-contour -encircle +span
Contour: Russian: Czech	вдоль, по podél, po 'along', 'along on'	+contour	-direct (±encircle) ±span
Encircle: Russian: Czech:	вокруг, около kolem, okolo 'around'	+encircle	-direct ±contour (+span)

2.4.2 Trajector/landmark relational features

Semantic features associated with trajector/landmark relationship are more readily discernible, in part because they are familiar from Source/Goal prepositions and in part because the concepts of proximity, contact, and containment are fairly intuitive. According to the description of prototypical landmarks for prepositions given in Section 2.3.1, those prepositions which prefer landmarks located laterally to the trajector and in a non-contact relation to the trajector (*мимо, вдоль, kolem, podél*) can be readily distinguished from those which prefer landmarks as support surfaces located below the trajector and in contact with the trajector ((*через*), *по, přes, po*).[8] The lateral location of landmark relative to trajector versus location underneath the trajector can essentially be ignored, since it is a side-effect of the normal distribution of proximity and contact relations in the human experience of motion. In other words, human and human-like trajectors most often move in contact with a surface beneath them, but not in contact with laterally located objects. The primary distinction can, therefore, be characterized as one of contact versus non-contact.

Proximity prepositions (*мимо, вдоль, kolem, podél*), then, describe a situation in which the landmark is in a non-contact relation with the trajectory at all points along the trajectory.[9] As just pointed out, the non-contact constraint for Proximity prepositions does affect the likelihood of certain preposition/landmark combinations.

[8] By definition a Path preposition may relate a landmark to a trajectory in only four canonical directions: above, below, and laterally (to the right and left) of the trajectory, since anything directly behind or in front of the line of the trajectory would be a source or goal LM respectively.

[9] In the ordinary sense of the term proximity, it is clear that anything which is in contact with another entity could also be considered proximal to it. Here, however, proximity is defined as lack of contact between two entities, therefore the presence of either the proximity or contact feature implies the absence of the other.

Since most trajectors move in contact with a supporting surface, Proximity prepositions are not suitable for landmarks which act as surfaces for motion (i.e. anything located below the trajectory as opposed to above it or lateral to it.) Therefore, although Proximity prepositions do not suggest any particular construal of the landmark as regards size and shape, they tend to restrict the spatial location of the landmark relative to the trajectory.

Contact prepositions ((*через*), *по, přes, po*), in direct contrast to Proximity prepositions, describe a situation in which the landmark is in a contact relation with the trajectory at all points along the trajectory. In theory this contact may occur in any direction (i.e. above, below, or laterally), although in ordinary human experience the contact is normally below the trajectory.[10] Contact prepositions thus highlight the surface properties of landmarks. The most common landmarks label surfaces (a road, a lawn) or have a surface as a salient feature (a planet) and are located beneath the trajector.

Container prepositions are those which prefer container landmarks (*(через), сквозь*, Czech instrumental case, *skrz*). The containment parameter indicates that the trajector is contained by the landmark at all points along the trajectory. Preferred landmarks for Containment prepositions, as noted in Section 2.3.1, therefore, typically enclose the trajectory on all sides (e.g. a tunnel, water for swimming figures). Containment, however, is much less clearly defined for Path prepositions than for Source/Goal prepositions. The only morphological form which occurred frequently in the database and could be highly correlated with container landmarks is the Czech instrumental case. Furthermore, unlike the Proximity and Contact prepositions, the instrumental case does not distinguish between direct and contour trajectories.

The lack of a clearly defined Path Containment preposition in either Russian or Czech is partly due to a distinction which is exemplified by the sample containers just mentioned: a tunnel and water. In the former case, the explicit landmark encloses, but does not contact, the trajector(y). In the latter, the explicit landmark both encloses and contacts the trajector(y) at all points. Thus, containment at times overlaps with the notion of proximity, and at times with the notion of contact. Another way of saying this is that proximal landmarks may or may not contain the trajectory, so Proximity prepositions will be unmarked with regard to a feature <contain>. Contact prepositions are similarly unmarked for <contain>. A second point about containment is that containers-as-pathways for motion are quite rare in experience. Thus, it is not surprising to find that Russian and Czech may not have common, specialized prepositions to express this relationship. (Alternatively, one might say that all motion is contained within space, and this is so fundamental that neither language needs to comment upon it.) Although the containment distinction seems, perhaps, to be unnecessary for Path prepositions, I will argue that it is, nevertheless, a useful distinction to make, especially when prefix semantics comes under discussion. Russian, in particular, can dispense

[10] The term contact, as it is used here, is actually a subset of a larger category of possible contact relations between landmark and trajector. In this study, contact relations are limited to those in which the landmark serves as a supporting surface for the trajector. Thus non-supporting (i.e. non-gravitational) contact, such as that found in collisions, is not discussed.

with Containment prepositions because it uses the prefix *про-* to highlight path containment relations.

2.4.2.1 Features implied by the trajector/landmark relation

As noted above, the feature <+proximity>, as it is defined here, implies <-contact> and similarly <+contact> implies <-proximity>. Containment, on the other hand, is theoretically compatible with both proximity and contact. Trajector/landmark relational parameters may also be said to express the implied feature <contour>. Implied contour differs from the trajectory orientation feature <contour> by virtue of applying to vertical contours rather than horizontal (lateral) contours.[11] Thus, for instance, when a trajector moves in contact with a surface, it is subject to the vertical undulations of that surface even if there are no constraints on its lateral movement. In general, vertical contour is less salient to humans than lateral contour, since figures which move in contact with a surface must always follow the contours of that surface, no matter where they move in lateral dimensions. Landmarks which control trajectories in lateral dimensions are interpreted, therefore, as having a greater effect on trajectory than landmarks which control movement in a vertical dimension. For this reason, lateral contour is a full-fledged feature, whereas vertical contour is only a secondary, or implied, feature. In order to distinguish between the two, vertical contour will be designated as <↑contour>.

Proximity prepositions do not express the feature <↑contour>, as proximal landmarks do not usually affect the vertical contour of the trajectory. Contact prepositions, as we have seen, are intimately connected to the vertical contour of the landmark, since the trajectory is bound to the LM in one dimension. Containment prepositions, to the extent that they have a separate identity, also indicate that the landmark exerts an influence over the trajectory in the vertical dimension, since it encompasses the trajectory on all sides. As we will see, lateral contour and vertical contour interact to make some prepositions more TRAJECTOR-CENTERED (i.e. the landmark has little influence on the trajectory), whereas others are more LANDMARK-CENTERED (i.e. the landmark fully determines the trajectory). This is discussed more fully in Section 2.6.

2.4.2.2 Summary of trajector/landmark relational features

An overview of the relevant trajector/landmark relational features <proximity>, <contact>, and <contain> is given in the chart below.

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[11] The designation *vertical contour* is relative to normal trajector orientation rather than absolute verticality in a gravitational field. In other words, this kind of contour is also relevant for an insect crawling up a tree trunk. In this case the contour is not actually vertical, as defined by a human figure standing on the ground. Nevertheless, it is vertical with respect to the normal orientation of the insect. This demonstrates that this measure of contour is inherently tied to contact (and containment) parameters rather than relating to an absolute vertical dimension in space.

Table 2.4. Trajector/landmark relational features for Czech and Russian Path prepositions

TR/LM relation	prepositions	primary feature	implied features
Proximity: Russian: Czech:	мимо, вдоль, kolem, podél 'past,' 'along'	+proximity	-contact ±contain -↑contour
Contact: Russian: Czech:	через, по přes, po 'across,' 'along on'	+contact	-proximity ±contain +↑contour
Contain: Russian: Czech:	через, по, сквозь INSTR, skrz 'through'	+contain	±proximity ±contact +↑contour

2.4.2.3 Some complications concerning TR/LM relational features

The parameters of proximity, contact, and containment exhibit a great deal of fluidity among Path prepositions in comparison to Source/Goal prepositions. It was noted earlier (in Section 2.4.2) that there is an inherent ambiguity in the notions of proximity and containment on the one hand, and contact and containment on the other. In addition, there are instances in which Contact prepositions are extended to situations of proximity and vice versa. Russian *мимо* and Czech *kolem* (in its most common usage) are both readily identifiable as Proximity prepositions, but the remaining prepositions seem ambiguous with regard to two or all three parameters. Although the degree of ambiguity is not sufficient to obscure the basic classification of prepositions, it is worth considering this topic in more detail before going on to an analysis of individual prepositions.

The apparent fluidity of Proximity prepositions, which may indicate both proximity and contact, and more significantly, Contact prepositions, which may indicate both contact and proximity, arises from inferences derived from knowledge concerning the manner of motion encoded in the verb, as well as knowledge of the basic meaning of the preposition and the structure and function of the landmark. When the prepositional phrase makes reference to motion over an extent of space (the path) rather than simply source or goal points, the manner of motion which the trajector engages in becomes relevant to the interpretation of the preposition/landmark relation. The majority of Russian and Czech motion verbs inherently involve contact of the trajector with some surface. This simply reflects speaker knowledge of the normal manner of motion for typical figures. Thus, the Russian verbs *идти, ехать, бежать, лезть, ползти*, and the Czech verbs *jít, jet, běžět, lézt, plazit se* ('walk', 'ride', 'run', 'climb', and 'crawl') all typically indicate motion occurring in contact with a surface. Flying (Russian *лететь*, Czech *letět*), on the other hand, never occurs in contact with a (liquid or solid) surface (although it occurs in contact with air, and when air is the explicit LM, may occur with Contact or Containment prepositions). Similarly, swimming/floating (Russian *плыть*, Czech *plout*) may involve primarily contact, partial containment or

complete containment of the figure in water, but also does not involve contact with potential landmarks other than water. This can be viewed as inclusion of a certain amount of information concerning ground (landmark) directly in the verb, in which case the speaker is less likely to use that ground as the explicit landmark, since it would be redundant.

Rather than using separate prepositions for figures which move in/on air or water but are otherwise moving in an analogous fashion with respect to surface landmarks (other than air and water), both Czech and Russian extend the Contact prepositions to include proximity with the verbs *to fly* and *to swim/float*. Knowledge concerning the nature of, say, flying – that it does not occur in contact with a solid or liquid LM, but only within gaseous substances, typically air -- makes the non-contact relationship of trajector and landmark clear and obviates the need for an explicit Proximity preposition. Furthermore, given that the proximity, contact, or containment relationship is retrievable from knowledge concerning manner of motion, trajectory orientation features <direct> or <contour> often take precedence over the TR/LM relational features.

Once this is recognized, the occasional examples of Path Contact prepositions that seem to indicate path proximity with the verbs *to fly* or *to swim/float* can be disregarded for the purposes of classification of the prepositions with respect to proximity and contact. In the following examples, then, the preposition is acting as a Contact preposition in (8) and is automatically extended to indicate proximity to the landmark in (9), given that the trajector is flying:

(8) Девочка перешла через дорогу
*A girl walked **across** the road* (contact between TR (girl) and LM surface (road))

(9) Бабочка перелетела через дорогу
*A butterfly flew **across** the road* (non-contact between TR (butterfly) and LM surface (road))

This is an example of how inferences arising from linguistic context and general knowledge determine which aspects of the preposition prototype are relevant for the expression in question. Given that flying does not occur in contact with surfaces like roads, a speaker will infer that the relevant parameters of the preposition *через*, in this case, are the short dimension spanning of the road from side to side and the direct trajectory.

The proximity preposition *мимо* is possible here, but not appropriate. Although it indicates lack of contact between trajector and landmark, *мимо* is underspecified compared to *через*. This will be taken up in greater detail in the discussion of the prototypes of individual prepositions but is worth mentioning here for the following reason. When sufficiently specific Proximity prepositions are available to speakers, they are clearly preferred over Contact prepositions with the verbs *to fly* or *to swim/float*. Thus, even though Contact prepositions may occur with proximal LMs with these verbs, both languages use alternative Proximity prepositions when possible. For instance, the

expressions in (10) and (11) are quite acceptable in Russian, but the expressions in (12) and (13) are more common:

(10) Бабочка летела по дороге
*The butterfly flew **along** the road*
or
(11) Рыба плыла по дну моря
*The fish swam **along** the bottom of the sea*

(12) Бабочка пролетела над дорогой/вдоль дороги
*The butterfly flew **above** the road/**along** the (contour of) the road*
or
(13) Рыба плыла над дном моря/вдоль дна моря
*The fish swam **above** the bottom of the sea/**along** the bottom of the sea*

This demonstrates the value of examining the frequency of landmark types. If only the various possibilities of preposition plus landmark combination are explored, the proximity vs. contact (or containment) distinctions will remain obscured. Frequency analysis, however, demonstrates that certain TR/LM relations are clearly preferred for a given preposition.

Finally, when the landmark is explicitly air for flying or water for swimming, Contact or Containment prepositions (or cases) are required, as expected:

(14) Спутник летел по звездному небе
*A satellite flew **along** the starry sky*

(15) Pták letěl **vzduchem-INSTR**
*A bird flew **through** the air*

(16) Had plaval **vodou-INSTR**
*A snake swam **through** the water*

Thus, despite the extension of Contact prepositions to indicate proximity, when adequate Proximity prepositions are available, they will be used.

The Proximity prepositions *вдоль* and *podél* may also extend to contact situations:

(17) Змея ползет вдоль берега реки
*A snake slithered **along** the river bank*

(18) Had lezl **podél** břehu
*A snake slithered **along** the (river)bank*

Again, primacy of trajectory orientation features in the prototype may be cited as the reason for the acceptability of such expressions. It will be seen later that the primary

semantic content of both *вдоль* and *podél* is simply <+contour>. Therefore, when the motion verb makes it clear that contact between the trajector and landmark occurs, the Proximity preposition may be used simply to highlight the intimate connection between the trajectory and the (long dimension) contour of the LM. (This is particularly apparent in the Russian example, where *берег*, 'bank', as a landmark, is part of a compound expression (*берег реки* 'river bank'), indicating that the contour of the LM itself follows the contour of a proximal secondary LM, a river.)

2.4.3 Semantic features of prepositions

Combining the semantic features postulated from trajectory orientation and trajector/landmark relational parameters generates the following chart of potential prototype semantic features for the prepositions:

Table 2.5. Potential spatial semantic features of Czech and Russian Path prepositions

	Trajector/landmark relation					
Trajectory orientation	Proximity		Contact		Contain	
Direct	+direct +prox -contour -contact	-encircle ±contain +span -↑contour	+direct -prox -contour +contact	-encircle ±contain +span +↑contour	+direct ±prox -contour ±contact	-encircle +contain +span +↑contour
Contour	-direct +prox +contour -contact	(±encircle) ±contain ±span -↑contour	-direct -prox +contour +contact	(±encircle) ±contain ±span +↑contour	-direct ±prox +contour ±contact	(±encircle) +contain ±span +↑contour
Encircle	-direct +prox ±contour -contour	+encircle ±contain (+span) - ↑contour	-direct -prox ±contour +contact	+encircle ±contain (+span) +↑contour	N/A	

This chart can be greatly simplified by removing most of the implied features, as they can always be derived from other features. For instance, since <+direct> always implies <-contour, -encircle>, and <+contour> implies <-direct, ±encircle> this contrast can be expressed by the presence or absence of a single feature, <contour>. Similarly, <+proximity> always implies <-contact, ±contain> and conversely <+contact> implies <-proximity, ±contain>. We can therefore express all of these contrasts with the features <contour> and <contact> alone. The secondary implied features and <↑contour> are retained, however, as they interact with other features in interesting ways to generate preposition prototypes. By removing the designations which are irrelevant, then, we can simplify the chart in the following way:

Table 2.6. Potential spatial semantic features of Czech and Russian Path prepositions (simplified)

	Trajector/landmark relation					
Trajectory orientation	Proximity		Contact		Contain	
Direct	-contour -contact	+span -↑contour	-contour +contact	+span +↑contour	-contour +contain	+span +↑contour
Contour	+contour -contact	±span -↑contour	+contour +contact	±span +↑contour	+contour +contain	±span +↑contour
Encircle	+encircle	-contact -↑contour	+encircle	+contact +↑contour	N/A	

Note that the concepts of encirclement and containment are incompatible, since they are inverses of each other and describe mutually exclusive spatial arrangements. Therefore, there is no Encirclement Containment preposition.

In this section the primary semantic features which distinguish the various Path prepositions in Czech and Russian have been outlined. The next section will be devoted to an examination of preposition types and individual prepositions in Russian and Czech, and especially how they interact with landmarks, linguistic knowledge, and general knowledge to generate the prototype senses of individual Path prepositions. As we will see, it is not unusual for features to interact, highlighting one feature, downplaying another, and thus influencing interpretation of a given preposition. These interactions are crucial in generating the actual prototype features for each preposition.

2.5. Prototype Semantics of Path Prepositions

2.5.1 Path Proximity prepositions

A number of Path prepositions may be readily classified as Proximity prepositions based on the frequency of proximal landmarks occurring with these prepositions. In Russian these include *мимо* 'by, past', *вдоль* 'along', *возле* 'next to', *вокруг* 'around' and *около* 'by, around', as well as *под* 'below', *над* 'above, over', *за* 'behind, beyond', and *перед* 'in front of' when used with the instrumental case, and Czech *kolem* 'by, past, around', *podél* 'along', *vedle* 'next to' and *okolo* 'by, around', as well as *pod* 'below', *nad* 'above, over', *za* 'behind, beyond', and *před* 'in front of' when used with the instrumental case[12]. Czech *mimo* 'past, by' might also be considered here, although it did not occur in the database at all. The reasons for this will be considered below. While some of the Proximity prepositions may be distinguished according to the features <direct>, <contour>, and <encircle>, *под/pod* 'below', *над/nad* 'above, over',

[12] Russian and Czech both distinguish these four Path Proximity prepositions from Goal Proximity prepositions by the case form of the complement. Path prepositions have complements in the instrumental case; Goal prepositions have complements in the accusative case. As with other Czech and Russian Path prepositions, these are not distinguished from locational uses of the prepositions, since the presence of a determinate or prefixed verb of motion makes the path interpretation clear.

за/za 'behind, beyond', and *перед/před* 'in front of' are neutral with respect to these contrasts and may indicate either direct or contour trajectories.

2.5.1.1 Encirclement Proximity prepositions: *вокруг, около, kolem, okolo*

Russian *вокруг* and *около* and Czech *kolem* and *okolo* are the only prepositions which can directly express the encirclement proximity relation. In addition to this, the Encirclement prepositions are also used in locational expressions, often with multiple trajectors which are located roughly around the landmark and thus define a fictive circular path around it:

(19) Všichni stali **kolem** něho†
*Everyone was standing **around** him*

If there is only a single trajector, the interpretation is merely that the trajector was proximal to the landmark and that further refinement of the proximity relation is not relevant (i.e. more specific proximity prepositions such as *před* 'in front of, *za* 'behind', *vedle* 'next to', could also apply here). In non-motion contexts, then, the Encirclement prepositions extend to a general meaning of *in the vicinity around* the LM. If this locational sense of *in the general vicinity* is extended to a moving figure, the result is almost indistinguishable from a Direct Proximity preposition:

(20) идти около/мимо магазина
to walk by the store

All of the Encirclement prepositions except *вокруг* may extend to indicate motion past the LM (without encircling it). In fact, *около/okolo* and *kolem* are all possible in contexts where Contour Proximity prepositions are expected as well, since these contexts are also compatible with the idea of motion in the general vicinity of the landmark. When extended in this way, however, Encirclement prepositions do not profile the LM contour, indicating instead merely motion in the (lateral) vicinity of the LM. For these reasons, *okolo/около* and *kolem* appear to be general purpose Proximity prepositions which often do not realize the trajectory orientation feature <encircle>. The fact that Encirclement Proximity prepositions are extended to direct proximity contexts might seem surprising at first. The encirclement trajectory, however, is quite salient and somewhat uncommon in experience relative to other trajectory types. It is also usually clear from context. Thus, the encirclement and direct proximity trajectories are unlikely to be confused. From this perspective it makes sense that the Encirclement prepositions, rather than other Proximity prepositions, would be extended in this way.

The rarity and salience of the encirclement trajectory is also responsible for the lack of a proximity/contact distinction in encirclement contexts. The presence or absence of contact, which is a prominent distinction for other prepositions, is much less informative for Encirclement prepositions. Even if contact occurs, it will closely mimic a proximal trajectory, such that proximity and contact are barely distinguishable in terms of trajectory contour. Furthermore, there are few landmarks which regularly make sense with both contact and proximity encirclement contexts for humans:

(21) Jet **kolem** světa (potentially +contact)
*to travel **around** the world*

(22) Letět **kolem** světa (-contact)
*to fly **around** the world*

In this instance, the contour of the trajectory itself relative to the landmark is so prominent that the proximity/contact distinction would make a negligible contribution to comprehension, and there is no reason to maintain it. Neither Russian nor Czech Encirclement prepositions distinguish between proximity and contact. Finally, we have already noted that the concepts of encirclement and containment are incompatible, thus Encirclement Containment prepositions are not expected.

2.5.1.2 Contour Proximity prepositions: *вдоль, podél*

Вдоль and *podél* are clearly recognizable as Contour Proximity prepositions in Russian and Czech. When the trajectory is above or below the landmark, *вдоль* and *podél* may be replaced by, or combined with, the more specific Proximity prepositions *над/nad* 'above' or *под/pod* 'below,' as exemplified by (12), repeated here:

(23) Бабочка пролетела над дорогой/вдоль дороги
*The butterfly flew **above** the road/**along** the (contour of) the road*

Над/nad and *под/pod* in such circumstances do not, in and of themselves, discriminate between direct and contour trajectories. The long dimension interpretation is favored, however, perhaps largely because these prepositions may be replaced by the Direct Contact preposition *через/přes* when the short dimension spanning interpretation is required (see Section 2.4.2.3). *Вдоль* and *podél* typically do not, however, alternate with the more specific lateral Proximity prepositions *перед/před* 'in front of' and *за/za* 'behind'. The latter also do not distinguish between direct and contour trajectories and express primarily the observer's perspective concerning the relation between trajector and landmark. This is usually less informative than either the <+above/below> distinction or the <+contour> distinction. Thus, when a trajectory follows the contour of the extended dimension of a lateral landmark, the prepositions *перед/před* and *за/za* rarely occur.

Since lateral contours are more significant than vertical contour, and since *вдоль* and *podél* are the only prepositions designated <+contour> *for lateral contour alone*, this feature is particularly highlighted for these prepositions. It is the primacy of this feature which allows *вдоль* and *podél* to extend to contact situations when lateral contour is in focus. In contrast, *мимо* and *kolem* cannot be used in contact situations.

Czech *podél* marginally extends to typical direct proximity contexts, approaching synonymy with *kolem*:

(24) Chlapec jde **podél** lampy
*A boy is walking **past** a lamp*

Such short dimension uses, however, constitute only a small fraction of the examples in the database with *podél*. This perhaps reflects a tendency for Czech Proximity prepositions to express merely an unconstrained proximity relation.

2.5.1.3 Direct Proximity prepositions: *мимо, kolem*

The distinguishing features of Direct Proximity prepositions are the irrelevance of LM contour (both vertical and horizontal) and the absence of contact between the LM and trajectory at all points along the trajectory. The <-contact> feature is shared with both Contour and Encirclement Proximity prepositions, whereas the double <-contour> features (i.e. the irrelevance of both lateral and vertical contours of the LM) distinguish these prepositions from all others in the matrix. It might be expected, then, that the <-contour> features would assume prominence within the prototype. The irrelevance of contour indicates that the LM has little influence over the TRy. Indeed, these prepositions are often accompanied by the inference that the landmark was ignored or altogether unnoticed by the trajector. The lack of concern for landmark contour is especially obvious when Direct Proximity prepositions are contrasted with Contour Proximity prepositions:

(25) Змея проползла **мимо** речки
*A snake slithered by **past** the river*

(26) Динозавр пошел **вдоль** реки
*A dinosaur set out (started walking) **along** the river*

In the presence of a long, narrow landmark which cannot be spanned without contacting the trajectory, the landmark must be proximal in the long dimension. For the preposition *мимо*, this runs counter to the expectation that the trajectory passes directly from one side of the landmark to the other, and thus that the landmark should normally be spanned in the short dimension. In this case *мимо* highlights the only feature which distinguishes a Direct Proximity preposition from a Contour Proximity preposition -- that the contour of the LM is irrelevant to the trajectory. In contrast, *вдоль* focuses precisely on this contour, and the trajectory can be expected to closely mirror the shape of the river itself.

In Russian the semantic territory of the direct proximity relation belongs straightforwardly to the preposition *мимо*, as long as the LM is lateral to the trajectory. For trajectors moving in contact with a surface, a landmark can also be proximally located either above or below the trajectory. In practice, in such situations Russian speakers never use the preposition *мимо*. The presence of the more specific Proximity prepositions *над* and *под* eliminate the use of the underspecified *мимо* to designate the above/below relations. Thus, *мимо* is essentially restricted to landmarks which border the trajectory laterally. Notice, however, that for a flying trajector which moves perpendicular to a surface (a rocket taking off) or in no particular up-down relation to a surface at all (a rocket in space), *мимо* can easily apply to landmarks on all sides of the trajectory, so long as they are not located directly on it:

(27) Ракета пролетела мимо планеты
A rocket flew by past a planet (the planet can be anywhere around the trajectory, since the above/below relation is not defined for a rocket in space)

A speaker can also choose to be more specific regarding the proximity relation of landmarks located lateral to a trajectory with respect to an observer by using the Proximity prepositions *перед* 'in front of' and *за* 'behind':

(28) Девочка прошла перед/за деревом
*The girl passed **in front of/behind** a tree*

In the data, however, *мимо* was used almost exclusively in preference over *перед* when the trajector passed in front of the tree relative to the viewer. *Мимо* was marginally more common than *за* when the trajector passed behind the tree relative to the viewer. This indicates that the non-deictic *мимо* was preferred in both contexts, but that passage on the far side of the landmark from the viewer is a more marked situation (or a somewhat less prototypical example of *мимо*), resulting in occasional replacement with the more specific preposition *за*.

These same relations hold in Czech, with some additional complications. In theory, the Czech preposition *mimo* can be used in the same contexts as the Russian preposition. The Czech preposition, however, has evolved a different primary sense, namely, *to be outside or away from some place*. Here the <-contact> and double <-contour> features have been interpreted as indicating a *lack* of relationship between trajector and landmark:

(29) a. Byl jsem tehdy **mimo** Prahu†
I was not in Prague at that time/I was out-of-town at that time

b. Všichni **mimo** Karla byli tam†
*Everyone **except** Karel was there*

In a sense, then, Czech *mimo* has become a "Separation preposition" rather than a Proximity preposition. Presumably as a result of this, the preposition *kolem* has taken on the function of the Direct Proximity preposition in Czech. This particular substitution should not surprise us, given the previous discussion of Proximity prepositions. Of the two remaining proximity prepositions, the Contour preposition, *podél*, contrasts with the Direct preposition according to the primary distinguishing feature of the prototype meanings for both prepositions: the presence or absence of the feature <contour>. The Encirclement Proximity preposition is <±contour>, thus <contour> is not a distinguishing feature of the preposition. The primary difference between the Encirclement preposition and the Direct preposition is, obviously, the presence or absence of the feature <encircle>. As we saw in Section 2.5.1.1, however, the salience and rarity of the encirclement trajectory, combined with the static use to indicate general proximity, allows the Encirclement preposition to extend readily to direct proximity contexts.

As with Russian *мимо*, *kolem* is also possible in contexts where Contour Proximity prepositions are expected. In these contexts *kolem* simply does not profile the LM contour, indicating merely motion in the (lateral) vicinity of the LM. Since *kolem* is originally an Encirclement Proximity preposition, it (along with the prepositions *около/okolo*) appears to be a general purpose Proximity preposition which often does not realize the trajectory orientation parameters. Despite this, the data indicates that in motion situations *около/okolo* (as well as the more specific *перед/před* 'in front of', *за/za* 'behind', *возле/vedle* 'next to') is relatively rare, and that the preferred Direct Proximity prepositions in Czech and Russian are *kolem* and *мимо* respectively. It is these prepositions that maintain the direct versus contour proximity distinction by contrasting with the prepositions *вдоль/podél*. Therefore, Russian *мимо* and Czech *kolem* are the principal Direct Proximity prepositions; they indicate that a trajector attained proximity with the landmark in the course of motion, but that the trajectory itself was relatively unaffected by the landmark. Russian *под, над, перед, за, возле* and Czech *pod, nad, před, za, vedle* merely refine the notion of proximity in up-down, front-back or lateral planes in relation to either observer perspective (in front/back of) or trajector orientation (above, below, next to) and do not distinguish between the features <direct> and <contour>.

2.5.2 Path Contact prepositions

The only Path prepositions which are <+contact> are Russian *через* 'across, over' and *по* 'on, along', and Czech *přes* 'across, over' and *po* 'on, along'. The Direct Contact prepositions *через* and *přes* describe the most specific (well defined, individuated) trajectories within the preposition system, while the Contour Contact preposition *по/po* describes the least specific (least defined and least individuated) trajectories in the system.

2.5.2.1 Encirclement Contact prepositions: *вокруг, kolem*

As discussed in Section 2.5.1.1, the distinction between Proximity and Contact Encirclement prepositions is not maintained. The presence or absence of contact turns out to be of little significance when the feature <+encircle> is present. The trajectory is fairly well defined independently of the proximity or contact relationship of trajector to landmark, and the verb of motion will clarify whether or not contact of trajector and landmark is involved. The Encirclement Proximity prepositions (Russian *вокруг*, *около* and Czech *kolem*, *okolo*) therefore serve as Encirclement Contact prepositions as well.

2.5.2.2 Contour Contact Prepositions: *по, po*

The semantic features of Russian and Czech *по/po* are <+contact, +contour, +↑contour>. Both the Russian and Czech prepositions exhibit a strong fidelity to landmarks that are clear and obvious examples of surfaces. For humans, movement in contact with a surface is the norm, and the <+contact> feature is generally redundant with manner of motion encoded in the verb. It is significant that *по/po* is specifically <+contour> in two dimensions -- both horizontally and vertically. In other words, the landmark fully determines the contour of the trajectory in both dimensions rather than

in just one dimension. This results in a relative prominence of the landmark itself, which controls the trajectory to a large extent. Thus, *по/po* is a minimally informative preposition that simply indicates that the contours of some LM fully define the TR.

2.5.2.3 Direct Contact prepositions: *через, přes*

The semantic features for Direct Contact prepositions, exemplified by Russian *через* and Czech *přes*, are <+contact, +↑contour, +direct, +span>. Contour, however, is only relevant in the vertical dimension, and this is less salient for humans than lateral contours. Since the feature is derived from the feature <direct>, it might be expected that remains merely a secondary feature. It might also be expected to be equally relevant to the Direct Proximity prepositions *мимо* and *kolem* as it is to Direct Contact prepositions.

Indeed, it is the case that landmarks with the preposition *мимо* and *kolem* are typically spanned by the trajector, but this fact is not especially relevant to the prototype meaning, which highlights only the non-contact relation and the irrelevance of LM contour. In contrast, the <+span> feature is highly relevant to the prototype of Direct Contact prepositions. This fact can be explained by the synergistic combination of the <+span> and <+contact> features, which has the effect of profiling the side-to-side meaning of this preposition. When a trajector moves in contact with a landmark which functions as a support surface for motion *and* the trajector spans that landmark, the trajector also contacts the boundaries of that landmark where it is contiguous with some other surface. For example, when crossing a river, contacting the banks, which clearly demarcate the river on either side, is a salient part of the process. For Direct Proximity prepositions, on the other hand, the <-contact> designation determines that spanning will not come into focus. Although the LM may indeed be proximally spanned, there are no concretely defined sides, other than an extension of an imaginary line from the edges of the spanned object which the trajectory then theoretically intersects.

Another way of saying this is that the trajector is not perceived as being in any particular relationship with the substance (usually air) which borders a proximal LM and, therefore, defines its sides. This contrasts directly with situations involving contact, where the substance contiguous with the landmark not only demarcates the landmark itself, but acts as a supporting surface for the trajector before and after the spanning event. Thus, when a trajector passes proximally from side to side of an object such as a tree or a house, there is no exact point at which the TR is no longer proximal to the LM and has clearly successfully spanned it. In a contact situation, the boundaries of a typical LM are directly contacted by the trajector as they are crossed, conferring increased salience on them and giving a clear definition to the notion of spanning. Thus, although the feature is theoretically relevant for all Direct prepositions, it achieves a special status with the Direct Contact preposition in particular. It is not surprising, then, that the <+span> feature becomes integral to the prototype only for the Direct Contact preposition and not for the Direct Proximity preposition.

Since the Direct Contact preposition highlights spanning, it is not necessary for the Containment preposition to make this distinction either. In practice, as shown in Table 2.2 in Section 2.2.3, above, Russian utilizes contact (or proximity) prepositions such as *через, по*, and *под* to describe scenarios which also involve containment:

therefore, the (and <direct>) distinctions are maintained by these prepositions. Czech may also extend these prepositions, but more often uses the instrumental case, which is unmarked for . The reason for this will be discussed when containment expressions come under scrutiny.

An important effect of the <+span> feature is to downplay the significance of the <+contact> feature, especially since the proximity, contact, or containment relationship is usually clear from the manner of motion. When the spanning of a landmark is in focus, then, these prepositions may be quite insensitive to the TR/LM relation. *Через* and *přes* are thus equally valid for situations involving proximity, contact, and containment; in both languages a single preposition suffices to indicate spanning for all of these situations. Thus, if a trajector is flying over a river, the proximity relation of trajector to landmark is inferred from knowledge about flying, and the use of the preposition *через* or *přes* indicates that the river was spanned in the short dimension.

The data does indicate a notable difference between the prepositions *через* and *přes* in Russian and Czech in terms of preferred landmarks. The Czech preposition *přes* seems to combine almost exclusively with landmarks that are unambiguous surfaces, whereas Russian *через* combines with a wide range of landmarks, many of which are not particularly good examples of surfaces. This difference probably does not represent a restriction on *přes* to particular landmarks, but is rather a reflection of the semantic territory occupied by the instrumental case in Czech. In other words, *přes* could theoretically combine with container-like landmarks, but Czech prefers to highlight features other than spanning with such landmarks (see Section 2.5.3.2). The result is that the spanning preposition *přes* combines primarily with clear-cut examples of surfaces. The lack of a specific (common) Containment preposition in Russian has the effect of expanding the territory covered by *через*.

It might also be expected that the less restricted contact preposition *по* would expand its range equally to, if not more than, *через* to include containment contexts. This is, in fact, not observed. Container-like landmarks are relatively rare in experience. When they do occur, they tend to be objects specifically designed for the purpose of motion (tunnels, doors, etc.) which are almost always spanned by the trajector. Under these circumstances *через* is an appropriate preposition, but *по* is not, since it is unmarked for .

Since *přes* and *через* profile the presence of two sides to a landmark, if the landmark is particularly extended in one dimension, motion is understood to occur across the short dimension of the LM, such that *přes* and *через* are typically opposed to *po/по* in terms of direction of motion. As with Direct Proximity prepositions, however, *через* and *přes* are not restricted to short dimension spanning. In particular, when structural and functional knowledge about the landmark indicates that spanning occurs in the long dimension, *через* and *přes* are easily interpreted as indicating spanning of the LM in the longer dimension. For instance, bridges are typically longer in the dimension in which they cross rivers than they are in width. Nevertheless, the purpose of a bridge is to provide a passageway to the other side of the river for moving figures. Therefore, the expression below is immediately understood to indicate spanning in the

long dimension (which is, notably, a functional spanning of the river in the short dimension):

(30) Мальчик и девочка проехали через мостик
*A boy and girl drove by **across** the bridge*

Notice that *через* in example (30) indicates motion in the same dimension as the opposing Contour Contact preposition in the following example:

(31) Дети бегут по мосту
*The children are running **on/along** the bridge*

2.5.3 Path Containment prepositions

Russian *сквозь* and Czech *skrz*, 'through,' are the only path prepositions which are unambiguously <+contain>. Both are rare; only a few examples of *skrz* (and no examples of *сквозь*) occurred in the database. In practice, Czech uses the instrumental case to distinguish containment. Russian utilizes a variety of Contact and Proximity prepositions in these same contexts, highlighting aspects of the trajector/landmark relationship other than containment. *Через* is the most common of these, since most container landmarks are spanned, but a number of other options are available. These include Proximity prepositions such as *под, над, мимо*, Source/Goal Containment prepositions (*из, в*) and, not least of all, Locational Containment prepositions (such as *в*) with the locative case. Locational containment expressions indicate that motion occurred within a container but leave the path interpretation to be inferred from the presence of a determinate or perfective verb:

(32) Рыба проплыла в воде
*A fish swam by **in the water***

As noted previously, there are no Encirclement Containment prepositions, as a landmark cannot be encircled by a trajector and simultaneously act as a container for that trajector.

Given that Russian does not possess a commonly used Path preposition which distinguishes containment, it is predictable that there is no special mechanism for distinguishing direct and contour containment. Instead Direct/Contour Proximity and Contact prepositions are used (in addition to prefixation, which is explored in later chapters). Czech does typically distinguish containment with the instrumental case. The direct/contour distinction is not retained, however, largely because the functional design of container landmarks makes the nature of the trajectory (including the presence or absence of spanning) transparent.

2.5.3.1 The prepositions *сквозь* and *skrz*

Russian *сквозь* and Czech *skrz* both profile containment of the trajectory within the LM, as well as penetration from one side to the other. In other words, both are

<+span> and therefore qualify as Direct Containment prepositions. In practice, however, they are infrequently used. Since any containment situation may also be perceived as either a proximity or contact situation, and since the additional information provided by manner of motion and the landmark itself ensures that the trajector/landmark relationship is clear, Path Containment prepositions are not really necessary. Instead, a variety of Proximity and Contact prepositions can be used to highlight the relevant features. *Сквозь* and *skrz* are therefore used only when containment is truly in focus. Additionally, they often indicate that the landmark actually prevents easy passage:

(33) Они продирались в полной темноте сквозь чащу†
*They forced their way **through** the thicket in complete darkness*

This is in direct contrast, as we will see, to the Czech instrumental case, which often highlights ease of motion due to the presence of an explicit passageway.

2.5.3.2 The Instrumental case

Both Czech and Russian may express the landmark in the instrumental case to indicate containment. This is common, however, only in Czech. It did not occur at all in Russian in the data analyzed here. Instead, as previously noted, Russian utilizes Contact or Proximity prepositions such as *через, по*, and *под* to describe scenarios which might also be construed as involving containment:

(34) Машина проехала через туннель
*The car drove **through** the tunnel*

Since Russian uses primarily Contact and Proximity prepositions with container landmarks, the direct (spanning)/contour distinction is obviously maintained. Czech may also extend these prepositions, but more often uses the instrumental case, which is unmarked for . At this point we may consider why the instrumental case is used at all, given that containment paths are generally rare and that containment is always compatible with either a proximity or contact interpretation. Additional information concerning manner of motion contributed by the verb and knowledge about individual landmarks makes the containment distinction obsolete for Path prepositions.

A closer analysis of the landmarks used with the Czech instrumental case indicates that these landmarks may all be classified as FUNCTIONAL PASSAGEWAYS. In other words, certain landmarks, such as gates, tunnels, and doorways, are designed to function as passageways for (human) figures, and this functional knowledge about landmarks receives linguistic expression through the use of the instrumental case. Additional evidence for the significance of the concept of passageway in Czech comes from the presence of special adverbs (which are not present in Russian) expressing this same notion: *kudy* 'which way', *tudy* 'this way,' *jinudy* 'another way', etc. The same ideas in Russian would require two word locutions (notably in the instrumental case): *каким путем* 'which way,' *таким путем* 'this way,' *другим путем* 'another way,' etc.

Due to the primacy of this functional criterion, the instrumental case may be applied to landmarks which, in fact, are clearly *not* good examples of containers (e.g. a street) simply because they are functionally designed for the purpose of easy motion. Nevertheless, the Contact preposition *po* was much more common in the data with such surface passageways than the instrumental case, indicating that containment versus contact is still relevant to the selection of the instrumental case as opposed to some other preposition. Also, despite the centrality of the functional interpretation of the landmark as a passageway, the Czech instrumental is still a valid expression of containment, since it is also used with landmarks that are *not* usually viewed as functional passageways. These landmarks, which will be distinguished from the passageway interpretation by the term MEDIUM, are things like water for a swimming trajector or air for a flying trajector. Such media clearly contain the trajector, but they cannot be considered functional passageways by design. The distinction between the passageway and the medium interpretation, it should be noted, is more or less equivalent to a proximity/contact distinction, since functional passageways are landmarks which are not contacted by the trajector (and, in fact, they often provide holes through otherwise unnavigable terrain), whereas in the case of a medium the trajector is in direct contact with the medium which contains it.

Both the passageway and the medium interpretations of the instrumental, however, have the function of presenting the landmark as a means (or instrument) of motion: a specialized method or route for getting somewhere. Strangely this is almost a reified notion of Path itself, seemingly redundant with the entire concept of a Path preposition. Indeed, although the majority of landmarks with the instrumental case in the data are best described as containers, this may be in part due to the objective nature of the task of describing motion scenes which are primarily devoid of narrative content, since landmarks that are unlikely candidates for container construal are, theoretically, quite acceptable with the instrumental case in Czech. Thus, the instrumental case in Czech conveys functional information about the landmark in addition to the structural notion of landmark as container. Russian, in contrast, is much more concerned with the structural relationship between trajector and landmark. Russian speakers thus select appropriate Contact and Proximity prepositions in these same contexts. For instance, given an archway as a landmark, 80% of the Czech examples were in the instrumental case, as in:

(35) Holčička prochází **branou-INSTR**
*A little girl is walking **through the gate***

(The remaining examples all involved the Containment preposition *skrz*, with the exception of one example with *přes*.) Russian, in contrast, had 26% of the examples with the Proximity preposition *под* and 23% with the Contact preposition *через*, 17% in the accusative case with the prefix *про-*, 14% each with the Source/Goal Containment prepositions *из* and *в*, and a few examples with the Proximity preposition *мимо*, as exemplified by the following sentences:

(36) a. Попугай пролетел под воротами
*A parrot flew **under** the gate*

b. Змея проползает через арку
*A snake slithered **through** the arch*

c. Человек проходит ворота-ACC
*A person is walking **through the gate***

d. Девочка вышла из ворот
*A girl came **out of** the gate*

e. Девочка прошла в ворота
*A girl walked by **into** a gate*

f. Девочка проходит мимо ворот
*A girl is walking by **past** a gate*

Given the primacy of functional criteria in the interpretation of the Czech instrumental case, it is not surprising that the distinction between <direct> and <contour> is not maintained. Serving functionally as a means or passageway for motion does not give any indication as to whether the landmark is spanned (although objects *designed* as passageways typically are). Furthermore, general knowledge concerning the landmarks which serve as the defining passageways generally provides all the information necessary to determine which dimension of the landmark is relevant and whether or not it was spanned. For instance, given the following expression, functional knowledge of tunnels makes it quite obvious which dimension of the tunnel the trajectory relates to (here, the long dimension), and that it is spanned (tunnels are generally of limited length and are not designed for habitation or other activities, but rather for passage to the other side):

(37) Auto projelo **tunelem-INSTR**
*The car drove **through the tunnel***

In the next expression, however, while it is clear that the river is serving as a medium for motion, spanning either did not occur, or is irrelevant:

(38) Ryba plave **řekou-INSTR**
*A fish is swimming **through (by means of) a river***

And finally, in contrast to this, the verb of motion and knowledge concerning cars, driving, and rivers, make it clear that in the following example the river is spanned, and in the short dimension:

(39) Kluk v autě projel **řekou-INSTR** nebo **potokem-INSTR**
*A boy in a car drove **through (forded) a river or stream***

Given the focus of the instrumental case on the medium or means of getting somewhere, a distinction between <direct> and <contour> for the expression of containment in Czech is unexpected. (Nevertheless, when it is deemed necessary to highlight spanning, Czech, like Russian, has recourse to the Direct Contact preposition *přes* or the Direct Containment preposition *skrz*.)

In summary, the Czech instrumental case profiles the landmark not simply as a container, but as either a medium or a passageway for motion. The medium construal and the passageway construal are flip sides of a coin: medium implies that the LM is also in contact with the trajector, while passageway implies that the LM is proximal and acts as a guide for motion, allowing the figure to pass along it with ease. This last interpretation is most common in Czech and occurs with landmarks (like tunnels and arches) which encircle the figure at some point in the path and define passageways specifically intended for, or conducive to, motion.

2.5.4 Some omitted prepositions

Russian *между* and Czech *mezi*, 'among, between,' may both be considered ambiguous with regard to a proximity or containment interpretation of the landmark/ trajector relation. Similarly, they may indicate something which resembles either direct or contour trajectory orientation. Landmarks for these prepositions are multiple (two or more) and individuated, and the trajector is never in contact with the landmarks (hence a proximity interpretation). If there are very many landmarks surrounding the trajector, however, a containment interpretation is also possible. Indeed, *между* and *mezi* are often alternatives to a containment expression with an unindividuated landmark for depicting the very same visual scenes, as in the following Czech examples:

(40) a. Pes běžel **lesem-INSTR**
*The dog ran **through the forest***

b. Pes probíhá **mezi** stromama
*The dog ran **among the trees***

The fact that a path containment expression and *mezi* can both be used to describe the same scene does not of its own accord indicate a containment interpretation. Further evidence for the neutrality of *между* and *mezi*, however, comes from the use of prefixes with the prepositions. Russian *между* occurs exclusively with unprefixed verbs or with the prefix *про-*, which will be shown later to profile containment. Czech *mezi* occurs primarily with unprefixed verbs or with *pro-*, but included one occurrence with the prefix *pře-* as well. These facts suggest that *между* and *mezi* are suitable for either proximity or containment interpretations. Furthermore, when this preposition is used with only two objects, it structurally resembles the passageway interpretation which is expressed in Czech by the instrumental case alone:

(41) a. Někdo projel **mezi** dvěma stromy
*Someone drove **between** two trees*

b. Holčička prochází **branou-INSTR**
*A girl is walking **through the archway***

Russian, which does not use the instrumental case in passageway situations, typically uses *через* for this purpose, which is also ambiguous with regard to a containment interpretation:

(42) a. Собака пробегает между двух деревьев
*A dog is running by **between** two trees*

b. Девочка проходит через арку
*A girl is walking by **through** the archway*

The difference is that the two trees are recognized as two individuated objects of the same type rather than a unified object (which can therefore act as an integrated container designed as a passageway). The trees are thus considered to be related to the trajector in a different manner than the archway. The two trees as landmark, therefore, cannot be expressed in the instrumental case in Czech or with *через* in Russian.[13] With multiple individuated landmarks, other existing Proximity prepositions such as *мимо* and *вдоль* are not specific enough, since they would not indicate that the trajectory was located internally to the group of landmarks. Thus, the previously discussed prepositions used to express either proximity or containment relations are not suitable for situations with multiple landmarks.

When there are only two landmarks and the trajectory passes directly between them, the use of *между/mezi* approximates that of a Direct preposition. When the trajectory passes among many landmarks, identifying a spanning relationship to them all collectively is more difficult. In such instances *между/mezi* would seem to resemble Contour prepositions. Unless the number of landmarks is also overtly specified, the interpretation remains ambiguous.

The existence of a preposition which requires two or more landmarks and conflates a proximity and containment interpretation leads one to ask what happens in a contact situation with multiple landmarks. This is a rather different case, since a single trajector which contacts several (surface) landmarks must contact them serially. Therefore, the landmarks themselves define a fictive trajectory along which the trajector moves, contacting only the landmarks. The preposition *по/po* serves quite well for this purpose, since the use of a plural form for the landmarks makes the serial contact relationship obvious. The trajectory follows the contour defined by the multiple

[13] *Через лес 'across/through the forest,'* is quite possible in Russian, but *через деревья 'across/through the trees'* in this same meaning is marginal at best, since *через* implies contact and/or containment, and the trees are individually not in a contact or containment relationship with the trajector as it moves through the forest. Therefore a preposition neutral with respect to proximity and containment is necessary.

landmarks. This is precisely in line with the function of *по/po* with single landmarks to indicate that the trajectory traces the surface contour of that landmark. Thus, there is nothing ambiguous about using *по/po* with multiple landmarks, and there is no need for a separate preposition expressing contact with multiple landmarks:

(43) Turisté šli přes řeku **po** kamenech†
*The hikers crossed the river **on** the stones*

This could be regarded as a spatial basis for the distributional use of *по/po*, where there is a one to one correspondence between trajector(s) and multiple discrete landmarks, and/or uses where multiple landmarks define a path by connecting the objects:

(44) ходить по магазинам
go around to all the stores (one after the other)

It may also account for the use of *po* to indicate successive order in Czech:

(45) a. Jak jdou **po** sobě dny v týdnu? †
What is the order of the days of the week? (How do the days of the week go after one another?)

b. Cestující nastupovali do vlaku jeden **po** druhém†
The travelers got on the train one after the other

2.6 Interactions among semantic features

Landmarks for Path prepositions tend to impose more limitations on the course of motion than do landmarks with Source and Goal prepositions, since path landmarks help to define the internal structure of the trajectory. Both trajectory orientation features and trajector/landmark relational features may be interpreted as providing a rough measure of TR/LM intimacy and, therefore, degree of influence that the TR and LM exert over one another. Thus the TRy orientation features <direct>, <contour>, <encircle> are listed (more or less) in order of increasing expression of LM influence over the TRy. Similarly, <proximity>, <contact>, <contain> are also ordered to express increasing LM influence. Nevertheless, these features interact with each other and other aspects of context to complicate this picture.

2.6.1 The trajector/landmark power dynamic

Contour has been defined here as the relevance or contribution of the LM contour to determination of the trajectory contour. Prepositions which are <+contour> therefore indicate that the trajectory is in some way defined according to LM properties or proportions. Path prepositions may also express the implied feature <vertical contour>. The defining properties of the LM will, of course, depend on the individual landmark and will vary greatly from one instance to the next. For example, with a

Proximity preposition, a landmark which is straight along its lateral contour adds little to the notion of trajectory contour, even when the preposition itself is <+contour> (cf. *идти вдоль стены* 'walk along near a wall'). Similarly, a Contour Contact preposition may provide little information about a trajectory on a broad, extensive surface that does not constrain the trajector in the lateral dimensions (cf. *идти по земле* 'walk along on the ground'). What is important in these cases is not the actual contour of the trajectory, but rather the notion that *the trajectory is completely constrained by the dimensions, or contours, of the landmark.*

As mentioned briefly in Section 2.4.2.1, this may be described as an expression of a power dynamic between trajector and landmark in determining the course of motion. At one extreme lies the Direct Proximity preposition (*мимо, kolem*), which is <-contour> in both horizontal and vertical dimensions, indicating that the trajector is unconstrained by the landmark. At the other extreme is the Contour Contact preposition (*по/po*), which is <+contour> in both dimensions, indicating that the trajector is fully constrained by the landmark in all dimensions. Thus, the Direct Proximity preposition may be considered trajector-centered, whereas the Contour Contact preposition is more landmark-centered. (Notice that in theory the Contour Containment preposition is also <+contour> in both dimensions. In Russian there is no separate preposition, however, and in Czech the instrumental case does not distinguish between direct and contour contexts, so the Contour Contact preposition remains the most landmark-centered morpheme.) In Chapter 5 we will see that this landmark-centered aspect of *по/po* is related to the fact that the prefix *по-/po-* is frequently a semantically empty perfectivizing prefix.

Contact prepositions appear to be more intimately connected to landmark contour than Proximity prepositions; when there is contact, the trajectory is bound to the landmark in one dimension. If the LM is never contacted, its contours need not be relevant in determining the trajectory. Nevertheless, we have already noted that this kind of surface contour is relatively uninteresting to humans, as it is simply a given. Constraint on movement in the vertical dimension is the norm for human beings, whereas constraint in the lateral dimension represents a more significant restriction. Landmarks which control trajectories in lateral dimensions, therefore, are interpreted as having a greater effect on trajectory than landmarks which control movement in a vertical dimension.

As a result of the salience of lateral contour, Direct prepositions will generally be the most trajector-centered, whereas Contour prepositions will be the most landmark-centered. For this reason the Direct Contact preposition (*через, přes*) may be considered more trajector-centered than the Contour Proximity preposition (*вдоль, podél*), despite the fact that they are both <+contour> in one dimension only. Encirclement trajectories are actually ambiguous with respect to trajector/landmark control. When a landmark is encircled, it often fully determines the lateral contours of the trajectory. A trajector, however, may engage in circular motion independently of any landmark and still encircle a landmark in the process. For this reason Encirclement prepositions are <±contour>, although in practice they are usually <+contour>.

2.6.2 Opposed prepositions

The interaction of the TRy orientation features and the TR/LM relational features can now be related to prominent semantic oppositions in the preposition systems. The salience of lateral contour makes the Contour Proximity prepositions (*вдоль, podél*) the preferred prepositions when unusual lateral contours are in focus, since these prepositions are <+(lateral) contour> only. We have noted that this allows them to extend to contact situations as well. Similarly, the <+span> (and <+direct>) feature is highlighted for the Direct Contact prepositions (*через, přes*), such that these prepositions also extend to proximity on occasion. In this sense *вдоль, podél* are semantically opposed to *через, přes* as prepositions which focus on <+contour> versus <+direct, +span> rather more than on proximity and contact relations. In contrast, Direct Proximity prepositions (*мимо, kolem*) and the Contour Contact preposition (*по, po*) show extremely high fidelity to the <+proximity> and <+contact> features, respectively, and are thus opposed to each other for these features. We have also seen that they are opposed to each other as extremes in terms of the relevance of LM contour to the trajectory.

2.6.3 Semantic features and landmarks

In most cases, the effect of combining a particular preposition with a particular landmark is immediately obvious to the native speaker through inferences generated from both linguistic knowledge of the preposition and general knowledge about properties of the landmark itself. The mechanism of this is worth examining a little more closely. Contact prepositions, as we have noted, automatically provide some vertical contour information simply because the landmark acts as a support surface for the trajectory; the path of the trajector is doomed to reflect the undulations of that surface in the up-down dimension. (To get over a hill, for instance, a walking trajector will normally take a trajectory which follows the upward, then downward, contour of the ground rather than digging through to the other side in a perfectly horizontal trajectory.) For example, when the Russian Direct Contact preposition *через* occurs with a landmark possessing a significant vertical component, there may be quite a bit of contour conveyed by the preposition/landmark combination, as exemplified by (46) below, but this information is generated by inference from the features <+contact> (i.e. the trajector must follow the surface contour of the LM) and <+span> (the trajector must move from one side of the LM to the other):

(46) Инопланетянин перелез через гору
An alien climbed over the mountain

Example (46) describes a direct trajectory across the top of a mountain from one side to the other -- not movement around it (proximity), or through it (containment) -- so one may *infer* a significant vertical component to the trajectory, as well as effort expended on the part of the trajector. (Vertical contour is defined as an implied feature precisely because it is inferred from another, more basic feature.) Example (1)a (repeated below), on the other hand, suggests little, if any, vertical component to the trajectory:

(47) Змея ползет через дорогу
*A snake is slithering **across** the road*

In the following Czech example, the preposition *přes* also conveys a significant vertical contour:

(48) Kůň skáče **přes** ohradu na cestu
*The horse jumps **over** the fence onto the road*

It might be argued that the horse in this example probably never contacts the fence. Nevertheless, the horse follows the vertical contour of the fence quite closely and spans it in the short dimension. Thus, a Direct Proximity preposition (*kolem*), which cares neither about contour nor about spanning, would be inappropriate. Furthermore, the horse is generally moving in contact with a surface and contacts the surface on either side of the LM, thus the contact preposition is fully appropriate. Finally, the verb *to jump* itself makes the actual non-contact relationship with the fence transparent. Example (48) is thus analogous to previous examples with flying, where Direct Contact prepositions are extended to non-contact situations when the motion verb itself makes the relationship clear.

The point of these observations is that one need not posit a set of different submeanings for usages that involve a vertical component or that do not directly contact the LM, etc. These meanings are completely transparent based on the <+span> and <+contact> designation of the preposition, combined with structural (and often functional) knowledge about the LM and knowledge about manner of motion. One reason for making this point is that when abstract uses of prefixes and prepositions are examined, typically a number of specialized submeanings are posited for each one. Janda (1986) proposed that such submeanings could be metaphorically based on spatial images which reflect just these kinds of landmark transformations, among other things. The analysis presented here is compatible with this notion, but later it will be argued that the crucial link between such images and abstract uses of prepositions and prefixes is provided by the inferences these images produce rather than by their structural spatial properties per se. Using LM frequency data to reconstruct semantic features relevant to preposition prototypes also suggests that it is unnecessary to consider any single image or LM type as basic. Rather, various images result naturally from applying linguistic features to context. Although some images or LM types are more common in spatial uses of prefixes and prepositions, this does not imply that abstract uses will be preferentially based on these LM types. Instead, abstract prefixes and prepositions will favor inferences which are useful in the widest range of contexts.

These ideas will be discussed in greater detail in later chapters. For current purposes it is sufficient to note that inferences concerning the degree of trajector/landmark control over trajectory will have particularly interesting consequences in extended and abstract uses of prepositions and prefixes. A simple example of this is provided by the use of Czech *mimo* to indicate absence of the trajector from a landmark or vice versa. In this case a trajector which is unaffected or uncontrolled by a landmark may effectively be considered in non-relation to it. In

contrast, the fact that the course of action is entirely determined by landmark features is the direct antecedent for at least one abstract meaning of *по* in Russian, namely, *according to (the specifications of the instantiated LM)* (cf. *по расписанию* 'according to schedule,' *чемпионы по хоккею* 'hockey champions,' i.e. champions according to the specifications of the sport of hockey, etc.)

2.7 Summary of Path Prepositions in Czech and Russian

The preposition classification chart can now be simplified a final time to reflect these new observations and account for the actual distribution of prepositions (and cases) we see in Czech and Russian:

Table 2.7. Classification and prototype spatial semantic features of Path prepositions in Czech and Russian

	TR/LM relation		
TR/ orientation	Proximity	Contact	Contain
Direct	-contour *мимо* -↑contour *kolem* -contact *'past'*	+span *через* (+direct) *přes* (+contact) *'across'*	+contain *(сквозь) через, по, под,* etc. *(skrz)* INSTR *'through'*
Contour	+contour *вдоль* (-contact) *podél* *'along'*	+contour *по* +↑contour *po* +contact *'along on'*	
Encircle	+encircle *вокруг* *kolem* *'around'*		N/A

The preceding discussion of Path prepositions has shown that, by examining the frequency of preposition/landmark combinations with verbs of motion, the principal distinguishing features for the spatial prototypes of prepositions can be discerned. We have seen that the features <proximity>, <contact>, and <contain>, which distinguish among Source and Goal prepositions, are also relevant for Path prepositions, with some added complexities. Path prepositions may be further classified according to trajectory orientation with respect to the landmark during the course of motion -- as <+direct>, <+contour>, or <+encircle>. The resultant classification of Path prepositions serves to illuminate the relevant spatial semantic features for each preposition and demonstrates the systematic nature of the semantic oppositions which they express.

Chapter 3. Source and Goal Prefixes in Czech and Russian

3.1 Classification of prefixes

Prefixes, like prepositions, may be classified according to the features <source>, <goal>, and <path>, depending on whether they designate a closer spatial relationship of trajector and landmark at the source point of motion, goal point of motion, or during the course of the trajectory. A primary difference between prefixes and prepositions is the degree of freedom they exhibit regarding landmark reference (and occasionally trajector reference as well). Whereas prepositions state a relation between the trajector and a landmark which is always explicit as the complement of the preposition, prefixes may or may not share the same LM which acts as LM for a preposition. In the latter case the LM may be explicit as the complement of the verb (without an intervening preposition), or the prefix may refer to an LM which is not explicit in the linguistic expression at all, but which may be inferred from context, linguistic or otherwise.

For most of the prefixes, classification as Source, Goal, or Path prefix is straightforward, and is often iterated by the frequency of correlated Source, Goal, and Path prepositions which co-occur with the prefixes (see Tables 3.1 and 3.2). In a few instances (Russian *y-*, marginally Czech *od-*) the frequency of Source, Goal, or Path prepositions does not align with the designation of the prefix itself; this does not, however, obscure the basic Source, Goal, or Path orientation of the prefix itself. Only one prefix (Russian *по-*), appears ambiguous regarding its classification as a Source, Goal, or Path prefix. This chapter deals only with clear examples of Source and Goal prefixes (Russian *y-, при-, от-, под-, вы-, в-, с-, за-, до-*; Czech *od-, při-, vy-, v-, s-, za-, do-*), leaving Path prefixes (Russian *про-, пере- о(б)-*; Czech *pro-, pře-, o(b)-*) and Russian *по-* for later chapters. In contrast to Path prefixes, Source/Goal prefixes with verbs of motion do not have linguistically explicit LMs as verbal complements in the accusative or instrumental case, but only as complements of prepositions.

3.2 Co-occurrence of prefixes and prepositions

An analysis of the frequency with which prefixed verbs of motion combine with prepositional phrases expressing <source>, <path>, <goal>, <proximity>, <contact>, <contain> allows a classification of prefixes according to the primary kinds of relationships they describe. Tables 3.1 and 3.2 give the percentage of Source, Goal, or Path prepositions which combined with each of the Source and Goal prefixes to be examined in this chapter, as well as the percentages of occurrence of that prefix without modification by a prepositional phrase (no PP). For Source prefixes the Source prepositional phrases have also been analyzed regarding expression of the features <proximity>, <contact>, <contain>, and for Goal prefixes, the Goal prepositional phrases have been examined according to these features.

Table 3.1. Frequency of prepositional phrase (PP) types with Russian and Czech Source prefixes[1]

Source prefixes	no PP	Source PP	Goal PP	Path PP	Prox PP	Contact PP	Contain PP	?
Russian вы-	17%	70%	16%	1%	3%	5%	85%	8%
Czech vy_1-[2]	13%	62%	19%	5%	3%	4%	91%	2%
Russian с-	21%	66%	6%	13%	0%	100%	0%	0%
Czech s-	16%	48%	8%	28%	0%	90%	3%	7%
Russian от-	3%	95%	1%	1%	100%	0%	0%	0%
Russian у-	79%	6%	11%	4%	15%	18%	20%	47%
Czech od-	70%	15%	10%	5%	5%	6%	2%	87%

Table 3.2. Frequency of prepositional phrase (PP) types with Russian and Czech Goal prefixes

Goal Prefixes	no PP	Source PP	Goal PP	Path PP	Prox PP	Contact PP	Contain PP	?
Russian в-	0%	0%	100%	0%	2%	16%	80%	2%
Czech v-	0%	1%	100%	5%	2%	9%	87%	2%
Russian за-	1%	0%	90%	8%	6%	33%	54%	7%
Czech za-	0%	0%	100%	8%	13%	0%	80%	7%
Czech vy_2-	4%	6%	87%	17%	2%	76%	12%	10%
Russian под-	5%	1%	96%	1%	100%	0%	0%	0%
Russian при-	42%	16%	58%	0%	36%	36%	18%	9%
Czech při-	16%	16%	67%	10%	63%	32%	3%	2%
Russian до-	11%	0%	89%	6%	0%	100%	0%	0%
Czech do-	11%	2%	89%	4%	36%	44%	17%	3%

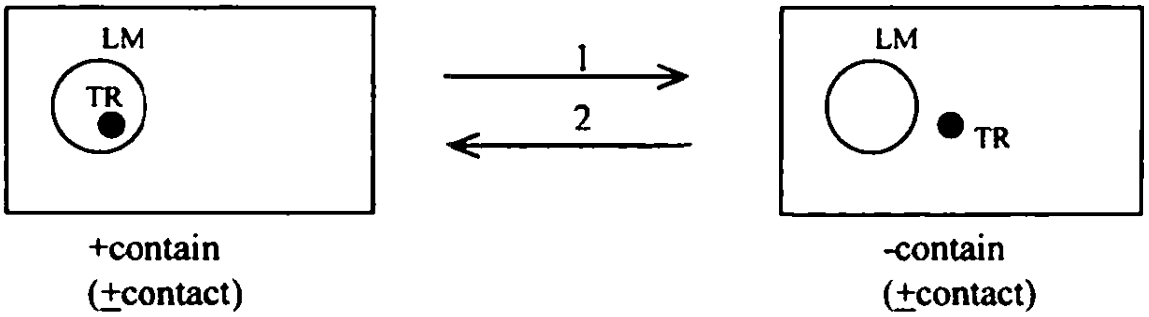
Note: Columns labeled *Source PP, Goal PP, and Path PP* give percentages of prefixed verbs of motion which occurred with either a Source, Goal, or Path prepositional phrase, respectively. *No PP* indicates the absence of a prepositional phrase. *Prox PP, Contact PP*, and *Contain PP* give percentages of Source prepositions (for Source prefixes) or Goal prepositions (for Goal prefixes) expressing proximity, contact, or containment relations with their landmark complements, as described in the previous chapter. The column labeled ? indicates indeterminate proximity, contact, or containment values.

[1] Percentages of Source, Goal, and Path prepositional phrases plus expressions without prepositions may total over 100% because some expressions have more than one prepositional phrase per verb token, i.e. a speaker may express both a source and a goal, or both a path and a goal, for a single motion verb. Proximity, Contact, Containment figures always total 100% because they apply only to the Source prepositions for Source prefixes and only to the Goal prepositions for Goal prefixes.

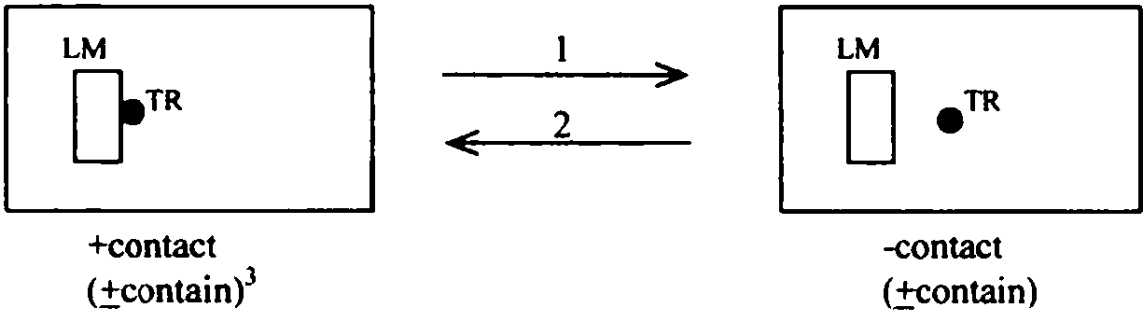
[2] Czech *vy-* has two distinct meanings, a source containment sense '*out*,' (designated here vy_1-), which correlates directly with Russian *вы-*, and a goal sense meaning '*up*,' (designated here vy_2-). The appropriate sense is almost always clear from context in the data, and thus the two senses have been separated and treated as two distinct prefixes for the purpose of classification.

3.3 Source/Goal prefix classification with verbs of motion

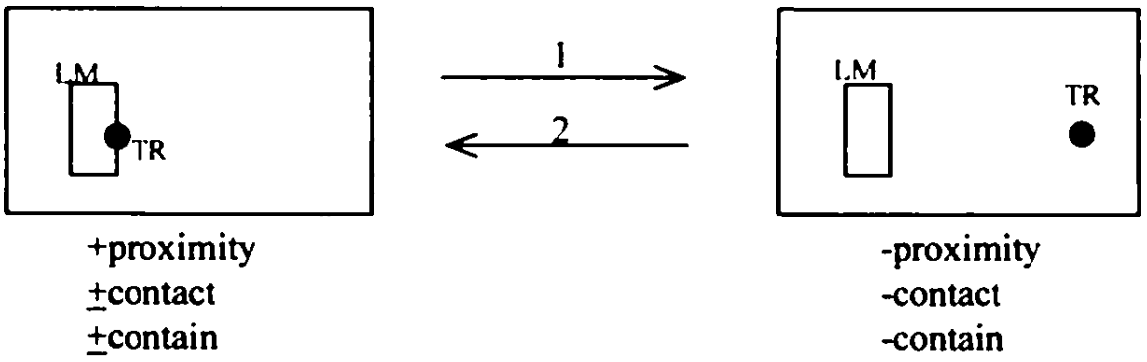
Given the Source/Goal classification and the relations of proximity, contact, containment, there are three basic scenarios described by Source/Goal prefixes combined with motion verbs, summarized by the schematic diagrams in Figure 3.1.



a. Containment schema: Source prefixes (1) *вы-/vy-*; Goal prefixes (2) *в-/v-, за-/za-*



b. Contact schema: Source prefixes: (1) *с-/s-*; Goal prefixes (2) *за-, вы-*



c. Proximity schema: Source prefixes (1) *у-, от-/od-, и-*; Goal prefixes (2) *при-, под-/při-*

Figure 3.1. Spatial schemata for Source/Goal prefixes with Motion Verbs

[3] Although the designation is theoretically <±contain> at both source and goal states, in nearly all cases the designation will be <-contain>. This is due to the fact that containment is a highly salient relation, and its presence almost always provokes the use of a Containment prefix.

The Proximity schema (Figure 3.1c) can be further subdivided for Russian to include a schema which is specifically <-contact, -contain> at both source and goal points of motion, since Russian maintains two sets of prefixes for the Proximity schema. The prefixes *от-* and *под-* are thus <+proximity, -contact, -contain> at source and goal points respectively, whereas the prefixes *у-* and *при-* are minimally <+proximity> at source and goal points respectively but may also make reference to the contact or containment status of the trajector. *У-* and *при-* are thus truly <+proximity, ±contact, ±contain> at source and goal points respectively, as indicated in Figure 3.1c:

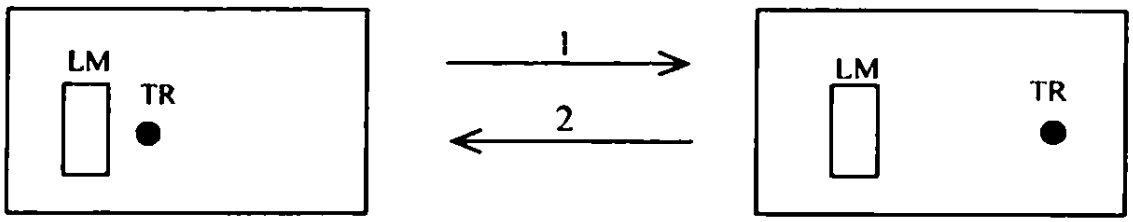
(1) Собака от-бежала от дерева
*The dog **ran away** from the tree*

(2) *Мальчик от-ошел из дома
*The boy **walked away** out of the house*

(3) Птица у-летела от дерева
*The bird **flew away** from the tree*

(4) Мальчик у-шел из дома
*The boy **left** (from inside) the house*

(The difference between (1) and (3) will be discussed shortly.) Czech, on the other hand, does not make this distinction; the prefixes *od-* and *při-* suffice to express both of these subdivisions of the Proximity relation. This subdivision of the Proximity schema shows up clearly in the data, where *от-* and *под-* both exhibit 100% proximity relations with source and goal LMs respectively, whereas *при-* and *у-* show flexibility in combining with prepositions indicating proximity, contact, or containment relations with the LM. This subdivision of Figure 3.1c can be diagrammed as follows:



S/G: +proximity
-contact
-contain

S/G: -proximity
-contact
-contain

Figure 3.2. Subdivision of the Source/Goal Proximity schema in Russian. Proximity subschema (i): Source prefix (1) *от-*; Goal prefix (2) *под-*

Although Czech does not possess this particular distinction, there is marginal maintenance of a proximity subdivision for the more specific proximity prefixes *před-* 'in front of', and *za-* 'behind', as well as for Russian *за-* 'behind':

(5) a. Auto **za-jelo** za dům
*The car **drove (to) behind** the house*

b. Holčička běží na most a chlapeček ji **před-bíhá** na mostě...
*A little girl runs onto a bridge and a little boy **overtakes** her on the bridge...*

For these prefixes the goal state is <+proximity>, and an additional feature must be added to refine the notion of proximity, namely <+in front> (for *před-*) and <+behind> (for *за-/za-*). In both cases only the goal relation is maintained in the prefix system. In general, there are fewer Source prefixes (and Source prepositions) than Goal prefixes (and Goal prepositions) in both Czech and Russian. Given the rarity and specificity of the prefixes *за-/za-* and *před-*, it is hardly surprising that no corresponding Source prefixes of this type exist. Furthermore, while the sense of *за-/za-* may be either relative or absolute (that is, *behind* may be defined from the point of view of a theoretical conceptualizer, if not an actual viewer, who loses sight of some trajector behind a landmark, or it may be defined by the orientation of the LM itself), Czech *před-* is not relative in this sense; it refers to the front end of a moving landmark as defined by the direction of motion. It is also restricted to the verbal roots *běžet* 'run' and *jet* 'ride, go by vehicle,' since ***před-ejít*** 'ahead-walk' is used mainly in the temporal sense 'to precede.' Thus, *před-* is quite restricted in its usage as a spatial prefix with verbs of motion. Czech, therefore, maintains a Proximity subschema primarily with the spatially restricted Goal Proximity prefix *za-*. Interestingly, although Czech also maintains a Proximity prefix *pod-* 'under', this prefix is most often used as a Path prefix in the data, indicating that the trajector has passed by underneath an LM. *Před-* is, in fact, slightly ambiguous in this regard, as it necessarily indicates that the trajector passes the LM in order to end up in a position in front of it. In other words, it is not appropriate to use *před-* to indicate motion towards an LM which is moving in the opposite direction as the TR, but only if it is moving in the same direction, and the notion of overtaking the LM, as in a race, or cars passing on a highway, is integral to the sense of *před-* when used with motion verbs:

(6) V posledním okamžiku Jágr **před-jel** obránce a vstřelil puk do branky†
*At the last moment Jágr **passed** the defenseman and shot the puck into the net*

Both Czech *za-* and Russian *за-* are comparatively uncommon in the database in connection with the proximity sense 'to move behind (an LM)', but this may simply reflect the number of appropriate contexts for this usage which appeared in the films. *За-/za-* appears most often as a Goal Containment prefix comparable to *в-/v-*. Possible reasons for this will be discussed below.

3.4 Some properties of TR/LM relational features

At this point it should be noted that contact and containment stand in an essentially equivalent relationship to proximity in terms of spatial progression towards a goal or away from a source. In other words, a figure may move from a position of

separation to one of proximity, and then to one of contact or, alternatively, from separation to proximity to containment, and this order of relations will always obtain (i.e. a figure cannot move from separation to containment without first achieving the status of proximity to the LM). This chain of relations suggests what is described by the three figures above: that containment and proximity may define an opposition, as may contact and proximity, and finally proximity and separation. (Although separation and contact/containment may also define an opposition, as sometimes occurs with the prefixes *при-/při-* and *у-/od-*, this opposition is not differentially marked by any prefix, i.e. *при-/při-* and *у-/od-* may also designate the separation/proximity opposition.)

As noted in Chapter 2, contact and containment frequently co-occur, since most trajectors move in contact with a surface, whether or not they may be construed as being inside a container. Thus, contact and containment are often ambiguously related.[4] The result is that, where a move from contact to containment or the reverse occurs, it is often a given and, furthermore, typically involves contact and containment with entities which are considered two distinct LMs. As long as the LM entities are distinct, even if a prefix indicating a move from contact to containment existed, it would not apply, since prefixes typically relate a trajector to a conceptually unified LM. Thus, unsurprisingly, there is no prefix which designates a move from a state of contact to one of containment or vice versa. Presumably this is too specific (and ambiguous) and rarely occurs in experience. In fact, it is difficult to imagine many plausible scenarios in which a figure moves from a position of containment within a landmark, to a position of non-containment but contact with that same landmark or vice versa. Where this does occur, the relation appears to be obvious and unnecessary to specify, as in:

(7) Mimozemšťaň **vy-lezl** z sopky
*The alien **climbed out** of the volcano*

After the figure is out of the volcano, it is in fact on the surface of the volcano, but this is obvious from the location of the opening at the peak of the volcano, the fact that the figure is moving in contact with a surface, and the lack of containment at the end state indicated by the Source Containment preposition. There is little need, therefore, to emphasize that the trajector is now in contact with the slope of the volcano, since this is readily inferred from context. When the speaker wished to give a more explicit description of this particular scenario, a finer grained terminology was used to conceptually disintegrate the LM (the volcano) into constituent parts:

(8) Mimozemšťaň **vy-lezl z jícnu sopky**
*The alien **climbed out of the mouth of the volcano***

[4] Containment may or may not entail contact. Correspondingly, in theory contact may or may not involve containment. In fact, however, when a shift in contact relations is highlighted, the relation is nearly always <-containment>. As noted previously, this occurs because containment is highly salient and its presence routinely provokes a Containment prefix.

When two distinct landmarks are referenced for contact and containment relations, a Source (or Goal) Containment prefix may be combined with a Goal (or Source) Contact preposition, respectively, to indicate contact at the final state:

(9) Мальчик вышел из дома на улицу
*A boy walked **out of the house onto the street***

The use of Goal prepositions with Source prefixes is fairly common for the Source Containment prefix *вы-/vy₁-*. In contrast the use of Source prepositions with the Goal Containment prefix *в-/v-* is extremely rare. This turns out to be true for all contrasting Source and Goal prefixes; the Source prefixes combine more readily with Goal prepositions than do Goal prefixes with Source prepositions. This may be primarily because both Russian and Czech (and perhaps most languages) are goal oriented in narrating motion events. Presumably speakers tend to describe motion events in chronological order, and any goal LM (or path LM) from one piece of narrative is retrievable from context as the source point for the next motion event in the narrative and need not be restated:

(10) Jeli lesem, a pak **vy-jeli** na silnici
*They rode through the forest and then they **came out** onto the road*

In this example the figures were taking a short-cut through a forest without a road, thus the forest can be assumed as the contextually relevant container and it is not necessary to specify it (*vy-jeli z lesa* 'they came out of the forest'). Instead new information about the goal surface is imparted (*vy-jeli na silnici* 'they came out onto the road').

Given this situation, it is perhaps surprising that there are prefixes which maintain the contact/containment distinction exemplified by schemata a and b in Figure 3.1, above, since the containment relation can subsume the contact relation by selection of the appropriate features whenever there is a choice between contact and containment. The prepositional phrase and context (TR, LM, verb, etc.) will fill in the details, making the exact nature of the relation clear. In fact, the distinction between schema a and schema b is fully maintained only for Source prefixes. In Czech the Source Contact prefix further indicates motion downward, and indeed this is generally considered the primary sense of the prefix, although the frequency data clearly indicates it is a Contact prefix as well. In this more specific meaning (Source Contact plus direction downward) it is opposed to *vy₂-*, which (in Czech) indicates *motion upward (onto a surface)*. Although this prefix is identical in form to the Source Containment preposition, *vy₁-*, the two usages are quite distinct and were readily distinguished in the data, allowing for the clear determination of a Goal Contact status for the prefix in its *upward* sense.[5]

[5] Oddly these two distinct senses of the prefix *vy-* in Czech occasionally lead to situations in which the exact same expression is used to describe precisely opposite scenarios: *Mimozemšťan vy-lezl po žebříku* 'An alien climbed out down a ladder' OR 'An alien climbed up a ladder'. This sentence was used to describe both a figure exiting a flying saucer and moving down a ladder onto a planet *and* to describe a figure moving up a ladder from the planet into a flying saucer. Previous context (i.e. in one case the landing of the flying saucer on a new planet and in the other the prior exploration of the new planet and

Russian *за-* may also express both containment and contact relations, indicating a goal state which is <±contact> and <±contain>:

(11) Мальчик за-шел в дом
*The boy **entered** the house*

(12) Собака за-бежала на коврик
*The dog **ran onto** the rug*

This prefix, then, is observing the fact that contact and containment are analogously related to proximity in that they are both a single step from proximity in the relational chain:

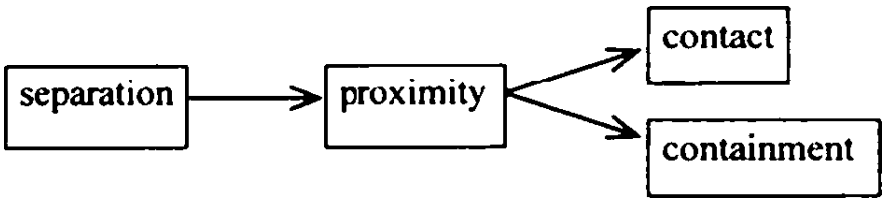


Figure 3.3. Chain of spatial relations

Furthermore, since *за-* may also express the proximity relation, the source state must be given as <-contact, -containment> and goal state as <±contact, ±contain, (±behind)>. Then selecting the features <-contact, -contain, +behind> for the goal state describes the proximity usage:

(13) Девочка за-шла за дом
*The girl **walked (to) behind** the house*

This makes Russian *за-* unique in its ability to refer to all three of the schemata given above (although in the last example it retains the additional semantic restriction to a goal proximity state *behind* the LM). Disambiguation is left to context or the prepositional phrase.

Czech *za-*, in contrast, specifies a more restricted version of the Containment schema, namely one with a goal state that is <-contact, ±contain>:

(14) a. Chlapec na kole **za-jel** do garáže
*A boy on a bicycle **rode into** a garage*

---

return to the space ship) made the proper interpretation completely clear however. Only one expression seemed ambiguous with respect to the *up* and *out* meanings: ***holčička vy-lezla na břeh (The girl climbed up out** (of the water) onto the (river)bank.)* Here the choice of *vy-* may be motivated by both senses.

b. ?Auto **za-jelo** na cestu[†6]
*?A car **drove onto** the road*

Thus, in Czech, *za-* appears to be more specific in its containment (vs. contact) focus even than the Goal Containment prefix *v-*, which occasionally occurs with surface goals:

(15) Auto **v-jíždí** na cestu
*A car is **entering onto** the road* (previously the vehicle was driving across a field)

The spatial semantics of *за-/za-* is taken up more fully in Section 3.5.5 below.

3.5 Prototype semantics of Source/Goal prefixes

3.5.1 Containment prefixes

The prototype semantics for the Containment Prefixes *вы-/vy$_1$-* and *в-/v-* seem at first glance straightforward and worthy of little additional comment. Two sources of evidence from the data, however, indicate that *вы-/vy$_1$-* and *в-/v-* are not simply inverses of each other. First, whereas *в-/v-* has extreme fidelity for goal prepositions, *вы-/vy$_1$-* shows much more variability in combining with prepositional phrases. Secondly, the overall frequency of *вы-/vy$_1$-* in the database is much higher than the frequency of *в-/v-* (see Table 3.3, below). It seems unlikely that speakers are simply more interested in describing source containment scenes (exiting events) than goal containment scenes (entering events). Thus, we must find some way to account for this disparity in prefix frequency.

Table 3.3. Frequency of Source/Goal Containment prefixes in the database

Russian prefixes	tokens	% total	Czech prefixes	tokens	% total
у-	298	19%	vy$_1$-	228	19%
вы-	244	16%	od-	220	18%
про-	225	15%	pro-	149	12%
под-	196	13%	při-	135	11%
за-	157	10%	pře-	128	10%
по-	145	9%	v-	99	8%
пере-	78	5%	s-	60	5%
в-	51	3%	do-	55	4%

[†6] It is possible to invent a very specific context which makes this utterance acceptable, namely that the car is turning off onto a hidden or insignificant side trail, probably leading into a forest. This invokes a different sense of the prefix *za-*, which is further discussed in Section 3.5.5, but it is clearly not equivalent to the Russian use of *за-* in goal contact contexts.

The comparative flexibility and increased frequency of *вы-/vy/-* can be partially explained by the apparent goal focus of narration mentioned above and discussed in greater detail in Section 3.7. Since *в-/v-* is a Goal prefix, expressions with *в-/v-* will rarely bother to express source, which is contextually available from previous narration. The Source prefix *вы-/vy/-*, however, conveniently refers to this contextually available source without having to name it explicitly and may combine with a goal preposition to further elaborate the chain of motion events. Furthermore, *за-/za-* occupies some of the same semantic territory as *в-/v-*, replacing *в-/v-* in some contexts and partially accounting for the lower frequency of *в-/v-* relative to *вы-/vy/-*. The presence of *за-/za-* as an alternative to *в-/v-* certainly contributes to the picture for Russian, less so for Czech, where *za-* remains a marginal prefix for goal containment (entering) events. Nevertheless, goal containment usage accounts for only a fraction of the examples of *за-/za-*, and the combined frequency of *в-/v-* and *за-/za-* still does not match the frequency of the Source Containment prefix *вы-/vy/-* in either language.

An additional fact seems to come into play in accounting for the high frequency of *вы-/vy/-*. In both Russian and Czech this prefix is used to mean *come out from behind (an object)*, whereas the corresponding Goal Containment preposition *в-/v-* is not used in the opposing sense, *to go behind (an object)*. In this context *вы-/vy/-* contrasts directly with *за-/za-*:

(16) a. Женщина вы-шла из-за дома vs. b. Девочка за-шла за дом
*A woman **came out from behind** a house* *The girl **went behind** the house*

but not:

c. *Девочка в-ошла за дом†
The girl **went in behind the house*

Вы-/vy/- is used in yet another, closely related but distinguishable context in this set of experiments, namely, to indicate entry into the visual field or domain of the speaker/conceptualizer. In this context *вы-/vy/-* contrasts primarily with the Source Proximity prefix *у-* in Russian and *od-* in Czech (but never with the goal containment prefix *в-/v-* in either language). In the following Russian example, the prefix *вы-* refers to the trajector's entry onto the screen, and the prefix *у-* refers to exit off of the screen:

(17) a. Мальчик вы-шел, прошел через коврик, и у-шел
*A boy **came out**, walked across a carpet, and **left***

but not:

b. *Мальчик вы-шел, прошел через коврик, и в-ошел
*A boy **came out**, walked across a carpet, and **left***

Similarly in Czech:

(18) a. Holčička **vy-chází** z jedné strany obrázku
*A little girl **is coming out** from one side of the picture*

b. Holčička **od-ešla** z obrazovky
*The little girl **left** the screen*

but not:

c. *Holčička **v-ešla** z obrazovky
*A little girl **left** the screen*

In this deictic usage *вы-/vy$_1$-* competes with the prefix *при-/při-*. These uses of *вы-/vy$_1$-* will be taken up again in the discussion of deixis in Section 3.6. For the moment it is sufficient to note that, even in purely spatial contexts, the Source Containment prefix *вы-/vy$_1$-* cannot be said to contrast directly with the Goal Containment prefix *в-/v-*. In fact, not only do *вы-/vy$_1$-* and *в-/v-* not contrast in this context, but occasionally in Czech (and marginally in Russian), *вы-/vy$_1$-* is used to describe the trajector as exiting the screen as well:

(19) Takže ryba plula směrem ke dnu, pak zaplula do jeskyně, potom zase vyplula, a **pak vy-plavala z obrazovky**
*So a fish swam towards the bottom, then swam into a cave, then swam out again, and then **swam out off the screen***

In Czech *vy$_1$-* was even used once in place of *za-* to indicate movement to behind an object:

(20) Auto přejelo silnici a přijelo k baráku a **vy-jelo za něj**
*A car drove across the street, approached a house and **drove out behind it***

Thus *вы-/vy$_1$-* seems at times to contrast with itself in these contexts. *в-/v-*, on the other hand, is not generally used to describe screen entry or exit, going behind, or coming out from behind, in either Czech or Russian. The significance of the apparent multiplicity of uses for *вы-/vy$_1$-*, sometimes in contexts which seem diametrically opposed to one another, will be taken up for discussion at a later point.

3.5.2 Contact prefixes

As previously noted, there is some semantic overlap between contact and containment which is reflected in the lack of a complete distinction between the two in terms of prefixes that contrast only on the basis of contact and containment in either Russian or Czech. Russian maintains this contrast for Source prefixes only, where *с-* indicates a source contact relation with its LM. There is no corresponding Goal Contact prefix in Russian, however, leaving a semantic gap. In Czech the Source Contact prefix *s-* is paralleled by the Goal (Contact) prefix *vy$_2$-*, although these prefixes have the

additional semantic content of *motion downwards (off a surface)* and *motion upwards (onto a surface)* respectively, leaving somewhat smaller semantic gaps in both the source contact and goal contact domains in Czech.

An examination of prefix frequencies with the Source Contact prepositions *c/z* and the Goal Contact prepositions *на/na* in Russian and Czech serves to illustrate how each language fills this gap. Tables 3.4 and 3.5 summarize the prefixes used in conjunction with Czech and Russian source contact expressions and goal contact expressions respectively.

Table 3.4. Prefixes used with the Source Contact preposition *c/z* in Russian and Czech

Russian prefix	% total	Czech prefix	% total
no prefix	5%	no prefix	32%
с-	60%	s-	39%
у-	11%	od-	6%
вы-	9%	vy_1- *(out)*	7%
при-	5%	při-	7%
пере-	5%	pře-	3%
вз-	4%	vz-	4%
по-	2%	v-	1%

Table 3.5. Prefixes used with the Goal Contact preposition *на/na* in Russian and Czech

Russian prefix	% total	Czech prefix	% total
no prefix	5%	no prefix	28%
за-	43%	vy_2- *(up)*	19%
вы-	28%	vy_1- *(out)*	16%
		při-	16%
у-	9%	od-	6%
в-	7%	do-	6%
при-	3%	v-	5%
пере-, от-, с-	4%	pře-, na-, s-	5%

The first observation to make is that, in keeping with the overall trend for Czech vs. Russian, Czech uses less prefixation. In particular, the most common way to deal with the lack of a Source or Goal Contact prefix in Czech is simply not to use a prefix at all, leaving the burden of the semantic distinction on the prepositional phrase.

Lack of prefixation aside, the prefix profile for source contact situations in Russian and Czech is reasonably similar. The most common prefix for source contact scenarios in Russian, unsurprisingly, is the Source Contact prefix *с-*, and as expected,

the more semantically restricted Czech *s-* is significantly less common than its Russian counterpart. A closer analysis of expressions with the prefixes *c-/s-* reveals that despite the downward sense attributed to the Czech prefix, 21% of the examples in the database do not involve a clear downward component, indicating a certain flexibility to extend to source contact situations without a clear up/down direction:

(21) a. Chlapec **s-ešel** z koberce vs. b. Auto **s-jíždí** ze svahu
*A boy **stepped off** the rug (no clear downward sense)* *The car **drove down** the slope (clear downward component)*

Although the Russian prefix *c-* is not restricted to downward motion, 33% of expressions with *c-* nevertheless involve a downward component. The data thus indicates that Czech *s-* does indeed have a comparatively restricted usage, but that Russian *c-* tends to designate downward motion as well.

The use of the Source Proximity prefix *y-/od-* for source contact situations is also expected, since this prefix is <±contact> at the source state. For Czech this is the only prefix other than *s-* which occurs with clear cut surface landmarks (i.e. things not easily construed as a container) and thus has the function of indicating motion off a surface that is not directed downward:

(22) Pes **od-běhnul** z koberce
*A dog **ran away** off the rug*

The occurrence of the Source Containment prefix *вы-/vy$_1$-* in source surface contexts indicates that there is some flexibility in the interpretation of the parameters of proximity, contact, and containment; a given landmark (and its relationship to a trajector) may be construed in a variety of ways:

(23) Машина вы-ехала с поля на дорогу
A car drove out from a field onto a road

While it may seem quite plausible to treat a field (bounded in two dimensions and having at least some extension into the third) as a container, a small rug is less plausibly so construed, and, in fact, examples such as (22) did not occur with the prefix *вы-/vy$_1$-*. Thus, for the prefix *вы-/vy$_1$-* to occur with source surfaces there must be at least some reasonable possibility of interpreting the space as an enclosure or container. This is especially true in Czech, where examples such as (23) are only likely to occur, for instance, if there is a fence around the field or it is covered with tall plants, or if the trajector is a small animal which may be easily hidden within the field:

(24) Had **vy-lez** z jarní louky
A snake crawled out of a spring meadow

The remaining prefixes in Table 3.4 make reference to LMs other than the prepositional complement and are used in their expected meanings with respect to their reference landmarks.

Goal contact situations present a slightly more complex picture. Czech again prefers simply not to use a prefix, followed by the near-direct correlate of the Source Contact prefix *s-*, namely, *vy$_2$-* 'up (onto a surface)'. (*S-* and *vy$_2$-* cannot be considered in direct opposition, since *s-* admits to usage without a downward component, whereas *vy$_2$-* does not admit to usage without an upward component.) Russian, in contrast, prefers the prefix *за-* over other alternatives, despite the fact that this cannot be considered the primary sense for *за-*. (From Table 3.2, 54% percent of all goal expressions with *за-* involve containment, only 33% involve contact.) The significance of this for understanding the prototype meaning of the prefix *за-* is taken up in Section 3.5.5.

The next most common option in both languages is the Source Containment prefix *вы-/vy$_1$-*. In both Russian and Czech this involves primarily situations which can be viewed as exiting a container onto a surface and secondarily situations of arrival into the visual field (and onto a surface). It seems that whenever there is a possibility of using a Source Containment prefix to give additional information regarding a non-explicit LM, both Czech and Russian do so. In contrast, other prepositions which make reference to implicit LMs are quite rare. (In Czech *od-*, *pře-* and *s-* combined account for 10% of the goal contact expressions, whereas *vy$_1$-* accounts for 16%. In Russian *у-*, *пере-*, *от-*, *с-* account for 13% of such expressions, whereas *вы-* accounts for 28%.) The reason for this is two-fold. The (here typically deictic) use of *вы-/vy$_1$-* to indicate coming into view accounts to some extent for the popularity of this prefix. This usage is still secondary to the actual source containment sense however. It seems that containment is simply highly salient and will be noted linguistically with a higher frequency when something which may be construed as a container is present in the context. (Recall that most trajectors move in contact with a surface, and even flying trajectors are more often construed as proximal to various landmarks rather than contained in air. These are indicators of the relative rarity of containment construal in comparison to proximity and contact construals. Containment thus has a special, or marked, status and is linguistically noteworthy whenever a potential containment construal is available to a speaker.)

For Russian the prefixes *за-* and *вы-* (and expressions without prefixes) account for 76% of goal contact situations. The prefix *в-* is also marginally available to express goal contact (7%) with certain surfaces, as in example (25):

(25) Джип в-ъехал на дорогу
*A jeep **drove in** onto the road (from a field)*

(The possibility of using both Source Containment (*вы-/vy$_1$-*) and Goal Containment prefixes (*в-/v-*), as in examples (23) and (25), above, in identical contexts is discussed further in Section 3.6.2.) Russian *при-* would also be an expected acceptable prefix for expressing goal contact, since it is both a Goal prefix and neutral with respect to

proximity, contact, and containment. In fact, it is uncommon and only occurred where large distances (and perhaps intentional arrival) were implied:

(26) Космический корабль **при-летел** на планету
*A spaceship **landed** on the planet*

The remaining prefixes make implicit reference to LMs other than the complement of the Goal Contact preposition and are used in their expected meanings with respect to their implicit landmarks.

In Czech the prefixes *vy$_1$-* and *vy$_2$-* and unprefixed expressions account for only 63% of goal contact situations. As with Russian, *v-* accounts for a small number of such expressions (5%), but, unlike Russian, *do-* is also possible and is as common as *v-*. (For a further discussion of *до-/do-* see Section 3.5.4.) A more significant contrast with Russian, however, is the frequency of the prefix *při-*. Czech *při-* is just as frequent as *vy$_1$-* and nearly as frequent as *vy$_2$-*. This is particularly interesting, since it suggests that Czech *při-* cannot merely be considered a combination of the functions of Russian *при-* and Russian *под-*, as it is often portrayed. In fact, while the following example was quite common in Czech for a figure starting only a few steps from the LM, its counterpart is rather odd in Russian and occurred only if the figure came from off-screen:

(27) a. Chlapec **při-šel na** koberec
*A boy **arrived on** the rug (motion of the boy started a few steps from the rug)*

b. Мальчик **при-шел** и встал **на** коврик
*A boy **arrived** and stepped onto the rug (motion of the boy started a few steps from the rug)*

c. ?Мальчик **при-шел на** коврик†
?A boy arrived onto the rug (can only occur if motion of the boy started off-screen)

The reasons for this difference will be explored in the following section.

It is of interest to note that, although the Goal Contact preposition *на* does not appear as a prefix for Russian verbs of motion at all in this study, there were two examples of the Czech prefix *na-* in the database, used precisely as expected, as Goal Contact prefixes:

(28) a. Cyklista projíždí, **na**-jíždí na most, ujíždí pryč
A bicyclist is riding by, rides onto a bridge, rides away

b. ...Teď jedou mezi stromy lesem, auto nadskakuje, protože je tam nerovný terén... byla to pravděpodobně zkrátka, protože **na**-jeli na další cestu
Now they're driving among trees through a forest, the car is bumping along, because the terrain is uneven... that was presumably a short-cut, because they drove onto another road

The *Slovník spisovné češtiny* lists one sense of the word *na-jet* as *jízdou se dostat, vjet* 'to get somewhere by riding/driving, to enter'. Despite the generality of the definition, the two examples given above involve canonical support surface landmarks, suggesting that some of the original goal contact flavor of the morpheme has persisted in Czech. More commonly in both Czech and Russian, the prefix *на-/na-* with verbs of motion indicates a different kind of goal contact situation, where the trajector collides with the landmark rather than being supported by it (*на-ехать* 'to run over/into, to collide with').

One final point regarding Contact prefixes should be made. Although Czech *s-* and *vy-* are much more clearly directional than their Russian counterparts, Russian *с-* may also be considered directionally restricted. Although *с-* is used to denote downward motion in only 33% of the cases, it is *not* used to designate upward motion:

(29) *Машина с-ъехала на верх с дороги
*The car **drove uphill** off the road*

Similarly, Russian *за-* in connection with goal surfaces is not specifically <+upward>, but it does not generally denote downward motion, most likely due to the presence of *с-*, which functions in that capacity.

The spatial prototype for the prefixes *с-/s-* must, therefore, include the designation <-upward> and Czech *vy-* must be marked <+upward>. The existence of this directional restriction in both languages may be explained simply by the fact that contact is often a redundant feature (because figures typically move in contact with a surface). The Contact prefixes are therefore minimally informative and are frequently used to give information concerning unusual features of terrain, namely the upward/downward direction of the trajectory, in addition to the contact and source or goal relations. The directional component confers increased salience on the surface, which would otherwise be viewed as merely a continuation of typical terrain, contextually obvious and not worthy of undue attention. Specifically, when the figure moves in contact with atypical features of the surface terrain, such as a hill, mountain, or a tree, these features themselves focus greater attention on the surface terrain, in addition to requiring upward or downward motion (and presumably some additional effort or change in effort on the part of the trajector):

(30) Chlapec **vy-lezl** na strom
*The boy **climbed up** on the tree*

The fact that Russian *за-* did not occur with downward trajectories, as we have noted, is likely due to the presence of *с-* and not due to a directional restriction on the trajectory described by *за-*. Russian may use the Goal Containment prefix to indicate motion that is specifically upward, although this was uncommon in the database:

(31) Машина в-ъехала на верх
*The car **drove uphill***

That these prefixes focus attention on terrain is supported by the fact that contact prefixes *c-/s-*, *за-*, *vy-* and *při-* are more likely to combine with Path prepositional phrases than other prefixes (see Tables 3.1 and 3.2). The lack of a Source Contact prefix expressing upward motion or a Goal Contact prefix expressing downward motion is not surprising; such prefixes would be extremely specific (and consequently rare), and the same distinctions are easily expressed by combining the appropriate Source or Goal Contact prefix with a Goal or Source Contact preposition (or by using the adverbs *upward/downward*):

(32) Auto **s-jelo** (dolů/z kopce) na silnici
A car ***drove down*** *(downward/downhill) onto the road*

In contexts where there is a directional component to a trajectory and the trajector moves in contact with a surface, these prefixes resemble Path prefixes, since the trajector may maintain contact with the landmark throughout the trajectory, not merely at the source point:

(33) a. Машина с-ъехала с холма	vs.	b. Птица с-летела с дерева
*The car **drove down** from the hill*		*A bird **flew off** of the tree*
(TR/LM in contact throughout trajectory)		(LM is a source point for trajectory)

Both Czech and Russian do maintain another prefix, *вз-/vz-*, which specifically designates upward motion and might be considered a Source Contact prefix, but it is rare, and therefore it is difficult to draw conclusions from the data presented here. In any case, *вз-/vz-* is much less common than either *vy-* in Czech or *за-* (in its goal contact sense) in Russian, and in both languages occurred exclusively with the verb *to fly* (which is not to imply that it cannot combine with other base verbs, but simply that it does so at such low frequency that it does not show up in the database). It also often occurs without a prepositional phrase (50% in Czech, 75% in Russian). When prepositional phrases did occur, they included source, path, and goal expressions in roughly equivalent numbers, but the context typically involved departure from a surface into the air, suggesting that the most common use of this prefix is a very specific sense, *to take off (into the air)*.

An examination of the base verbs combining with Czech *vy-* and Russian *за-* (goal contact sense only) is instructive here. Fully 83% of Czech expressions with *vy-* involve the base verb *lézt*, 'to climb' with only a few examples of *jít* 'to walk', *jet* 'to ride, drive', *letět* 'to fly', and *plout* 'to swim, sail, float'. Russian *за-*, in contrast, combines with *лезть* 'to climb' (26%), *ползти* 'to crawl' (21%), *идти* 'to walk' (17%), *бежать* 'to run' (13%), and *ехать* 'to ride, drive' (11%) in a much more even distribution, but never with *лететь* 'to fly'. It would seem that the upward component of motion in flying is common enough to deserve a separate prefix. (Again, this is not to suggest that *вз-* cannot combine with other verbs, but rather that in practice it rarely does.) The difference in distribution of base verbs for *vy-* in Czech and *за-* in Russian is clearly related to the fact that *за-* may indicate motion in a level plane, whereas *vy-* cannot. Where upward motion is a precondition, the verb for climbing is preferred.

Given this situation, Russian *c-* and *за-* might be described as Contact prefixes with a directional component and Czech *s-* and *vy-* as Directional prefixes with a contact component. Furthermore, it is clear that both languages distinguish *вз-/vz-* as belonging primarily to the domain of flying.

In summary, both Russian and Czech use a variety of other Goal prefixes to fill the semantic gap for goal contact situations. While the overall profiles for source contact situations are quite similar for Russian and Czech (aside from the general tendency toward less prefixation in Czech), goal contact situations are handled somewhat differently in each language. Russian has extended *за-* to cover goal contact as well as containment, whereas Czech has a specific, directionally restricted Goal Contact prefix *vy-*. The Russian and Czech prefix profiles for goal contact situations recapitulate another general trend in both languages; Russian tends to use fewer prefixes with greater semantic specificity for a given context relative to Czech. In this particular case, in Russian the two most common prefixes account for 75% of all prefixed expressions, whereas in Czech the three most common prefixes account for only 71% of all prefixed expressions. (See Table 3.5. Unprefixed expressions are not included in this calculation.)

3.5.3 Proximity prefixes

As discussed above, Russian Proximity prefixes may be divided into two subgroups. The subgroup represented by *от-* and *под-* is characterized by a source or goal state respectively that is <+proximity, -contact, -contain> and an opposing (goal or source) state that is <-proximity, -contact, -contain>. The proximity designation is inherently subjective, and for trajectors which start and finish a trajectory in <-contact, -contain> relations to a landmark, the presence or absence of proximity is determined in relation to a preceding or succeeding state. In other words, in an example such as (1), repeated here as (34), in the resultant state the dog may still be quite close to the tree, but it is further away than it was at the starting point of motion, and this is sufficient to define the absence of (relative) proximity:

(34) Собака от-бежала от дерева
*The dog **ran away** from the tree*

At first glance it would seem plausible to invoke a concept of relative proximity to explain the difference between example (34) and example (3), repeated here as (35):

(35) Птица у-летела от дерева
*The bird **flew away** from the tree*

In the first example the dog has moved further away from the tree than it was at the source point, but not as far away as the bird has flown in the second example. This reliance on relative proximity is awkward, however, requiring the introduction of a relative scale for a notion (proximity) which is already thoroughly subjective. Furthermore, a distinction based on relative proximity fails to differentiate examples where the prepositional phrase indicates theoretically equivalent distances:

(36) Он от-нес одежду в химчистку†
*He **took** the clothes (**away**) **to** the cleaner's*

(37) Он у-нес одежду в сиротский дом†
*He **took** the clothes (**away**) **to** the orphanage*

The first example in no way implies that the cleaner's is rather close by. Instead, the data suggest that the distinction between *от-* and *у-* in the examples above, and between *под-* and *при-* as well, may be fruitfully described by introducing the concept of a *sphere of influence of a landmark*, which I will refer to as its DOMAIN. This is, in fact, a typical extension for the notion of proximity generally, as can be seen by the use of all three of the cognate prepositions for the Proximity prefixes, *у-*, *от-* and *при-*. *Под-* corresponds to the preposition *к* in this regard:

(38) a. Собака стоит у лампы† vs. У меня нет собаки†
*The dog is standing **near** the lamp* *I don't **have** a dog*
(Domain is physical proximity) (Domain is possession)

b. Собака идет от лампы† vs. Я иду от брата†
*The dog is moving **away from** the lamp* (Domain is physical proximity) *I am coming **from** my brother's*
(Domain is place of residence)

c. Он стоял при лампе† vs. Он работает при университе†
*He stood **near** the lamp* *He is **affiliated with** the university*
(Domain is physical proximity) (Domain is participation/inclusion in a social institution)

d. Собака идет к лампе† vs. Я иду к брату†
*The dog is moving **towards** the lamp* *I am going **to** my brother's*
(Domain is physical proximity) (Domain is place of residence)

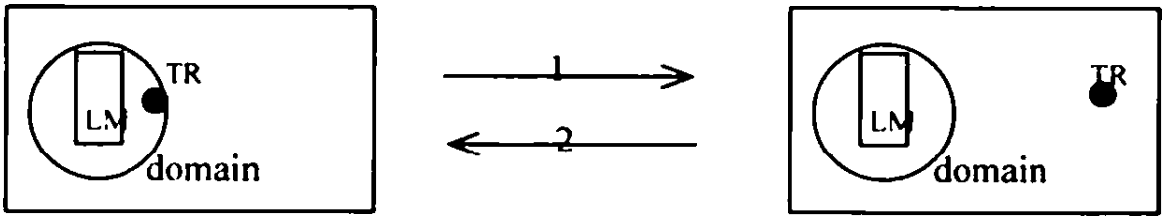
Thus, all of these prepositions have extensions which can be summarized as referring to a sphere of influence which is not necessarily proximal to the landmark itself, nor even spatially related to the LM. *При/při*, in particular, frequently indicates temporal contiguity with an LM. The "landmark" itself then refers to an event or time period:

(39) Večeřeli jsme **při** sledování televize†
*We ate dinner **while** watching TV*
(One event, dinner, took place in the temporal domain of another event, television watching)

I will argue here that this abstract notion of sphere of influence, or domain, of the landmark is integral to the spatial schema for the prefixes *у-* and *при-*. *От-* (and perhaps less often *под-*) may acquire this sense in abstract (i.e. non-spatial) uses, becoming theoretically indistinguishable from *у-* (and *при-*). In spatial contexts with

verbs of motion, however, the feature shift from <+domain> to <-domain>, or vice versa, distinguishes *у-* and *при-* from *от-* and *под-* (in addition to the differences already noted for these prefixes). Thus, while Russian *от-* and *под-* identify situations where there is a shift from <+proximity> to <-proximity> or vice versa, the situations are always <+domain>. *У-* and *при-*, on the other hand, identify situations which shift from <+proximity, +domain> to <-proximity, -domain> or vice versa.

The Proximity schema (Figure 3.1c) can now be updated by adding a second subschema, where the referent for the domain is not inherently, or even usually, spatial (although it may sometimes receive interpretation as proximity, spatial extent of the visual field, etc.).



+proximity
±contact
±contain
+domain

-proximity
-contact
-contain
-domain (*при-, у-, и-*) OR ±domain (*při-, od-*)

Figure 3.4. Subdivision of the Source/Goal Proximity schema. Proximity subschema (ii): Source prefixes (1) *у-, od-, и-*; Goal prefixes (2) *при-, při-*

In practice this rather abstract notion of domain is relevant in terms of the inferences that it generates, namely that the trajector is still relatively accessible (<+domain>) or inaccessible (<-domain>) to the landmark. Thus, in example (34) the dog has moved away from the tree, but is still visible on the screen, and there is some possibility that the dog might move closer again. In example (35) the bird has not only moved away, but has departed from the screen, presumably rather more permanently. (In general, in these films the screen served as an excellent domain determiner, either for LMs on the screen or for the speaker him/herself.) In these examples the inferences based on <±domain> indeed reflect something about relative proximity, but the choice of prefix is clearly based on inferences concerning further accessibility of the figure to the landmark (and/or viewer) and is not based on the relative proximity itself. This is clearer in cases such as (36) and (37), where the presence or absence of the feature <domain> leads to assumptions about the duration and/or permanence of absence of the trajector (here the clothing) from proximity to the landmark (here the possessor), and consequently the kind of relationship that now holds between the two. In (36) the removal of clothing to the cleaner's is presumably temporary and does not annul or change the ownership status of the clothing. In (37) the clothing has been donated, thus there is a permanent absence and a resultant change in ownership (domain) of the clothing.

The degree of accessibility of trajector to landmark implied by the notion of domain is open to a variety of interpretations depending on context. In the data presented here, accessibility generally related to the presence of the moving figure on the computer screen. The prefixes *от-* and *под-* occurred if the trajector remained on the screen with the landmark when the film ended, whereas *у-* and *при-* typically occurred when the trajector moved on or off the screen and was thus hidden from sight. Thus, a computer screen (or the visual field of the speaker) may serve as one interpretation of the concept of domain. A few on-screen events and contexts occasionally elicited the domain-shifting prefixes *при-* and *у-* in Russian. These contexts included: 1) the arrival/departure of a spaceship on one planet (immediately in front of the viewer as a landscape) from/to another distant planet, 2) arrival of a girl and boy in a car into a city from the countryside (as part of a longer narrative in which the girl and boy are on an extended journey, 3) departure of the girl when the boy drops the girl off at a house, 4) subsequent departure of the boy from the city, 5) the arrival/departure of a boy in a car at a house (as part of an extended narrative) into/out of which he carries a box, 6) a bird arriving at a nest full of hungry baby birds, and 7) any departure into an enclosed space which was final or ended the film:

(40) На луну при-летела тарелочка, из нее вышел инопланетянин, он сначала залез в один кратер, потом вылез из него, потом зашел за другой кратер, потом сел обратно в тарелочку и у-летел
*A spaceship **landed** on a moon, an alien came out of it, first he climbed into one crater, then climbed out of it, then went behind another crater, then got back into the spaceship and **left***

(41) a. trial 1: Летит птичка, под-летела к гнездышку, хочет накормить птенчиков
*A little bird is flying, **flew up** to a nest, wants to feed the nestlings*

b. trial 2: Птичка летела, при-летела к птенчикам
*A little bird was flying, **flew home** to its nestlings*

These on-screen elicitations of *при-* and *у-* share certain components: they are part of lengthy films which tell a story (except in the case of the bird), and they suggest intentional arrival at/departure from a destination on the part of the trajector (i.e. the spaceship probably planned or intended to land on the planet, the girl and boy intended to drive into/leave the city, or go home, and the bird intended to arrive at its nest). In contrast, in a short film in which a boy merely walks up to a house and enters, there is not sufficient context to suggest that the boy has entered his own home -- his domain -- and typically speaker responses reflected this:

(42) Мальчик идет к дому, за-ходит в дом
*A boy is approaching a house and he **goes into** the house*

(The contexts enumerated above were in fact designed specifically with the intention of eliciting *при-* and *у-* by telling a story with plausible domains for the figures to

enter/leave.) These uses of *при-* and *у-*, then, are not deictic, except perhaps in the case of the planet, where speaker perspective appears to be from the surface of the planet. This makes prefix use ambiguous between speaker/figure perspective. This particular topic will be discussed in more depth in the section dealing with deixis; however, two preliminary remarks are in order at this point. First, the notion of domain and the concomitant concept of *accessibility* of a trajector are important for many prefixes in abstract uses. In the spatial sphere, however, *у-* and *при-* may be distinguished from other prefixes on the basis of the fact that they always indicate a shift from <+domain> to <-domain> or vice versa. Secondly, the referent of the concept domain itself is generally not of significance. Rather, it is the associated inference concerning the *accessibility* of a trajector to a landmark that concerns us. In other words, the movement of a trajector into or out of the domain of a landmark, and hence the trajector's accessibility, may be considered an inference or experiential correlation resulting from a shift in the proximity of trajector to landmark. Once the prefix becomes concerned with trajector accessibility (or any other concept experientially associated with proximity), the prefix is no longer focused on a straightforward spatial concept. Instead, the prefix comments on the accessible or inaccessible status of the trajector at the goal state, and this status need not result from spatial proximity of the trajector. Thus, the introduction of the concept of domain represents the first excursion into the realm of abstract prefixation, since the domain may refer to fully non-spatial relations (accessibility, possession, etc.). The original sense of domain derives from a common correlation with the spatial notion of proximity, but has extended beyond it.

It is one of the basic assumptions of this study that the purely spatial relations outlined here will all be subject to such extensions (i.e. all prefixes may be used abstractly). It is of interest, however, that some prefixes may be used abstractly even when the verb itself describes a motion event and thus falls clearly within the realm of concrete spatial language. Up to this point it has been possible to discuss how concrete trajectors and landmarks actually interact in space as the speaker conceives of it. Even in seemingly plain spatial expressions, however, it is often impossible to account for prefix usage without invoking more abstract relations. In the data presented here, the concept of domain is closely linked with *perceptual accessibility* of a trajector to a conceptualizer (speaker), with the computer screen and/or visual field of the speaker defining the boundaries of the domain. In this case the speaker must be considered the landmark, and the prefixes are used deictically.

Since Czech does not subdivide the Proximity schema, the prefixes *při-* and *od-* do not make a distinction based on the presence or absence of domain (i.e. these prefixes indicate that one state is <+domain> and the other state is <±domain>). In practice, however, the distinction is often made for the Source prefix *od-* in the spatial realm by the addition of the adverbial *pryč* 'away,' and more generally by the use of prepositional phrases clarifying the distance and/or significance of the departure:

(43) a. Pes **od-běhl** pryč z obrazku vs. b. Pes **od-běhl** od stromu
*The dog **ran away** off the screen* *The dog **ran away** from the tree*

Od- does contrast with the prefix *u-* (cognate to Russian *y-*) which clearly designates a domain shift, but Czech *u-* is comparatively rare and carries the additional implication that the landmark is significantly affected in some way by the domain departure (see Section 3.6.1). Czech *u-* is thus always abstract. Czech also possesses a rare prefix (two examples in the entire database) *pood-* '(move) a small distance away,' which, in fact, does designate relative proximity:

(44) Chlapec **pood-ešel** kousek od koberce
*The boy **moved a short distance away** from rug*

While *pood-* might be considered <+domain> at both source and goal states, it does not contrast with anything that is <-domain>, as Russian *от-* does with Russian *y-*. The equally rare Czech prefix *popo-* '(move) a small distance' cannot be said to contrast with *pood-*, since it does not necessarily refer to any landmark at all. In other words *pood-ešel* 'he moved a small distance away,' indicates clearly that a trajector moved away from a landmark, even if the LM is not explicitly mentioned. *Popo-šel* merely means that the trajector covered a small distance:

(45) Chlapec stál na koberci a **popo-šel** kousek dál
*A boy was standing on a rug and then he **walked a little** bit further*

The fact that Czech *při-* does not (necessarily) involve a domain distinction can now be used to explain why example (27)a (repeated as (46) here) works in Czech, but not in Russian. The selection of <+domain> at both source and goal points, coupled with the lack of restriction regarding the proximity, contact or containment relation of trajector to landmark, makes it perfectly acceptable for *při-* to describe a figure which moves a short distance within the visual field of the observer and onto a rug or mat:

(46) Chlapec **při-šel** na koberec
*A boy **arrived** on the rug*

In Russian the <-domain> restriction for *при-* makes this combination at best awkward (assuming the figure starts on screen), while the <-contact, -containment> restriction for *под-* makes it unacceptable for this usage, unless *под-* is referring to some other LM:

(47) a. *Мальчик под-ошел на коврик
The boy **approached onto the rug*

b. Мальчик под-ошел к нему на коврик†
*The boy **approached him** (where he was standing) on the rug*

Thus, Czech *při-* does not simply cover the same semantic territory as Russian *при-* and *под-* combined, but also includes uses which distinguish proximity, contact, and containment goal relations without a domain shift. Czech *při-* is, therefore, quite

acceptable for the entirely <+domain> goal contact usage given in (46), whereas Russian must use the prefix *за-*:

(48) Человек за-шел на коврик
A person stepped onto the rug

In principle the same mismatch in semantic range exists for Czech *od-* versus Russian *у-* and *от-*.

3.5.4 The Prefix *до-/do-*

До-/do- is clearly a Goal prefix in both Russian and Czech, but whereas goal prepositional phrases with Russian *до-* are 100% contact expressions, Czech *do-* is compatible with proximity, contact, and containment goals. In fact, the designation of Russian *до-* as 100% contact is misleading, since contact here does not refer to contact with the landmark itself, but is a rather more abstract notion which may be described as *contact with an abstract limit defined by the landmark*. (It was for this reason that Russian *до-* was not discussed as a Goal Contact prefix.) This represents a second excursion into abstraction, since the limit introduced by *до-/do-* does not represent any spatially extant entity.

Russian *до-* combines exclusively with the preposition *до*, which has the same basic connotation as the prefix *до-* in the spatial realm. Russian *до-* (and the preposition *до*) specify attainment of an abstract limit, but do not specify whether that limit has been crossed. Furthermore, attainment of the limit may involve mere proximity to the actual LM, contact with it, or containment within it, and the resultant relationship often remains ambiguous. (Where it is not ambiguous, it is only because the relationship of TR to LM is retrievable from context, not from explicit linguistic information):

(49) a. Девочка до-шла до забора
*The girl **reached** the fence (and is probably simply proximal to it)*

b. Бронтозавр до-шел до дорожки
*The brontosaurus **reached** the road (and may be proximal or in contact with it)*

c. Рыба до-плыла до заросли водорослей
*The fish **swam to** a thicket of seaweed (and may be proximal to it, in contact with it or contained within it)*

Thus, this prefix (and preposition, in Russian) has application in the spatial domain but necessarily involves an abstract concept of limit even in its most basic use. In other words, the limit is spatial but has no concrete referent which can be said to exist. This results from the simple observation that, for a trajector engaged in directed motion, any concrete object in the path of motion defines a limit in space. In fact, the limit may be equated with the boundary of the domain defined by the explicit landmark. Given this definition, *до-/do-* specifies that the trajector has at least contacted (if not entered) the domain of the explicit landmark. In spatial uses of *до-/do-* the concrete landmark and

the domain/limit it defines are so closely bound that the abstract quality of the prefix is somewhat obscured. Nevertheless, the appropriate "landmark" for the prefix is the abstract limit, not the concrete object which defines it.

Czech does not have a preposition which directly mirrors the prefix *do-* in this way, since the preposition *do* in Czech is the Goal Containment preposition which corresponds to Russian *в* with the accusative case. Thus, Czech *do-* may combine with Proximity, Contact and Containment prepositions, allowing for more specificity in designating the trajector relation to the explicit "trigger landmark" which defines the limit:

(50) a. Holčička **do-jede** k potoku
*The little girl **reaches** the stream* (the girl is proximal to the stream)

b. Had **do-plazil** na koberec
*The snake **reached** the rug and slithered onto it* (the snake is contacting the rug)

c. Had **do-plazil** do řeky
The snake reached the river and slithered into it (the snake is contained in the river)

In this regard Russian *до-* and Czech *do-* are again consistent with the general trends in both languages. In Russian the prefix combines almost exclusively with a single preposition (*до-* + *до*, *от-* + *от*, *под-* + *к*, etc.) or a with few principal prepositions, whereas Czech prefixes combine more flexibly with a number of prepositions in more even distributions. The prototype for both Russian and Czech *до-/do-* identifies a source state which is <-contact, -contain, -attainment of domain limit> and a goal state which is <±contact, ±contain, +attainment of domain limit>. The proximity, contact, or containment relation of trajector to the explicit landmark may be recoverable from context in Russian but typically remains ambiguous, whereas in Czech the relationship is clearly specified by the preposition. The inclusion of the concept of an abstract limit, similar to the inclusion of the <domain> feature for *у-* and *при-*, indicates that even in basic spatial contexts the prefix *до-/do-* straddles the line between spatial and abstract prefixation.

3.5.5 The Prefix *за-/za-*

The data presented here would suggest that, statistically, the prefix *за-/za-* is predominantly a Goal Containment prefix. The goal proximity sense of the preposition *за/za* suggests, however, that the containment sense is a secondary development. Indeed, in both Czech and Russian only the prefix *за-/za-* is used to indicate movement to behind an object. The fact that this appears to be less common than the goal containment usage may simply be due to the number of films involving movement to behind objects versus into containers. The notion of *behind* has two interpretations in Russian and Czech, as it does in English: one which refers to some absolute assessment of the front side and back side of a landmark, and one which is defined relative to a particular conceptualizer, such that the trajector is located on the far side of the

landmark in relation to the conceptualizer. These are exemplified by the sentences in (51) and (52):

(51) Holčička běžel **za chlapečkem**
*The little girl ran **after (i.e. behind) the boy***

(52) Мальчик зашел за дом
*The boy went **behind the house***

In the task presented to speakers in this study, the second interpretation is clearly deictic; *за/za* 'behind' signified *on the far side of some object in the visual field of the speaker*. Thus, in (52) the trajector has moved out of the visual field of the viewer, despite the fact that in terms of the typical orientation imposed on houses, where the main entrance indicates the front of the house, the trajector in this film has actually moved to the side of the house.

The deictic use of *за-/za-* 'behind' generates the inference that the figure is no longer visible to the observer at the goal point of motion. The *out-of-sight* inference may, in fact, be listed as the primary meaning of the prefix *za-* in dictionaries and grammars of Czech, including for verbs of motion with *za-* (*za-jet* 'to drive out of sight'). This inference thus appears to be central to the prototype meaning of *за-/za-* even in its concrete spatial uses. The inference can be restated in a more general form: the figure is no longer accessible to the observer. In this case the LM is perceived as an obstruction between the TR and observer, and visual inaccessibility can be treated as a special case. This is important because it is not always the case that being behind or beyond an LM in relation to a conceptualizer designates invisibility. For instance, the preposition *за/za* commonly indicates that the TR is beyond some boundary defined by the LM with respect to a conceptualizer:

(53) Ona bydlí **za** řekou†
*She lives **beyond/on the far side of** the river*

Despite the fact that such uses do not necessarily generate an inference of visual inaccessibility, they do give rise to the inference of general inaccessibility, partly because the landmark serves as an obstruction, and partly because there is an implication of distance from the observer. Things which are far away may also be considered inaccessible. Thus, the inference regarding inaccessibility is motivated by several aspects of the original sense *behind*. The inference concerning distance from the observer is also typically listed as a submeaning of the prefix *за-/za-* in both Czech and Russian dictionaries.

Presumably the inference regarding inaccessibility accounts for the application of the prefix *за-/za-* to situations involving containment, since a figure inside a container is also inaccessible to an observer located outside of the container. Evidence for this comes from the fact that the use of *за-/za-* 'to go behind an object' is consistently (without exception in my data) paired with the prefix *вы-/vy-* to indicate *coming out from behind an object*:

(54) Девочка вы-шла из-за дома
*A girl **walked out** from behind the house*

The use of a clearly defined Source Containment prefix to indicate the opposing relation suggests that containment also generates the inference of inaccessibility (visual or otherwise) to an observer located outside of the container. The prefixes *вы-/vy-* and *за-/za-* are then paired in this usage, since they generate directly opposing inferences. The use of the Goal Containment preposition *в-/v-* for movement to behind an object, and thus out of the visual field, however, did not occur in either Czech or Russian in the database, suggesting that *в-/v-* has incorporated no such inference into its semantic network:

(55) *Машина въ-ехала за дом[†]
A car drove **in to behind the house*

The implication of invisibility/inaccessibility to a conceptualizer is not compatible with contact situations, and indeed Czech *za-* does not occur in such situations without some specialized context implying that the surface is difficult to find or access. This explains why example (14)b is possible in Czech only under the assumption that the road in question is some sort of forest path that is difficult to see or find:

(56) Auto **za-jelo** na lesní cestu
*The car **turned** onto the forest path*

Furthermore, notice that the verb here means 'to turn,' and not merely to drive onto a surface. In Russian, however, the use of *за-* with surfaces that are visually accessible to the speaker/conceptualizer is quite common and needs to be explained if we are to accept that the inference concerning (visual) accessibility is indeed central to the extension of *за-/za-* to goal containment situations.

One way to explain the extension of Russian *за-* to include goal contact situations is simply to assume that once it comes to designate containment, Russian *за-* adopts the Goal Containment schema fully, becoming <±contact> as well. Having the <±contact> distinction would then motivate the further full adoption of the Goal Contact schema, which is <±contain>, making Russian *за-* ambiguous with respect to contact/containment distinctions. This is a reiteration of the point made above concerning the similarity of contact and containment in terms of their relation to proximity, and finds support in the extension of the Containment prefix *в-/v-* (and marginally *вы-/vy-*) to contact situations (see example (25)). If *за-* has come to indicate a final state of goal containment, for the typical figure it will also indicate goal contact with a new type of terrain.

Although this perhaps does describe the manner in which *за-* has extended in Russian, in justifying the extension of *за-* from proximity to containment situations a particular concrete inference concerning visuospatial experience was invoked. Retreating to the terms of semantic features and pre-established schematic relations

designated by other prefixes explains the shift on a different level; the extension of Russian *за-* to contact situations deserves an attempt at a more experientially motivated justification as well. A common metaphor present in Russian, Czech, English, and perhaps a wide variety of languages, associates the lack of (visual) accessibility with a deviant or noncanonical state (often with a negative connotation). A noncanonical state, like the notion of inaccessibility, seems perhaps impossibly general, but it is necessary to use such a cover term, since this extension actually represents a large web of separate experiential associations and metaphors. For instance, things which are not seen are not known, therefore unfamiliar, unexpected, unusual, and thus deviant from a norm, or at least new. Furthermore, inaccessible things are often purposely hidden, further invoking a negative sense of deviance:

(57) нападение из-за углу
an attack from behind the corner (i.e. to backstab someone)
behind the corner is (visually) inaccessible, therefore unexpected, unanticipated

(58) продавать из-под пола
to sell from underground (i.e. illegally/on the black market)
underground is (visually) inaccessible therefore deviant

This link between *inaccessible* and *noncanonical* is further reinforced by the *distance* version of inaccessibility, where the LM designates some limit of normalcy:

(59) зайти/хватить слышком далеко
to go too far (i.e. beyond expected norms or permissible activity, especially in human behavior)
excessive distance from some (canonical) location is deviant

These represent only a few examples of the correlations and metaphors which link the notion *inaccessible* to *deviance* from some norm, and which motivate the extension of *за-/za-* in both Russian and Czech to the sense of *deviance from some normal, expected, or canonical situation*. The first route to deviance begins with a Proximity schema (location behind an LM) or a Containment schema (location within an LM), which implies visual and general inaccessibility of the trajector, and thus an unknown or unexpected situation. The second route to deviance refers to a linear scale, where the LM defines a limit, which is exceeded. In fact, the schema chosen to represent *за-/za-* turns out to be irrelevant, since the limit of the linear scale maps easily to the container boundary for the Containment schema or a limit defined by the LM in the Proximity schema. The idea that any prefix can generally make reference to a number of such schemata will be discussed in some detail in Chapter 6.

The connection between inaccessibility and deviance shows up in the spatial realm of Russian and Czech in the very common usage of *за-/za-* to indicate diversion of motion from a primary trajectory:

(60) По пути домой он за-шел в магазин†
On the way home he stopped in at the store (i.e. made a side trip)

In practice it is extremely difficult to separate the sense *inaccessible* from *noncanonical* and here, specifically, *deviance* from some expectation or norm, as they are linked by yet another common metaphor: turning off a main path is de-viant (cf. previous example). In fact, *turning* is often related simply to *difference* or *change*:

(61) повернуть разговор
to turn the conversation, i.e. to change the subject

Turning a corner invokes both the notion of deviating from a main trajectory and, simultaneously, of becoming visually inaccessible behind some object. In both Russian and Czech *turning* is expressed with the preposition *за/za*:

(62) Auto za-jelo (za-bočilo) za roh† / Машина повернула за угол†
The car turned the corner

The associations *inaccessible* and *noncanonical* are thus connected by a web of specific experiential links and metaphors.

In the spatial realm, then, Russian has extended the interpretation of deviance from a canonical, or expected (inertial) situation to a deviance from canonical, expected, or inertial (i.e. previous) terrain. Thus, *за-* may simply indicate change to a new type of terrain. It should be noted that substituting *state* for *terrain* (via a common general mapping between states and locations) produces the sense of changing from an inertial state to a new state which is associated with *за-* in its inceptive sense 'to begin an activity':

(63) Вдруг собака встала и за-бегала по двору†
Suddenly the dog got up and started to run about the courtyard

This use of *за-* will also be discussed at greater length in Chapters 5 and 6.

In short, the inference that something is inaccessible is connected to interpretations of deviance from a norm, location beyond a boundary (of the visual field, a canonical situation, etc.), and more generally to a change of state from an initial or inertial situation. It seems that in Russian a deviation in the expected or previous terrain -- even if this is merely a change in the surface upon which the figure treads -- is sufficient to provoke the use of the prefix *за-*. In fact, in Russian it is possible to use *за-* with Proximity prepositions which do not indicate any concealment of the trajector at all: *он за-шел под арку* 'he stepped in under the arch.' The fact that this is not true in Czech indicates a closer tie to the inference concerning visual accessibility. Czech *za-* is also much less common than *v-* in goal containment contexts (and is uncommon generally in the data presented here), whereas Russian *за-* is just as frequent as *в-* in expressing goal containment and does not seem distinguishable from *в-* in any way (i.e. it combines with the same types of landmarks in similar proportions. An analysis of

landmarks with *za-* and *v-* in Czech cannot be considered conclusive given the small sample size of containment expressions with *za-*.) This suggests that Czech *vy-* and *za-* are perhaps linked primarily by the inference of visual accessibility rather than a more general sense of accessibility which is integral to *vy-*. In any case, the wide variety of potential interpretations of "accessibility" and of "canonical situations" makes it unsurprising that the prefix extends along slightly different lines in each language.

The use of *за-/za-* in goal containment contexts and the use of Russian *за-* in goal contact contexts qualify as abstract uses of the prefix, despite the fact that the prefix is often used in clearly spatial contexts. In other words, when the prefix *за-/za-* is used in these contexts, it is essentially referring to something other than the contact or containment relation itself, focusing rather on the deviant, inaccessible, or simply changed, state of the trajector at the goal point of the motion. As with the prefixes *при-*, *y-* and *до-/do-*, the line between spatial and abstract uses of *за-/za-* is often blurred. In Czech, where *za-* frequently indicates visual inaccessibility, the correlation with the pure spatial sense of *going behind* is quite strong. Nevertheless, the prefix has extended beyond this original association to indicate visual inaccessibility that does not necessarily result from location behind an object.

The analysis presented here is in many respects compatible with that presented by Janda (1986) for the Russian prefix *за-* (aside from the interpretation of cognitive space which she presents). One difference specifically regarding *за-* should be noted, however. The landmark in this analysis corresponds to what Janda calls the extradomain, or the (cognitive) space defined as the complement of the landmark in set theory terms. Presumably the reason for considering the goal state of *за-* to be extradomain (rather than the LM itself) is due to the association of the goal state with a situation or terrain which is deviant or noncanonical, and which is therefore being evaluated against a previous condition or terrain. While it is true that *за-/za-* makes at least implicit reference to a canonical situation, given that *за-/za-* is clearly a goal prefix as defined here (it relates more intimately with some object in its goal state, whether that relation is canonical or not), it seems that the goal state or object should be properly designated as the landmark. Thus, given example (60) above, entering a store may well be evaluated as a deviance or diversion from the goal of getting home, but it is still the primary landmark for the prefix *за-*. The prepositional phrase *по пути домой* 'on the way home' merely clarifies what canonical trajectory we are to evaluate the deviation against. With verbs of motion in particular, the noncanonical entity is frequently a trajectory (evaluated against a canonical, or expected, trajectory). This is, however, simply a subcase of the general notion of *deviance* associated with *за-*, where the goal (final state) is itself a trajectory.

3.5.6 The Russian prefix *под-*

The preceding analysis of *за-* suggests that in its most common spatial contexts the prefix is actually used abstractly. In other words, the goal containment and goal contact uses are derived from a more basic spatial prototype (the Goal Proximity schema) via common inferences and associations which are then applied to new spatial contexts. A similar situation may be posited for the Russian prefix *под-*, with the distinction that *под-* is no longer used in the sense of its basic spatial prototype at all.

The main reason for making such a suggestion is simply the fact that the preposition *под* means *location under/motion to under* some landmark, a meaning which does not surface for the prefix. Furthermore, the Czech prefix retains this original meaning (although with motion it is not always <+goal> and is therefore discussed in the following chapter on Path prefixes) and does not extend to general <+goal, +proximity, +domain> contexts at all, as Russian *под-* does. Finally, *под-* retains the spatial meaning *under* in some spatial contexts other than with motion verbs (cf. *под-ложить* 'to lay under'; *под-черкнуть* 'to underline'; *под-держать* 'to support', i.e. to hold from underneath; *под-писать* 'to sign', i.e. to write underneath, etc.).

If the basic spatial prototype for *под-* is indeed <+goal, +proximity, +under (LM)> it seems that a simple step of eliminating the restriction to contexts of trajector location *under* an LM generates the necessary proximity usage. This is easily realized by deleting the feature <+under (LM)> from the spatial prototype and does not seem to require an abstract interpretation of the prefix at all. Notice, however, that in the spatial prototype motion is not directed at the LM itself (i.e. contacting or attaining the LM itself is not the goal) unless motion happens to be directed upwards. The only way to translate this to a spatial scenario and indicate action directed at a goal (which, however, is not attained) is by abandoning the spatial schema for a purely abstract interpretation of the prefix. In non-spatial contexts the features <+under> and <+proximity> bear no significance. Instead, the notions of *near-attainment of a limit* (the "landmark") coupled with *non-attainment of that limit* become central. Thus, the prefix simply comes to mean that *some limit has not been attained.* When applied to spatial contexts involving motion, this generates precisely the notion of approaching (but not reaching) a landmark.

It might at first seem convoluted to suggest that an abstract interpretation of the prefix as indicating *lack* of limit attainment is responsible for the shift from a specific proximity interpretation, <+under>, to a generalized proximity interpretation without this spatial restriction. By examining the use of *под-* in more clearly abstract contexts it is easier to ascertain the viability of this sense of *not attaining some limit*:

(64) под-тормозить; под-таять; под-мерзнуть
*to brake **somewhat**; to thaw, melt **a little**; to freeze **slightly***

In these examples the verbs are telic; thus, they can be seen as naming a process which encompasses stages toward the extreme (most complete version) of an action, e.g. braking to the point of stopping or melting until something is fully liquid. The prefix then indicates progression towards this limit to some point short of the ultimate potential conclusion. In these cases, lack of limit attainment has been interpreted as indicating some (small) amount of action.

The prefix *до-*, as described in Section 3.5.4, is opposed to *под-*, then, in the sense that *до-* indicates limit attainment and *под-* indicates lack of attainment in precisely this same abstract context of progression toward a limit. *Под-*, however, has taken on a sense that a slight amount of action has occurred. Thus, *под-* is not used in direct opposition to *до-*. Instead, we often find the negation of *до-*, the prefix *недо-*: *недо-оценить* 'to underestimate' (but note Czech *pod-cenit* 'to undervalue'). The

interpretation *a slight amount of action* is, in turn, presumably responsible for the sense of *additional action* associated with *под-*: *под-бавить* 'to add'; *под-работать* 'to earn additionally'; *под-рисовать* 'to add/draw in (to a painting/photograph)'; *под-строить* 'to build an addition', etc.

If this account of the extension of *под-* is correct, it is worth asking why precisely this prefix should come to be a generalized Goal Proximity prefix indicating motion toward, but not as far as, some LM. In theory, any of the Goal Proximity prefixes (*над-, под- пред-, за-*) could extend in this same manner, and there is not an obvious answer to this question. The other Proximity prefixes, however, have well-developed associations derived from their specific spatial orientations. Thus, we have seen that *за-* 'behind, beyond' is associated with a particular perspective relative to an observer (beyond, behind some LM) that suggests *exceeding* a limit rather than *not attaining* it. *Пред-* is strongly associated with the feature <+in front> (*пред-стать* 'to appear before') and is most often used to indicate temporal rather than spatial precedence (*пред-сказать* 'to foretell, predict'), thus is rarely used in spatial contexts. *Над-* 'above, on top of' also does not occur with verbs of motion, but is capable of indicating incomplete limit attainment (*над-ломить* 'to break partly, to crack'; *над-грызть* 'to nibble at'; *над-орвать* 'to tear slightly'). Nevertheless, *над-* is rare in this context and does not indicate motion towards a spatial LM.

Под- itself has some extensions based primarily on the spatial feature <+under>, and the extended associations of *над* 'above' and *под* 'under' are perhaps relevant here. *Location under* has strong metaphoric associations in the language at large with being subject to the power or influence of something: *быть под влиянием/руководством/властью кого- или чего-нибудь* 'to be under the influence/leadership/power of someone or something'; *под-падать под влияние* 'to fall under the influence' etc. In this way *под* is compatible with the notion of a trajector which is always subject to the domain (sphere of influence) of the LM, which is exactly what we find with verbs of motion prefixed with *под-*. In contrast, *над* suggests that a trajector wields power over a landmark: *иметь власть над кем- или чем-чибудь* 'to have power over someone or something'. *Над-* would thus carry the connotation that the landmark was in some way subject to the trajector's domain. Thus, *над-* is inappropriate for <+domain (of LM)> contexts.

The foregoing discussion suggests that despite the fact that *под-* is used only in goal proximity contexts with verbs of motion, it is, nevertheless, an example of abstract prefixation. In contrast, Czech *pod-* is used in accordance with its original spatial prototype, as we will see in Chapter 4.

3.6 Prefixes and deixis

3.6.1 Review of observed deictic uses of Source/Goal prefixes

Up to this point the deictic usage of Source and Goal prefixes has been mentioned merely in passing. The experimental method used to collect data for this study, though not specifically aimed at demonstrating deictic uses of prefixes, turns out to be ideally suited to this task. Speakers are asked to describe motion events that occur at the time and place of the speech event (albeit on a computer screen), thus the speaker

frequently describes the motion event relative to him/herself or his/her visual field. This is an example of deixis because it refers to the context of the speech event.

In this experimental setting it is possible to distinguish two pairs of prefixes that differentiate two levels of source/goal deixis. The prefixes *вы-/vy-* and *за-/za-* contrast with each other in the sense of *coming into view* and *going out of view*. As mentioned above, these two prefixes also contrast for the meanings *come out from behind/inside* and *go to behind/inside* an object. These uses are presumably the source of the visual accessibility inference and, thus, the deictic use (which is a special case of visual accessibility, where the speaker is also the observer.)

Given that these prefixes may refer to visual accessibility, it might be predicted that *вы-/vy-* and *за-/za-* would be used to indicate that a trajector has come onto the screen or left the screen, as this clearly represents the primary sort of visual accessibility in the given task. In fact, however, *вы-/vy-* and *за-/za-* were used mostly to indicate entry into, or disappearance from, view while the trajector was still (theoretically) on the screen -- for instance, when the figure has moved out of sight behind a house or trees that are depicted on screen. Screen entry and exit was typically indicated by the second set of source/goal deictic prefixes: *при-/při* and *у-/od-*:

(65) **Při-plouvá k nám zprava** rybička, před ní se objevuje vchod do jakési podvodní jeskyně, rybička vplouvá dovnitř, proplouvá jeskyní a, vyplouvá druhým, patrně nouzovým východem, a už **nám od-plula**
*A little fish **swims up to us from the right-hand side**, in front of it appears the entrance to some sort of underwater cave, the little fish swims inside, swims through the cave and swims out by means of the other, obviously emergency exit, and has already **departed from us***

This suggests that entry onto and exit from the screen were perceived not so much as entry into/exit from the visual field of the speaker, but rather as entry into and exit from the domain of the speaker. (Here the domain of the speaker has been given an easy definition by the nature of the task itself. Typically once a trajector left the screen the film was over and the trajector did not return.) Nevertheless, the domain reference is deictic in this task and is clearly related to the visual accessibility of the trajector to the speaker as well:

(66) Na vobrazovce **se nám vobjevila** rybička
*On the screen a little fish **appeared in front of us***

(67) Pták letěl vedle stromu a **zmizela z obzoru**
*A bird flew past a tree and **disappeared from view***

Given that *вы-/vy-* and *за-/za-* are not typically used to indicate screen entry/exit, it is worth questioning whether they are, in fact, being used deictically. Movement out from behind an object or movement to behind an object located on screen is not clearly distinguishable from movement into and out of the visual field, and it is not immediately obvious that there is justification for the claim that *вы-/vy-* and

за-/za- are being used to refer to the speaker's visual field. There are two types of evidence that these prefixes are at least at times used deictically. First, wherever a deictic usage appears to be present in the data, occasionally speakers will make this explicit, by replacing the prefixed verbs used in one trial with verbs which highlight visual accessibility in the second trial, and replacing prepositional phrases with expressions making specific reference to the visual field:

(68) a. trial 1: Рыба застряла в водорослях, она выпуталась, и теперь она за-плывает за камни, но потом она вы-плывает из-за камней и уплывает
A fish got stuck in some seaweed, it disentangled itself and now it's ***swimming behind rocks****, but after that it* ***swims out from behind the rocks*** *and swims away*

b. trial 2: Рыба застряла в водорослях, она, наконец, избавилась от водорослей, она скрылась за камнями и снова появившись на виду, она уплыла
A fish got stuck in some seaweed, it finally extricated itself from the seaweed, it ***disappeared behind rocks*** *and, having once again* ***appeared into view****, it swam away*

In the second example the speaker clearly indicates that the fish has passed out of and then back into his/her sight in precisely the contexts where the prefixes *за-* and *вы-* are used in the first example.

The second piece of evidence that *вы-/vy/-*, and occasionally *za-*, are being used deictically is that they can, in fact, extend to indicate entry onto or exit from the screen:

(69) a. Takže **vy-plavala** ryba, podplavala pod řasama, plavala kolem kotvy, kolem řas, kolem mušlí škebli, a **za-plula**
So a fish ***swam out****, swam under reeds, swam past an anchor, past reeds, past mussel shells, and* ***swam off***

b. Takže holčička vyšla z domu, přešla přes cestu, a **za-šla pryč**
So a little girl came out of a house, crossed a street, and ***went away***

It was reasonably common for the prefix *вы-/vy/-* to introduce a trajector onto the screen; however, *za-* was used for screen departure only in Czech and only by two Czech speakers. One speaker used it consistently, although at times it alternated with *od-*. The use of *za-* in this context in Czech only is consistent with the Czech emphasis on lack of visibility as compared with Russian *за-*.

Although *при-/při-* and *y-/od-* were the most common pairs of prefixes for the screen entry and exit events, several points should be made clear. First, it was reasonably common to mix the prefixes by substituting *вы-/vy/-* for *при-/při-* (but typically not *за-/za-* for *y-/od-* as just mentioned):

(70) a. Значит, комната, с ковриком на полу, с торшером, в углу какая-то нора, значит, вы-ползает змея, проползла через комнату, туда у-ползает в эту нору
So, a room with a rug on the floor, with a lamp, in the corner some kind of hole, so a snake ***slithers out****, slithers across the room, and* ***slithers away*** *there into that hole*

b. Nějaký dinosaur **vy-lezl zprava** přes silnici, podél řeky, a pořád leze dál, až **od-leze** úplně
Some sort of dinosaur ***crawled out from the right side*** *across the road, along the river, and keeps on crawling until it* ***leaves*** *completely*

This mixing of opposed prefix pairs demonstrates that even in spatial uses the prefixes can be considered paired with (i.e. opposed to) more than one prefix, depending on context. Nevertheless, the overall frequency of the prefixes in each context makes it clear that *вы-/vy-* and *за-/za-* are preferred for entry/exit into visual field on screen, and that *при-/při-* and *у-/od-* are preferred for entry/exit onto the screen itself. (The fact that the screen might occasionally be taken as equivalent to the visual field in this task is not particularly surprising, since it represents an independent world unto itself, defined by the boundaries of the screen.)

A second point is that, more often than not, speakers did not use a prefix to introduce a trajector entering the screen. Speakers of both Czech and Russian were far more likely to introduce the narrative with an unprefixed determinate verb of motion. This manner of introducing a topic is equivalent to first making a generalized statement of what is happening at the moment without initially treating the motion as defining a specific trajectory in relation to a source or goal LM. This was true for past tense descriptions of what was just seen as well:

(71) a. trial 1: Девочка едет на скейте по дороге, проезжает мимо двух деревьев, потом у-езжает
A girl ***is riding*** *on a skateboard along the road, passes by two trees, and then leaves*

b. trial 2: Девочка ехала по дороге, проехала между двумя деревьями и у-ехала
A girl ***was riding*** *on a skateboard along the road, passed between two trees, and* ***left***

Although the narrative descriptions of the films were often introduced without a prefix, it was much more common to use the prefix *у-* or *od-* if the figure left the scene than to use an unprefixed determinate verb. This accounts for the high frequency of these prefixes in the database compared to *при-/při-*. The fact that speakers are more tentative in announcing the arrival of a trajector on the screen or into their visual field as opposed to announcing the departure of the trajector is probably related to the given task, since speakers did not know what to expect in any particular film and were instructed to describe the activity on the screen as it happened. Therefore, when a new

scene opens, the speaker is unaware of what kind of drama will unfold before him/her and introduces the narration with appropriate tentativeness. There is evidence for this in the Russian data in particular, where use of *при-* was even less common than in Czech. Typically Russian *при-* was used only when two conditions were met: 1) the figure remained on the screen when the film ended, or at least stopped and rested or engaged in some prolonged activity on-screen, and 2) the viewer was describing the film for the second time. In the first trial Russian speakers used either an unprefixed determinate verb or the prefix *под-* combined with an on-screen landmark. In both cases there is no reference to the figure entering the scene:

(72) a. trial 1: Змея ползет по дому, ну скорее всего какой-нибудь бедный ужик, и ужик остановился на коврике и находится на этом коврике
*A snake **is slithering** along in a house, well **most likely** it's some sort of poor little grass-snake, and the little snake **stopped** on a rug and **is lying** on the rug*

b. trial 2: Уж при-полз к коврику и решил отдохнуть
*A snake **slithered up** to a rug and decided to have a rest*

In the second description the speaker already knows what has happened and knows that the arrival into the domain is permanent (for the duration of the film) or of significant duration, thus s/he may confidently describe the entry of the figure on to the scene as a domain entry. If the trajector simply moved blithely across the screen and left the screen without stopping, Russian speakers did not use the prefix *при-* even on the second trial. Apparently, in first viewing a film speakers did not possess the relevant information necessary to determine whether *при-* would be appropriate. Furthermore, when Russian speakers used *вы-* for introduction of a figure onto the screen, it also typically appeared only in second trials, but occurred in films where there was no stoppage of motion and the figure left the screen. *Вы-*, then, is appropriate for screen entry in Russian when there is little reason to treat the motion event as domain entry from the perspective of the trajector as well -- the trajector was merely passing through and had no particular intent of arriving *here*.

Czech does not exhibit these characteristics precisely because *při-* is ambiguous with respect to the senses associated with Russian *при-* and *под-*. Thus, Czech *při-* was much more common than Russian *при-*, appeared in first, as well as second, trials, and was used equally well for films in which the figure simply passed across the screen and disappeared off the screen without stopping. Thus, while some Czech examples with *při-* clearly refer to screen/domain entry, others are quite ambiguous with respect to an arrival versus approach interpretation:

(73) a. **Při-plouvá** k nám **zprava** rybička
*A little fish **is swimming up** to us **from the right hand side*** (arrival)

b. Dno morské: k rostlině **při-plouvá** rybička
*The sea floor: A little fish **is swimming up** to a plant* (approach or arrival)

The prefixes *y-/od-* do not show these same characteristics, since by the time the trajector departs the screen the speaker may be relatively certain that the film is over and the departure is quite final for that trajector. This situation justifies an expression which is <-domain> at the goal point, such as the prefix *y-* or the phrase *odešel pryč* 'he went away'. In fact, after viewing a number of short, self-contained films which established just such an expectation, speakers were shown a longer film. In these longer sequences, just as the figure appeared to leave the screen a "wipe" occurred (indication of a transition to another scene) and the narrative continued into the next phase of the story. Upon viewing these longer films for the first time, it was not uncommon for speakers to use domain departure prefixes and then change their minds:

(74) Так, мальчик выносит ящик, подносит его к машине, кладет его в машину, и едет куда-то по дороге, едет через мостик, встречает девочку, девочка садится к нему, они едут по дороге дальше, сворачивают с дороги, едут, наверно, в лес и у-сзжают... а нет, вот едут дальше, едут по лесу, едут мимо всяких деревьев разных...
*So a boy carries a box out, carries it **up** to a car, puts it in the car and drives somewhere along the road, drives across a little bridge, meets a girl, the girl gets into the car, they go further along the road, they turn off the road, drive, probably, into a forest and **leave... oh, no, they're still driving**, they drive through the forest, drive past all kinds of trees...*

On relating the narrative a second time, viewers never made such changes and did not use *y-/od-* until the actual final departure scene. These cases demonstrate that in fact the screen was acting as an appropriate referent for domain, and that departure from the screen was typically being associated with future inaccessibility (visual or otherwise) of the trajector to the observer. Finally, at least for Russian *при-*, the intent of the trajector to arrive on-screen seemed to be of significance. It is less apparent whether *y-* (or *od-*) indicates any particular intent on the part of the trajector to leave the domain, but in any case it is not as significant as for *при-*. Not only were *y-/od-* used whether or not the figure stopped on screen, but it was also common to indicate the screen as the appropriate landmark, something which rarely occurred with *при-/při-*:

(75) a. Змея ползет по земле, проползает мимо двух деревьев и у-ползает с картинки
*A snake is slithering along the ground, slithers past two trees and **slithers away out of the picture***

b. Z domu vyletěl pták a **od-letěl ven z obrázku**
*A bird flew out of the house and **flew away out of the picture***

Despite the fact that *y-* and *od-* were uncontested as the preferred prefixes for screen exit, two other prefixes occasionally occurred. In Russian the prefix *по-* alternated with *y-* in identical contexts:

(76) a. trial 1: Летела птица и остановилась на ветке дерева, затем у-летела
*A bird was flying and stopped on a tree branch, then **flew away***

b. trial 2: Летела птица, затем присела на ветку дерева, отдохнула и по-летела дальше
*A bird was flying and landed on a tree branch, rested up and **flew on***

At this point I will merely state the claim that *по-*, here, is not referring to domain departure. The argument in favor of this interpretation will be given in Chapter 5. In Czech, speakers occasionally used the prefix *u-*, cognate to Russian *у-* but quite uncommon in comparison to either Russian *у-* or Czech *od-*. The primary distinction between *u-* and *od-* seems to be that Czech *u-* not only indicates a departure from the domain, but also that the landmark is highly affected by the departure. This is a secondary inference linked to the domain shift associated with *u-*. Since <domain> represents a sphere of influence for an LM, not just proximal space, when a trajector departs from the domain of a landmark, one can infer that the (usually animate) landmark is substantially affected by this departure. In the given study *u-* was exclusively deictic and the speaker (who is the landmark for deictic prefixes) is usually mentioned explicitly:

(77) Náš motýlek, který se nám před chvíli skryl v koruně stromu, se objevil na polosuché větvi, chvilečku tam sedí, a po krátkem rozmyšlení **nám uletl pryč z našeho obrázku**
*Our little butterfly, who just a little while ago hid from us in the crown of a tree, appeared on a half-dead branch, sits there for a little while, and after brief consideration, **flies away from us away from our picture***

In this case the speaker shows a certain degree of attachment to the figure by calling it *our little butterfly*, as well as attachment to the domain -- *our picture* -- clearly indicating that the departure of the butterfly is significantly affecting us, the viewers.

Finally, in an odd inversion of the usages enumerated so far, the Czech prefix *vy-* (and marginally Russian *вы-*) was sometimes used to denote screen *exiting* events:

(78) Kůň běží podle silnici, přeskakuje přes plot a skočil na silnici, a po tý silnici **vy-běhnul z obrazovky**
*A horse is running along a road, it's jumping over a fence and onto the road, and along that road it's **running out off the screen***

While considerably less common than the use of *vy-* for entering the screen, it was undeniably a viable option for Czech speakers. When it was used to indicate departure, it always occurred with either a prepositional phrase overtly giving the screen as the landmark (as in the above example) or the adverb *pryč* 'away,' thus distinguishing it from the use of *vy-* for screen entry, which rarely indicated a landmark at all.

The use of *вы-/vy-* for a multiplicity of functions (exiting containers, exiting from behind objects, exiting into view, entering the scene, and in Czech exiting the

scene as well) perhaps largely accounts for its exceptionally high frequency in the database. Nevertheless, it remains to explain why a single Source prefix serves as many as three differentiable functions where there are at least three possible prefixes (both Goal and Source) which may be paired with it in the opposing function. The chart below summarizes these uses of the prefix *вы-/vy/-*:

Table 3.6. Functions of the prefix *вы-/vy-* in Czech and Russian

	Exit container	Enter container
Czech:	vy-	v- (za-)
Russian:	вы-	в-, за-
	Come out from behind	Go behind
Czech:	vy-	za-
Russian:	вы-	за-
	Enter domain	Exit domain
Czech:	při-, vy-	od- (vy-, za-, u-)
Russian:	при-, вы-	у-

3.6.2 Inference and the distribution of *вы-/vy-*

The explanation offered here for the distribution of Source and Goal prefixes relies on inferences generated by the original features given for the Source Containment prefix, which are central to the meaning of *вы-/vy/-* even in the spatial realm. These may be summarized as three primary inferences which are relevant for the prefix *вы-/vy/-*, two of which are familiar from the previous discussion of *за-/za-*. One inference is related directly to the containment relation in actual space, one is an inference based on conceptualizer perspective (often viewer), and the third inference is derived from the first and second by experiential correlation, and perhaps metaphor.

Inferences generated for the prefix *вы-/vy/-* from the Source Containment schema:

1. Spatial: A TR which moves from inside a container LM to outside a container LM moves from a confined space into an unconfined space

2. Perspectival: A TR which moves from inside a container LM to outside a container LM shifts from (perceptually) inaccessible space to accessible space with respect to a conceptualizer located outside the container

3. Experiential correlation: Location in accessible and/or unconfined space is a canonical state and location in inaccessible and/or confined space is a noncanonical state; thus, a TR which moves from inside a container LM to outside a container LM shifts from a noncanonical state to a canonical state

All of these inferences are stated in the most general terms possible, but it will be evident that they are open to a broad range of more specific interpretations or

instantiations. We have already seen a common subcase of inference 2: A TR which moves from inaccessible space to accessible space moves from visual inaccessibility to visual accessibility. This subcase then accounts for the use of *вы-/vy/-* to contrast with *за-/za-* in the sense of *coming out from behind* an object. Inference 2 also accounts for the deictic use of *вы-/vy/-* for coming onto the screen. Presumably the shared inferences concerning accessibility/canonical state (inferences 2 and 3) motivate the pairing of the prefixes *вы-/vy/-* with *за-/za-* for use in opposing contexts. That an inference regarding (visual) accessibility links all of the uses given in Table 3.6 is corroborated by the fact that verbs specifically indicating visual accessibility easily substitute for *вы-/vy/-* at all levels, including simple containment:

(79) a. Мальчик появился из темноты дома, вы-бежал во двор и скрылся из виду
*A boy **appeared** from the darkness of the house, **ran out** into the yard and **disappeared** from sight*

b. **Objevuje se** džíp, sjíždí pomalu ze svahu dolů po louce až na cestu, a tam **mizí za keřem**
*A jeep **appears**, slowly drives down the slope along a meadow all the way to a road, and there it **disappears behind a bush***

Inference 3 is stated as if inference 1 and 2 clearly coincide in designating canonical vs. noncanonical states. Although this is perhaps frequently true, a large number of potentially conflicting subcases exist within language. Where two or more general inferences belong to the prototype of a single morpheme, conflicting interpretations are likely to arise. This is readily apparent even in simple spatial contexts. For example, inference 1 indicates that given a space which is relatively confined in area with respect to another space, movement from space 1 to space 2 will typically invoke the prefix *вы-/vy/-*, and movement from space 2 to space 1 will typically invoke the prefix *в-/v-*. While this is clearly true for canonical three-dimensional containers, when the confined space becomes more surface-like, an asymmetry arises. Thus, it is acceptable (and common in Czech) to use *в-/v-* for entering a road (relatively confined space) from a field (relatively unconfined), but *вы-/vy/-* is not used to indicate leaving the road to enter a field:

(80) a. Po louce jelo auto a **v-jelo na cestu**
*A car drove along a field and **entered onto a road***
(unconfined space to confined space)

b. ?Po cestě jelo auto a **vy-jelo na louku**†
*A car drove along the road and **drove out into a field***
(confined space to unconfined space)

c. Джип въ-ехал на дорогу
*A jeep **drove in** onto the road (from a field)*

d. ?Джип вы-ехал (с дороги) на поле†
A jeep drove out onto the field (from a road)

For inference 3, however, canonical space will be the usual or expected terrain for a given moving figure, including functional passageways, such as roads for people/cars, etc. Noncanonical terrain will then tend to be more difficult, unusual, and therefore less accessible terrain for the figure. In this case inferences 2 and 3 can be seen to conflict with inference 1, since a field is generally noncanonical terrain for a car in comparison to a road. Indeed, in both Czech and Russian it was common to use *вы-/vy/-* for driving onto a road from a field, whereas *в-/v-* was never used for entering a field from the road. This is expected since *в-/v-* does not share inferences 2 and 3 with *вы-/vy/-*:

(81) Машина вы-ехала с поля на дорогу
A car drove out from the field onto the road

Thus, in (79) and (80), *вы-/vy/-* and *в-/v-* are apparently being used interchangeably, however the two prefixes are focusing on different aspects of the context. Additional support for the notion that this use of *вы-/vy/-* is focusing on the difficulty or inaccessibility of the terrain comes from more elaborate examples in both languages:

(82) a. Džíp přijíždí kolem stromu, džíp přejel po louce, **nadskakoval na hrubém terénu**, přejel kolem stromu, **vy-jel na cestu**, a sjel dolů
*A jeep is approaching, passing a tree, it drove across a field, **bumping along on the rough terrain**, drove passed a tree, **and came out onto a road**, and drove downhill*

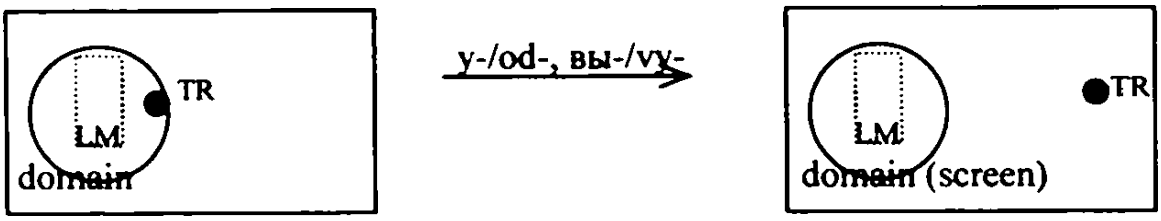
b. Значит, мы видим джип, который едет по равнине, где-то в горной местности, ну там такая маленькая полянка в горной местности, он упорно преодолевает препятствие, которое поставлено на его пути, вы-езжает на маленькую горную дорожку и скрывается где-то за деревьями
*So, we see a jeep, which is driving along a plain, somewhere in a mountainous region, and there's this smallish meadow in the mountains, and it (the jeep) is **stubbornly overcoming an obstacle which is in its path, comes out onto a little mountain road** and disappears somewhere behind the trees*

In order to properly interpret a prefix, then, a listener must be able to recognize which inferences apply in the given context. In cases where the inferences conflict, the recognition of the appropriate inference is an automatic process resulting from applying the prefix to the context: one inference will be appropriate and another will not. Where inferences reinforce each other the prefix is simply multiply motivated and achieves an added appropriateness. Morphemes with highly abstract, schematic semantic content (i.e. derivational and grammatical morphemes) are better candidates for this kind of multiple motivation than morphemes with more concrete referential content (i.e. lexical morphemes).

As noted previously, of the three inferences given here, only inference 1 is an inherent part of the containment relation scenario, and it is the only one which applies to the prefix *в-/v-*. Given that *в-/v-* does not include either inference 2 or 3 as part of its semantic network, it becomes immediately obvious that it would be inappropriate to indicate movement to behind an object (to visual inaccessibility) or out of the domain/off screen (both visually inaccessible and into noncanonical terrain). Why *в-/v-* remains so restricted in meaning (given that the Goal Containment schema should render it just as capable of adopting numerous inferences and extending to numerous contexts as *вы-/vy-*) cannot be answered by the data. It seems likely, however, that the restricted sense of *в-/v-* is a direct result of the extensions of *за-/za-* to such contexts. As noted in Section 3.5.5, *за-/za-* is multiply motivated for these inferences and, thus, presumably more appropriate for these extensions than *в-/v-*.

The mapping relationship between the Containment schema and accessibility (inference 2) brings up another important point. It was stated earlier that the prefix *при-* (and sometimes *při-*) indicates a shift from <-domain> to <+domain>. One inference associated with the feature <+domain> is also that the TR is <+accessible> (i.e. the TR is accessible to the LM which defines the domain). Given that the final state of *вы-/vy-* is, according to inference 2, also <+accessible> (to a conceptualizer), *вы-/vy-* should be easily capable of extending to shifts from <-domain> to <+domain> (where the domain is defined relative to a conceptualizer, such as occurs in this experiment). The accessibility relation which links the two prefixes thus accounts for the apparent oddity of a Source prefix (*вы-/vy-*) and a Goal prefix (*при-/při-*) coming to designate the same relation and thus be interchangeable in screen entry contexts. It also demonstrates how easily distinctions maintained in the prefix spatial prototypes are blurred and lost through conflated inference or experiential correlation and semantic extension of these inferences to non-spatial contexts. As a result, many prefixes appear interchangeable in abstract contexts. This point will be further demonstrated with other prefixes in later chapters.

So far the various uses of *вы-/vy-* have been accounted for primarily by inferences 2 and 3. The use of (*вы-*)*/vy-* for screen exiting events, however, requires a different explanation, since off-screen cannot be legitimately considered accessible or canonical space from the perspective of the observer. One possibility is that the computer screen is representing confined space, and therefore is compatible with inference 1, even though it is in direct contrast to inference 2. In purely spatial terms this usage makes the most sense. The potential synonymy between the prefix *y-/od-* and the prefix *вы-/vy-* to indicate screen exit is made comprehensible by the Proximity subschema (ii) in Figure 3.4, repeated as Figure 3.5, below, where the domain can easily be equated to a container. The source orientation of both *вы-/vy-* and *y-/od-* is aligned, and the container and/or domain may simply be defined as the computer screen:



+domain
+accessible

-domain
-accessible

Figure 3.5. Source/Goal Proximity subschema (ii).

Inferences 2 and 3 (regarding accessibility and canonical state) that have been attributed to *вы-/vy$_I$-* do not match up with those of *y-/od-* and the screen exiting sense, however. The fact that *вы-/vy$_I$-* is quite common as a screen entry prefix but marginal in screen exit contexts indicates that inferences 2 and 3 are central to the meaning of *вы-/vy$_I$-* in both Czech and Russian. These inferences tend to overshadow the purely spatial inference 1. Notice, however, that if the perspective concerning accessibility has shifted from the speaker to some wider audience presumed to exist in the wider (off-screen) world, the accessibility inference applies in the screen exit context as well. It would seem, then, that Czech speakers are somewhat more willing to make this shift from a deictic to non-deictic perspective than Russian speakers. There is some support for this explanation in the idiomatic use of *vy-* in Czech to indicate the initiation of a journey (*vy-jít/vy-dat se na cestu* 'to set out' (for some place, on a journey, etc.)). In this case the TR has left a confined state of being in one place and entered a space in which s/he is both unconfined and accessible to the world at large.

This manner of interpretation, including shifting among both inference mappings and perspective alignment, has a disturbing quality; it seems that a container schema can map referentially to almost anything, whether it conflicts with other mappings or not. This idea will be discussed in more detail in Chapter 6. For current purposes, the fact that opposing uses of the prefix *вы-/vy$_I$-* (for both screen entry and screen exit) are more common in Czech than in Russian may indicate that Czech *vy-* (and perhaps other Czech prefixes) is more amenable to such perspective shifts than Russian *вы-*. The Russian prefix, in contrast, is focused more closely on observer perspective (i.e. is more clearly deictic in this task). The implication of this is that the Czech prefix will be applicable to a much wider set of contexts that are less clearly related to one another or may seem in direct conflict.

Notice that the alignment of *вы-/vy$_I$-* with either *при-/při-* or *y-/od-* does not mean these prefixes are equivalent in the given contexts. In Russian the additional requirements that arrival must be fairly permanent, and thus probably intentional on the part of the figure, do not hold for *вы-/vy$_I$-*, indicating that the accessibility associated with *вы-/vy$_I$-* is observer-based rather than trajector-based. In Czech, *při-* remains ambiguous regarding a shift from <-domain> to <+domain> (and thus <-accessible> to <+accessible>), whereas *vy-* clearly indicates a shift from <-accessible> to

<+accessible>. In screen exit contexts, *y-* and *od-* differ from *вы-/vy-* on similar grounds.

The fact that Czech *za-* is marginally acceptable as a screen exit prefix, whereas Russian *за-* is not, requires some explanation as well. For Czech *za-*, as noted previously, the inference of visual inaccessibility is at the core of the spatial prototype. Thus, it is likely that *za-* is being used in a fully deictic manner when applied to screen exit, indicating merely that the figure has passed out of sight. The fact that Russian *за-* does not emphasize visual inaccessibility over other types of inaccessibility and, in fact, appears to emphasize rather a deviation in terrain, would make it inappropriate here. The figure is leaving the screen, but there is no deviation in the terrain (of its fictional world). The use of *za-* in contrast with *od-* in Czech sets up a distinction similar to the contrast between *vy-* and *při-* for screen entry: the former is focused on visual inaccessibility, the latter on a more general domainal inaccessibility (with additional inferences regarding the permanence of the departure) or simple distancing of trajector from landmark. The reason for the rarity of *za-* in this context compared with *od-* has been suggested before; the nature of the films (i.e. that they conclude with departure of the TR from the screen and the TR does not return) makes the departure from the screen an obvious example of domain departure. Domain departure in this case entails the visual inaccessibility of the figure, and thus *od-* is more fully descriptive than *za-* in these contexts.

3.6.3 The deictic usage of prefixes

As noted above, the experimental task at hand tended to draw attention to deictic uses of prefixes. Deictic usage of prefixes is significant in large part because it demonstrates one (usually implicit) source of reference for prefixes which confirms their flexibility and independence from verbal semantics. (The verbal construction itself only rarely refers to the viewer or the viewer's visual field or domain.) Nevertheless, the preceding discussion applies to situations which are not deictic as well. A speaker could use these same prefixes to narrate events from the point of view of some third person, for instance, and still utilize these prefixes to designate entry into or exit from the domain or visual field of this other conceptualizer. This brings up the point that two of the inferences central to the prototypes of both *вы-/vy-* and *за-/za-* (inferences 2 and 3) are dependent on a particular perspective, which can be stated most generally as the perspective of a conceptualizer (Langacker, 1993:455). The deictic usage then represents a special case where the role of the conceptualizer is equated with that of the speaker.

Note that prefixes are perfectly suited to the role of deixis, since a prepositional phrase may be added to indicate the relationship between a TR and some other LM, allowing the prefix to select a distinct entity as its LM -- in this case, the speaker and/or the speaker's visual field. Nevertheless, when a prefixed verb co-occurs with a prepositional phrase which refers to the same basic schema as the prefix, it is impossible to determine whether or not there is a deictic component to the prefix. Only the use of prefixes without prepositional phrases, or with prepositional phrases clearly referring to a different schema and landmark (or when the landmark entity itself explicitly refers to some aspect of the speech context), is it possible to detect the deictic

usage. This suggests that in many, if not most, uses of prefixes, multiple motivations (including deixis) may exist, but they will be masked by the explicit reference, the only one which is clearly recoverable to a listener. The prefixes which demonstrated a clear deictic component in this study were also more likely to occur without a prepositional phrase at all. This is expected, since the absence of a clarifying prepositional phrase indicates that LM reference is obvious from the speech context.

To make matters more complicated, even when deictic reference can be established, as we have seen, the reference relation may still be ambiguous and multiply motivated. Is the appropriate LM the speaker, the speaker's visual field, some abstract notion of speaker domain, or all of these? The notion of domain itself may be based on the visual field, proximity, or some much more abstract concept, yet the nature of the domain is never linguistically explicit. Furthermore, even when the verbal construction itself has clear, concrete TRs and LMs, the prefix may be fully abstract. It will be argued later that in these cases the prefix does not refer to concrete LMs or TRs at all, commenting instead on the action itself or the world state which results from an action. In this regard prefixes may be quite independent from the verbal construction. The prefix has a great deal of freedom to select trajectors and landmarks independently of the verb itself, and the appropriate referents for these roles may be thoroughly implicit.

The ambiguity and fluidity of the prefixes in these contexts where landmark reference is left implicit and might operate on more than one level simultaneously (e.g. the multiple motivations particularly apparent in the usage of *вы-/vy|-* above) are perhaps part of the immediate recognizable appropriateness of novel prefix+base verb combinations and the consequent potential for artistic neologism accorded to prefixes by native speakers. By leaving a great deal unspecified, prefixes allow for creative use in specialized contexts, leaving the boundaries between such notions as domain, visual field, accessible space, and container ambiguous and overlapping. The fact that ambiguity is introduced into the reference relation at the most basic spatial level only emphasizes the flexibility of the prefixes in this way.

3.7 Goal orientation in narration and conceptualization

3.7.1 Evidence for a goal focus in language

The fact that narration tends to be goal oriented has been mentioned in passing in this chapter. The fact that a single trajector moving through space and time traces a line through an ordered series of points makes this perhaps transparent. In either moving or conceptualizing motion along a path, one cannot pass through these points in a random order, and therefore at the end of motion one is either physically or conceptually at the goal point, not at the source, or anywhere else along the trajectory. This is true with conceptualization of motion even when the linguistic expression does not make the goal explicit. Consider the following sentence with no explicit mention of goal:

(83) Космонавт вышел из-за вулкана
The astronaut came out from behind the volcano

As conceptualizers we are nonetheless aware that now the astronaut is no longer behind the volcano, and that this is the situation that is currently relevant.

Langacker discusses this with regard to abstract motion, which he defines as a "maximally schematic concept of motion, with respect to which physical movement is just a special case" (1991:156). Thus, abstract motion is what I have called a source-path-goal schema, or trajectory. (Since a trajectory in abstract motion may be purely temporal, abstract motion can be seen as relevant to any verbal activity, including stative verbs.) Langacker points out that a common semantic extension of abstract motion is for the expression for the entire motion event to indicate only the final state. This is realized in Russian and Czech (as well as English) in the fact that prepositions used with motion verbs are also used statically to indicate the goal state of motion:

(84) a.	Мальчик вошел в дом *A boy went **in** the house*	vs.	Мальчик вышел из дома *A boy came **out of** the house*
b.	Мальчик стоит в доме† *A boy is standing **in** the house*		*Мальчик стоит из дома† **A boy is standing **out of** the house*

This has been suggested as a semantic universal by Regier (1993), who refers to this as the endpoint polysemy prediction, which holds that "the use of a single lexeme to denote either static location in some configuration or motion into that configuration will be more likely to appear in a language than the use of a single lexeme to denote either static location in a configuration or motion out of that configuration" (Regier, 1993:481). Interestingly, while Langacker reaches his conclusion for theoretical reasons, Regier does so for empirical reasons without any theoretical backing. Regier implemented a connectionist model of acquisition of visually grounded lexical semantics in which the model "learned the meaning" of prepositions through pairing the prepositions with movies of appropriate scenarios (without negative examples). The result was a model with what Regier called endpoint emphasis (i.e. it only learned to recognize spatial configurations which occurred at the end of some movie it had "seen"), despite the fact that it was not specifically designed to focus on the endpoint. Thus, when trained on the static sense of a preposition, the model easily generalized the preposition to movies of motion into that static configuration, although it had never been presented with such a movie. In contrast the model does not easily generalize to motion out of that static configuration.

3.7.2 The oddity of the prefix *y-/u-*

The expected semantic extension from endpoint of motion to static situations (as presented by Langacker) or from static situations to the endpoint of motion (as presented by Regier) appears consistently in both Russian and Czech with respect to prepositions and holds for the prefixes as well, with one notable exception. The static preposition *y/u* (which is not cognate to any preposition indicating motion) has a cognate prefix *y-/u-* which indicates motion *out of* that static configuration. In this regard *y-/u-* is unique in both languages. The reason for the uniqueness of the relation between the prefix *y-/u-* and the preposition *y/u* is not clear, nor is it clear whether there

are any unusual consequences of this. It is mentioned here in passing simply as a curiosity.

3.7.3 Goal orientation and prefix frequency

Goal orientation is the most likely explanation for the fact that Source prefixes frequently combine with Goal prepositional expressions (Table 3.1) whereas Goal prefixes rarely combine with Source prepositional expressions (Table 3.2), but show high fidelity for their cognate (and thus often redundant) Goal prepositions. This redundancy should have the effect of concealing any deictic usage (or other motivations), since the explicit goal will be taken as the motivation for the prefix. This may even prevent the Goal prefixes from extending as easily to other senses. Goal orientation should also account for the fact that there are a greater number of distinctions maintained for goal situations, as demonstrated by the presence of five common Russian Goal prefixes and only four Source prefixes, and four common Czech Goal prefixes and only three Source prefixes. Nevertheless, there are some apparent contradictions. Why, for instance, are the two most frequent prefixes in Czech and Russian Source prefixes (followed by a Path prefix, with a Goal prefix only ranking fourth)? And why is there a specific Source Contact Prefix but not a distinct Goal Contact prefix?

An answer to the first question was suggested in the previous section -- that the deictic uses of *вы-/vy/-* and *у-/od-* account for their high frequency here. Assuming this is true, it is worth considering whether *вы-/vy/-* may be truly considered a Source prefix in its deictic use. For exiting containers or coming out from behind an object at the outset of a film, *вы-/vy/-* typically occurs with Source prepositions. For coming on-screen, however, *вы-/vy/-* almost always occurs without a prepositional phrase. The reason would seem to be that the source point is ambiguous or irrelevant and the goal point is known -- it is the visual field of the observer (or otherwise some domain that is accessible to a conceptualizer). It is significant that the inference concerning accessibility clearly places the conceptualizer at the goal point of the trajectory. Normally a theoretical conceptualizer can be at either the source or goal point:

(85) a. Мы стояли во дворе и вдруг он вы-шел к нам из дома†
We were standing in the yard and suddenly he came out of the house towards us
(speaker/conceptualizer at goal point)

b. Мы стояли в доме и вдруг он извинился и вы-шел из дома†
We were standing in the house and suddenly he excused himself and went out of the house (speaker/conceptualizer at source point)

The inference that the goal state represents accessibility, however, forces the conceptualizer to remain fixed at the goal state. Since the source -- some kind of inaccessibility -- often remains ambiguous, or at least not explicit, it seems that the focus has shifted to the relationship between the conceptualizer and the TR, which is closest at the goal state. The conceptualizer, or domain of accessibility to the conceptualizer, is now acting like an LM, and the TR is linked to the LM at the goal state,

not the source state. One of the principal inferences included in the semantic network of *вы-/vy$_1$-*, then, effectively converts it to a Goal prefix. This interpretation suggests that Source prefixes are not simply more frequent than Goal prefixes, but rather that one of the most common Source prefixes is actually often acting as a Goal prefix. All of the functions of *вы-/vy$_1$-* listed above which rely primarily upon inference 2 and 3 may thus be considered goal oriented in the sense that they presuppose a conceptualizer located at the goal state.

Evidence for this can be found in non-spatial usages of the prefix *вы-/vy$_1$-* as well. Consider the Russian verbs *за-болеть* 'to fall ill' and *вы-здороветь* 'to recover (from illness)'. Illness is generally conceptualized as a noncanonical state relative to health, thus *за-* has combined with a verbal root referring to *sickness* (*болезнь*) which might be taken as the explicit "landmark", and indicates that at the goal state the trajector is in a noncanonical state, namely ill. In contrast, *вы-* combines with a verbal root referring to *health*, indicating that at the goal state the trajector is in a canonical state, namely one of health. Often there is some ambiguity as regards source/goal orientation, a direct result of the ambiguity in prefix motivation. The Russian verb *за-копать*, Czech *za-kopat*, *za-hrabat* 'to bury', appears to be a clear example of a Goal prefix, since the trajector (the bone in example (86)) ends up in a closer relationship to the LM (the ground) at the goal state of the action:

(86) Pes za-hrabal kost do země[†]
The dog buried the bone in the ground

The motivation for *за-*, however, arises from the fact that in the unburied state, the object is accessible to a conceptualizer, whereas in the buried (goal) state the object of the verb will be inaccessible to the conceptualizer. Similarly Russian *вы-копать* and Czech *vy-kopat*, *vy-hrabat* 'to exhume' indicate a closer relation between explicit TR and LM at the source state, yet suggest that in the goal state the TR will be accessible to the conceptualizer. In such cases one might consider the landmark for the prefix to be ambiguous between the explicit landmark (the ground in this last example) and a conceptualizer. If the prefix landmark is taken as equivalent to the explicit landmark for the entire construction (constructional landmark), these prefixes are classified (as Source or Goal prefixes) as expected according to their use with verbs of motion. However, if the focal point is taken to be the conceptualizer, *вы-* becomes a Goal prefix, in direct opposition to its original spatial designation.

This apparent paradox is, in fact, a symptom of abstraction, since the focus is no longer on a concrete, spatial LM at all, but on a generalized inference which holds at a goal world state. Such inferences may be only distantly related to the concrete LM of origin. It will be argued in Chapter 6 that in such cases prefixes are essentially abstract, and that it is preferable not to speak of TRs and LMs at all. Instead, prefixes may be profitably described in terms of the claims they make regarding the nature of the action itself or the goal world state.

Nevertheless, in cases where abstract prefixation is applied to verbs denoting concrete, spatial actions, the status of the prefix as spatial vs. abstract may remain ambiguous. If the prefix is treated as fully spatial, the concrete trajector and landmark

express the expected Source and Goal relations. There is some reason to treat *вы-копать, vy-kopat, vy-hrabat* 'to exhume' in this manner since the explicit landmark, the ground, may be viewed as a source container for the bone in the following example:

(87) Собака вы-копала кость из земли†
The dog dug a bone up out of the ground

If, however, the focus is on the accessibility of the bone (to the dog, the world-at-large), *вы-* may be considered an abstract prefix which does not really concern itself with the concrete landmark (the ground). The argument in favor of an abstract interpretation for the prefix is more potent for *за-/za-*, in this particular example, since the bone is not going *behind* the ground, so much as *into* it. In other words, the import of *за-/za-* in this context is clearly that burying a bone makes it inaccessible. This situation might be viewed as a goal containment use of *за-/za-* rather than a goal proximity relation that is also <+behind>, but, as we saw in section 3.5.5, the use of *за-/za-* as a Goal Containment prefix derives from the inference of inaccessibility and qualifies as an abstract use of the prefix that has been applied anew to spatial contexts.

The accessibility inference and deictic use most likely account for the high frequency in the database of both *вы-/vy|-* and *у-/od-*, since *у-/od-* was most often used to generate the corresponding inaccessibility inference in this study. Another reason why Source prefixes should be more common than Goal prefixes was mentioned in Section 3.5.1 above. Source prefixes can hint at a source state without explicitly focusing on it, allowing the prepositional phrase to elaborate the goal state. This interpretation agrees with the data that Source prefixes combine with a greater percentage of Goal prepositions than Goal prefixes do with Source prepositions. Of course, there is nothing to prevent a speaker from using explicit Source and Goal prepositional phrases at once to fully elucidate the trajectory of the figure, but in practice this is not so common. It is, however, more likely in Czech than in Russian. Czech speakers in general often combined two or more prepositional phrases (of all types -- Source, Path, and Goal --) with a single verb token, whereas Russian speakers rarely did so. This may be partly due to an increased flexibility in prefix interpretation in Czech, which has been hinted at, so that more elaboration is possible or required in the form of prepositional phrases.

3.7.4 The absence of a Goal Contact prefix

Goal orientation may also partly explain why there is a specific Source Contact Prefix but not a distinct Goal Contact prefix. Goals are typically made explicit, and Goal prepositional phrases are much more common than Source prepositional phrases overall in the database. (For the entire database 20% of verbs of motion occurred with Goal prepositional phrases in Russian, whereas 12% occurred with Source prepositions. In Czech 30% occurred with Goal prepositions and 14% with Source prepositions.) Since motion in contact with a surface is typically redundant, and since Goal prepositions are more likely to be explicit than Source prepositions, the Goal Contact prefix is doubly redundant. Furthermore, the proximity, contact, or containment relation of trajector to landmark is often clear from the manner of motion indicated by the verb

and from world knowledge concerning types of trajectors and landmarks and how they interact. Finally, several Goal prefixes (*в-/v-*, *за-*, *при-/při-*, *до-/do-*) may be borrowed for goal contact situations under various circumstances, although they will express something more specific than neutral goal contact. While the same may be said of Source Contact prefixes in theory, in practice there is a smaller inventory of Source prefixes to choose from, and they are more restrictive in meaning. Thus, the source contact situation has limited options available for expression via other prefixes. For instance, *вы-/vy/-* is never used as a Source Contact prefix unless the source state is clearly inaccessible or noncanonical in some way. Only *y-* and *od-* are viable options. *Y-* carries the additional sense of domain departure, making it a non-neutral choice as well. (*Od-*, on the other hand, is quite acceptable in Czech and is the preferred prefix for source contact situations without a downward component.)

The combination of redundancy in the notion of contact, redundancy in the Goal prepositional phrase expression, contextual information, and the variety of viable options for other prefixes to fill in for goal contact situations explains why a separate Goal Contact prefix (*на-/na-*) has not been maintained. Instead it has been appropriated for other uses, including the expression of contact which is not of the support surface variety (e.g. collisions: *на-ехать* 'to run into, run over, to collide with,' *na-jet* 'to collide with, strike against').

3.8 The trajectory orientation and TR/LM relational features revisited

Throughout this chapter we have seen that even in describing simple motion events, the features <proximity>, <contact>, and <contain> often lose their relevance and are superseded by inferences or associations which arise from these original spatial relations. Indeed, in non-spatial contexts the notions of proximity, contact, and containment may be considered altogether irrelevant. The inferences they generate, however, will have import in both spatial and non-spatial realms. In some cases, inferences from different spatial relations may partially or fully coincide. This accounts for some apparent synonymy among abstract prefixes (cf. *вы-думать* 'to invent, to make up' *при-думать* 'to think up, invent'). In such cases a given prefixed form may become associated with particular contexts or idioms, or slightly different senses of a general concept. Despite such apparent synonymy, the motivation for an inference can usually be discerned from the original spatial sense of the prefix. We have seen a preview of this here with the prefixes *вы-/vy/-* and *за-/za-*. We have also seen that the <source> and <goal> features are not inviolable, since inference often shifts the focus of an utterance to a situation which holds in the goal world state. These topics are taken up for discussion in more detail in Chapter 6.

Chapter 4. Path Prefixes in Czech and Russian

4.1 Classification of Path prefixes

Path prefixes, like Path prepositions, designate a relationship between trajector and landmark which is closest at some point during the trajectory rather than at either the source or goal point. The inventory of Path prefixes is quite limited in comparison to Path prepositions, with only three prefixes (*про-/pro-, пере-/pře-, о(б)-/o(b)-*) occurring with regularity in the database, only two of which (*про-/pro-, пере-/pře-*) are common.

It might be expected that *по-/po-* would also belong among the Path prefixes, since it derives from a Path preposition (*по/po*). Although *по-/po-* is related to Path prefixes in certain respects, it also shares features with Source/Goal prefixes and might be legitimately considered ambiguous between the two categories. In any case, the prefix *по-/po-* behaves rather differently from other Path prefixes. This prefix will be taken up in detail in the next chapter, but at least one justification for excluding it from the ranks of Path prefixes should be mentioned here. One syntactic feature which distinguishes Path prefixes from Source/Goal prefixes is the possibility for landmark expression as the complement of the verb itself, typically in the accusative case, rather than as the complement of an intervening preposition. Verbal constructions with the prefix *по-/po-* do not occur with landmarks as verbal complements. This differentiates *по-/po-* from the other Path prefixes. It will be argued that the complement of the preposition should not be considered the appropriate landmark for the prefix either, thus distinguishing *по-/po-* from Source/Goal prefixes as well. Finally, although *по-* occurs with more Path prepositions than either Source or Goal prepositions (see Table 4.1), the percentage of such expressions is much lower than for other Path prefixes, and it is common for *по-* to occur without a prepositional phrase at all.[1]

4.2 Co-occurrence of prefixes and prepositions

A frequency analysis of prepositional phrases and landmarks with Path prefixes once again allows at least preliminary classification of the Path prefixes according to the features <proximity>, <contact>, <contain>. Table 4.1 displays the frequency of prepositional phrases expressing <source>, <path>, <goal>, as well as <proximity>, <contact>, <contain>[2], for each of the Path prefixes.

[1] Czech *po-* is not included, as there were only a few examples of the prefix in the entire database. The reason for this is discussed in the following chapter.

[2] The Proximity, Contact, or Containment designation refers only to the Path prepositional phrases, not to either Source or Goal prepositional phrases.

Table 4.1. Frequency of prepositional phrase (PP) types with Russian and Czech Path prefixes[3]

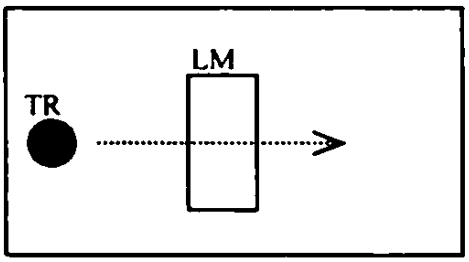
Path Prefixes	no PP	Source PP	Goal PP	Path PP	Prox PP	Contact PP	Contain PP
Russian *про-*	16%	0%	4%	96%	41%	39%	21%
Czech *pro-*	12%	0%	2%	98%	31%	15%	54%
Russian *пере-*	0%	4%	5%	92%	0%	98%	2%
Czech *pře-*	4%	4%	8%	88%	14%	76%	10%
Russian *о(б)-*	0%	0%	0%	100%	100%	0%	0%
Czech *o(b)-*	0%	0%	0%	100%	100%	0%	0%
Russian *по-*	46%	6%	35%	67%	19%	75%	6%

Note: Columns labeled *Source PP, Goal PP, and Path PP* give percentages of prefixed verbs of motion which occurred with either a Source, Goal or Path prepositional phrase, respectively. *No PP* indicates the absence of modification by a prepositional phrase. Columns labeled *Prox PP, Contact PP*, and *Contain PP* give percentages of Path prepositions expressing proximity, contact, or containment relations with their landmark complements.

Table 4.1 indicates that the prefix *про-/pro-* is flexible with regard to proximity, contact, and containment in both Russian and Czech, although there is at least some tendency to favor proximity in Russian and containment in Czech. The prefix *пере-/ pře-* is primarily a Contact prefix, but Czech *pře-* seems significantly more flexible than Russian *пере-* in applying to situations of proximity or containment as well. *О(б)-/o(b)-* appears to be exclusively a Proximity prefix, and despite the small sample size, this is easy to confirm with text examples. In addition to these three Path prefixes, Czech has the more specific Path Proximity prefix *pod-*, of which there were four examples in the database.

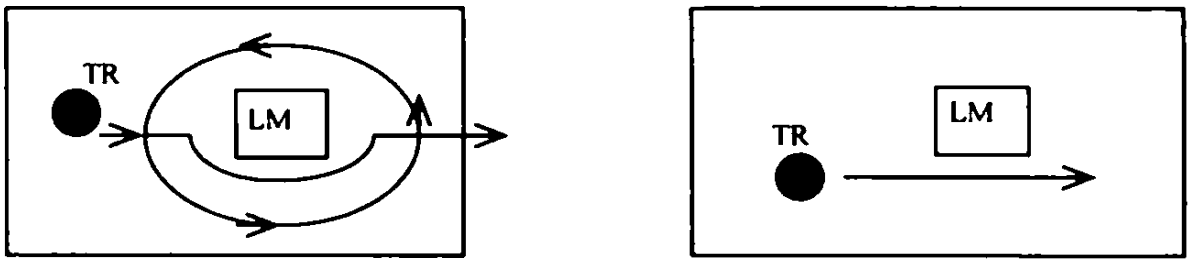
Given the frequencies of prepositional phrases with each prefix, it is not surprising that *про-/pro-* is the most common of the Path prefixes in both Czech and Russian (see Table 3.3 in the previous chapter); it is the most general of the three, capable of subsuming the relationships designated by the other two prefixes. Thus, the Path prefixes may be summarized by a single schematic figure and three subschemata (Figure 4.1, below). Since the trajector/landmark relationship is most intimate during the course of motion, for the sake of convenience Path prefix schemata are given as a single diagram with the arrow representing the motion of the trajector. Path prefixes, like Path prepositions, may also be expected to express the features <direct>, <contour>, <encircle>. The relevance of these features to Path prepositions is considered when the individual prefixes are discussed.

[3] Sample size for both Czech and Russian *о(б)-/o(b)-* is extremely small.



±proximity
±contact
±contain

a. General Path schema: *про-/pro-, (пře-)*

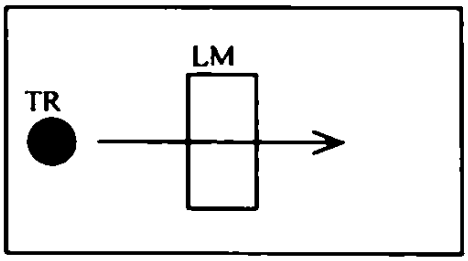


(i) (ii)

+proximity
-contact
-contain

+encircle *(о(б)-/o(b)-)* +under (*pod-*)

b. Path Proximity subschemata: *про-/pro-, о(б)-/o(b)-, пře-, pod-*



-proximity
+contact
±contain

c. Path Contact subschema: *про-/pro-, пере-/přе-*

Figure 4.1. Spatial schemata for Russian and Czech Path prefixes with Motion Verbs

4.3 Prototype semantics of Path prefixes

Of the three principal Path prefixes, only one (Czech *pře-*) is cognate to a preposition discussed in Chapter 2. (The remaining two Path prefixes also have cognate prepositions, but they are rarely, if ever, used in contexts of motion events to indicate something about the concrete spatial relation of trajector to landmark.) Despite this, Path prefixes may be expected to share the same semantic features which are relevant for Path prepositions. In Chapter 2 we saw that the primary Path prepositions are distinguished by the semantic features <contact>, <contain>, , <contour>, <encircle>. In order to discern which features are present for each prefix, however, a closer examination of the landmarks which combine with each prefix will be necessary, just as it was necessary for the Path prepositions.

4.3.1 The Path Proximity subschema

Although the Path Proximity subschema may be represented by two Russian Path prefixes (*про-, о(б)-*) and all four Czech prefixes (*pro-, pře-, o(b)-*, and *pod-*), only those prefixes limited to the Proximity subschema (*о(б)-/o(b)-* and *pod-*) are discussed in this section. The nature of the semantic overlap among all the prefixes which may represent the Proximity subschema will be considered after examining the spatial prototype of each prefix individually.

4.3.1.1 The prefix *о(б)-/o(b)-*

The prefix *о(б)-/o(b)-* in both Czech and Russian has a spatial prototype quite similar to that of the preposition *около/okolo*, 'around, near' (of which it is also a lexicalized component: *о-около/o-kolo*) and Czech *kolem*, which were briefly described in Chapter 2. The prefix refers to a trajectory which either encircles a landmark (completely or partially), or passes proximal to the landmark without contacting it:

(1) Выходит человек из дому, подходит к машине, об-ходит машину, садится в машину, уезжает.
*A person comes out of the house, approaches a car, **goes around the car**, gets into the car, leaves*

(2) Teď se blíží auto k baráku, ale **ob-jelo ho** a zmizelo
*Now a car is approaching a house, but the car **drove past it** and disappeared*

As noted in Chapter 2, the two uses are closely related in the sense that they both indicate non-contact relations between TR and LM at all points along the trajectory, and that partial encirclement implies proximal spanning, or movement past, the landmark. Thus, the encirclement proximity usage encompasses the direct and contour proximity usages. Furthermore, it was noted that in cases of static encirclement of a landmark by multiple trajectors, any single trajector is merely proximal to the landmark, making the individual trajector/landmark relationship indistinguishable from a simple proximity relationship designated by any other Proximity prefix or preposition. This fact also helps to explain the extension of the Encirclement Proximity prefix *о(б)-/o(b)-* to

<+direct, +span> contexts. The encirclement trajectory is prominent and less common in experience than other trajectory types, so it unlikely to be confused with the proximal spanning sense. When disambiguation is necessary, Russian has recourse to the Encirclement preposition *вокруг*:

(3) Инопланетянин об-ошел вокруг гор и залез обратно в свой космический корабль
*The alien **encircled** the mountains and climbed back into its spaceship*

Czech Path Encirclement prepositions (*kolem, okolo*) both extend to non-encirclement trajectories and therefore cannot serve to distinguish between the two uses of the prefix. Instead Czech speakers must use an adverbial form, such as *dokola* 'in a circle' to make this distinction.

In Chapter 2 it was noted that the <+encircle> feature implies <±contour>, since the trajectory may or may not closely echo the contour of the LM. Nevertheless, the feature <+encircle> frequently serves to highlight the feature <+contour>, since the encirclement trajectory is often provoked by the landmark, which then fully defines the contour of the trajectory. For this reason, when *o(б)-/o(b)-* extends to <+span> contexts, it tends to remain <+contour>, especially in Russian. This is a reflection of the tendency to favor a landmark-centered interpretation of the Encirclement prefix (i.e. the contour of the trajectory is not circular independent of the landmark, but is determined by the contour of the landmark itself).

Despite the fact that *o(б)-/o(b)-* is usually landmark-centered, the prefix may also extend to proximal spanning contexts which are <-contour>, as demonstrated in the Czech example (2) above, where the car passed the house as it moved along the street in front of the house. The car does not closely follow the contour of the house and does not expend effort either to interact with it or avoid it, since the house is not located directly on the intended trajectory. This is parallel to the full extension of Czech *kolem* (and Czech and Russian *около/okolo*) from encirclement proximity situations to direct spanning contexts.

Czech *o(b)-* demonstrates further flexibility by extending to contexts which are <-span, -contour> as well:

(4) Nějaký pravěký zvíře se pomalým krokem **ob-chází řeku**
*Some sort of primeval creature is slowly **walking by the river***

Once again, this is paralleled by the occasional extension of the Czech Direct Proximity preposition *kolem* to <-span> contexts (see Chapter 2, Section 4.5.1.1). Russian *o(б)-* does not appear to extend to <-span, -contour> uses. In Czech, then, there is a degree of fluidity in the various proximity contexts, such that distinctions among direct, contour and encirclement trajectories are not fully maintained by either the prepositions or the prefix.

Both Russian and Czech *o(б)-/o(b)-* may occur with or without a preposition, but in contrast to the remaining Path prefixes, *o(б)-/o(b)-* is far more likely to occur without a prepositional phrase. Instead, the landmark is expressed as the direct

complement of the verb. This is due primarily to the fact that *o(б)-/o(b)-* is the most specific of the Path prefixes and does not generally require the further elaboration of a prepositional phrase to clarify its meaning. This is especially true in comparison to the prefix *про-/pro-*, which is represented by a schema which encompasses the subschemata for both *o(б)-/o(b)-* and *пере-/pře-* and does not distinguish among proximity, contact and containment contexts. Prepositions are therefore necessary with the prefix *про-/pro-* to further elaborate trajector/landmark relations.

The landmark-centered interpretation of the Encirclement prefix (i.e. a <+contour> version which suggests that the landmark controls the trajectory to a large extent) generates some inferences which can be detected in both spatial and abstract uses of the prefix *o(б)-/o(b)-*. There are two perspectives regarding this trajectory which result in quite different interpretations of the Encirclement schema. One perspective assumes that the trajector does not intend to interact with the landmark, but the landmark obstructs the course of motion because it is inconveniently located directly in the trajector's path. In this case the trajector must alter its course and skirt the landmark in order to continue moving towards the intended goal:

(5) об-ойти лужу
to walk around a puddle

This generates the inference that the trajector expends effort to purposely avoid the landmark. Note the presence of this inference in the metaphoric use of the verb *идти* 'to walk': *об-ойти закон* 'to evade the law'.

A second perspective assumes that the trajector intended to encircle the landmark, and leads to the inference that the trajector is expending effort purposefully to examine the landmark(s) thoroughly on all sides. Thus, the prefix may indicate that the trajector engages in some activity thoroughly or exhaustively (*об-ойти все магазины* 'go around to all the stores'; *об-думать* 'to think over, consider'). This interpretation is interesting for its near antonymy with the previous inference of purposeful avoidance. Opposed inferences of this kind turn out to be common among prefixes. They attest to the fact that a variety of interpretations may be imposed on a single, simple spatial schema.

These two inferences are thus generated by different perspectives of the same spatial schema. Nothing in the spatial schema itself implies one or the other; rather, both inferences are based on assumptions about trajector intention which cannot be directly inferred from the spatial schema. Nevertheless, for humans these inferences represent the (apparently obvious) reasons that a trajector might skirt or encircle an entity.

4.3.1.2 The Czech prefix *pod-*

Czech maintains the additional spatial Path Proximity prefix *pod-*, which indicates a trajectory both proximal to and underneath a landmark (with the term *underneath* defined relative to gravity and/or the up-down orientation typically imposed on the landmark). As with other Path prefixes, the landmark for *pod-* may occur in the accusative case without a preposition, as the direct complement of the verb:

(6) Had vlezl do vody, plaval vodou, **pod-plaval most**, plaval dál
*A snake crawled into the water, swam through the water, **swam under a bridge**, and kept on swimming*

It may also occur with the preposition *pod* (with the landmark expressed in the instrumental case to distinguish it from the goal of the trajectory):

(7) Rybka **pod-plave pod korálem** a odplave pryč
*A little fish **swims under a coral** and swims away*

4.3.2 The Path Contact subschema: the prefix *pere-/pře-*

The prefix *пере-/pře-* is cognate to the Czech Direct Contact preposition *přes* and the spatial prototype for this prefix is quite similar to that for *přes*. The data in Table 4.1 demonstrates that *пере-/pře-* is clearly a Contact prefix in both languages. As with Direct Contact prepositions, the interaction of the features <+contact> and <+span> has the effect of highlighting the <+span> feature and elevating it to the status of the principal feature in the prototype. In fact, for the Russian preposition *через* it may be recalled that <+span> is truly the single distinguishing feature of the prototype, since *через* does not distinguish contact and containment situations, and may occasionally extend to proximity contexts when spanning is highlighted. (The prefix *пере-*, however, is confined to contact situations.) A further demonstration of the direct contact status of *пере-/pře-* comes from an examination of prepositions and landmarks which combine with the prefix. Table 4.2 below summarizes this information:

Table 4.2. Prepositions used with the Path Contact prefix *пере-/pře-* in Russian and Czech

Russian preposition/case	% total	Czech preposition/case	% total
accusative case	44%	accusative case	35%
через	44%	*přes*	33%
по	4%	*po*	4%
между	1%	*kolem, podél, před, pod, etc.*	9%
		instrumental case, *skrz*	4%
Source/Goal preps	8%	Source/Goal preps	12%
no preposition/LM	0%	no preposition/LM	4%

Landmarks in the accusative case and with the <+span> prepositions *через/přes* occur with 88% of verb tokens prefixed with *пере-* in Russian and 67% of verb tokens prefixed with *pře-* in Czech. All remaining Path prepositions occurred with only 5% of Russian verb tokens and 17% of Czech verb tokens prefixed with *пере-/pře-*. While *přes* is a clearly established Direct Contact preposition, as just mentioned, *через* is ambiguous in this regard. An examination of landmarks occurring with the Russian

prefix *пере-* and the preposition *через*, however, shows that 100% of the landmarks are surfaces for motion, or at least have a support surface as a prominent feature. *Через* is therefore acting exclusively as a Contact preposition in this context. Landmarks in the accusative case offer a more direct assessment of prototypical landmarks for the prefix. For Russian *пере-*, again, 100% of landmarks in the accusative case are surfaces for motion. Furthermore, all of these landmarks are spanned in a short dimension. For Czech *pře-* 88% of landmarks in the accusative case are surfaces for motion and 94% were clearly spanned in the short dimension. In both languages roads, rivers, and bridges are the most common landmarks with this prefix. From this analysis of prepositions and landmarks it is clear that *пере-/pře-* is a Direct Contact prefix. Like the cognate Direct Contact preposition, *přes*, the primary distinguishing features for both the Russian and Czech prefix are <+span> and <+contact>.

Notice from Table 3.3 in the previous chapter that the prefix *pře-* is more common in Czech (10% of all prefixed verbs) than *пере-* is in Russian (5% of all prefixed verbs), suggesting that the Russian prefix has a more restricted meaning. Indeed, in the database Russian *пере-* is found only in constructions with the spanned object in the accusative case or as the complement of the Path preposition *через*. (It will be argued below that occurrences of *по*, and one instance of *между*, do not in fact refer to the spanned LM indicated by the prefix. All but one of the examples with *по* and *между* have some other primary spanned landmark (see example (13) below).) Czech *pře-*, in contrast, appears with 10 different Path prepositions/cases in addition to the accusative case. Although the contact preposition *přes*, and contact situations generally (see Table 4.1) are clearly favored, fully 24% of landmarks occurring with Czech *pře-* indicate a proximity or containment relation to the trajector. This is true for landmarks in the accusative case, as well as for landmarks as prepositional complements; landmarks spanned proximally by the trajector account for 12% of examples in the accusative case in Czech:

(8) Auto jede k domu, **pře-jíždí ho**, a odjíždí pryč
*A car is driving towards a house, **drives past it**, and drives away*

(Recall that Russian *пере-* has 100% surface landmarks in the accusative case.) Once again, this is in keeping with a general trend for Czech prefixes to show greater flexibility, and suggests that the prototype for Czech *pře-* is distinguished primarily by <+span> and only secondarily by <+contact>. Czech *pře-* thus at times extends to cover the general Path schema and can compete for semantic territory with both *o(b)-* and *pro-*. The reason for the weakening of the <+contact> feature, as well as the difference between *o(b)-*, *pře-* and *pro-* will be taken up for further discussion in Sections 4.4 and 4.5.

4.3.2.1 Inferences generated by the Contact subschema

In the discussion of Direct Contact prepositions it was noted that the <+span> and <+contact> features have the effect of emphasizing the <+span> feature, and in particular, therefore, focusing on the presence of two sides to the landmark object. For this reason, *пере-/pře-* may easily occur with landmarks which do not have a clear short

dimension. In these cases it indicates that the entire landmark is traversed from side to side by the trajector while remaining on the surface:

(9) Человек пере-лез через гору при помощи веревки
*A person **climbed over a mountain** (i.e. from one side to the other side over the peak) with the help of a rope*

Nevertheless, landmarks in the accusative case in both languages almost always possess an obvious short dimension in which the LM is spanned (excepting bridges, which are spanned in the long dimension. Bridges will be further discussed shortly.) Landmarks without a short dimension seem to precipitate the use of the preposition *через* or *přes* (example (9), above). Long, narrow surface landmarks (e.g. roads, rivers) thus appear to be the preferred type of landmark for the prefix and account for one typical extension of the prefix *пере-/pře-*: to indicate movement from one distinct place to another across a boundary.

Notice that this interpretation of the prefix is essentially a figure/ground reversal of the notion of spanning for the landmark itself against the background it defines. In other words, instead of focusing on the landmark as being spanned from one edge of the LM to the other (which is more appropriate for larger LMs), the focus is on movement from one distinct place or space to another, with the landmark serving as the boundary or barrier between the two. The landmark thus defines the two (profiled) spaces and is itself relatively de-emphasized. This kind of figure/ground reversal is possible for all prefixes, but the source and goal locations come into focus with this prefix in particular as a result of the <+contact> feature, since contact with terrain on either side of the LM confers salience on this terrain as well. (Recall that objects, such as a tree, spanned proximally in the lateral dimension do not easily define such spaces on either side.) This use of the prefix *пере-/pře-* is quite common in both spatial and abstract examples, and the resultant inference that the trajector has moved from one distinct location to another accounts for the submeaning 'to transfer from one place to another, to move (to a new residence)', etc.:

(10) a. Мальчик привез на машине груз и пере-нес его в дом
*A boy drove up with a load in a car and **brought it over** into the house* (crossing a boundary from outside to inside the house)

b. пере-ехать в новую квартиру
*to **move** into a new apartment* (movement from one distinct place to another, thus crossing an abstract boundary which defines spatially and temporally distinct states of domicile)

c. **pře**-ložit článek z češtiny do angličtiny
*to **translate** an article from Czech to English* ("transfer of content" from one language to another; no recoverable metaphorically spanned entity or boundary)

In these contexts it is common to use *пере-/пре-* with Source or Goal prepositions, or both, thus explicitly naming the salient space defined by the spanned LM, but not the LM (boundary) itself, which may be extremely abstract, irrelevant, or non-existent. Inferences generated from this version of spanning can account for other uses of *пере-/пре-* which are typically considered submeanings as well. For instance, the boundary may define a norm which is exceeded, giving the submeaning *excess* (*пре-sladit* 'to oversweeten'). Notice that nothing in the spatial model suggests either that the boundary LM must define a norm, or what that norm is. In Czech the use of *пре-* to indicate overlooking or missing the landmark altogether also belongs to this model (*пре-hlédnout* 'to overlook, ignore'; *пре-jet* 'to pass by, miss').

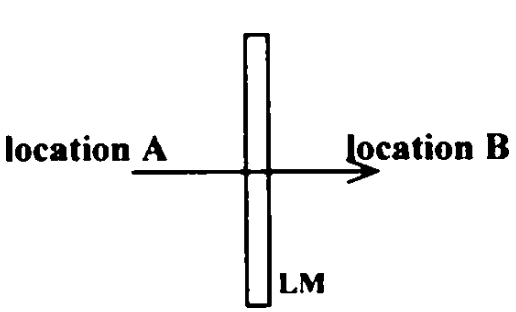
The best landmarks for *пере-/пре-*, then, are those which define two distinct locations *which are not themselves an integral part of the landmark*. Hereafter this will be called the BOUNDARY version of spanning. When the explicit landmark is extensive in space and does not itself serve as a good boundary for defining two distinct locations, the sides are somewhat nebulously defined edges of the landmark itself. In the following example, for instance, the trajector starts and finishes motion within the landmark -- a room -- but may nevertheless be regarded as spanning the room from one side to the other:

(11) Chlapec **pře**-šel přes pokoj
The boy walked across the room

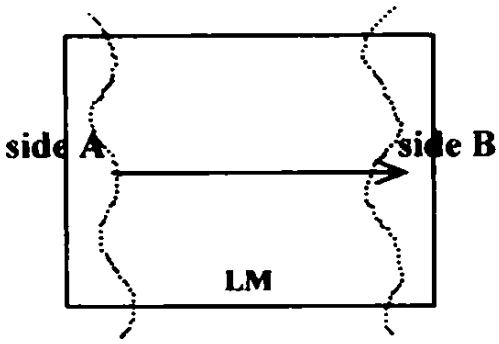
This will be referred to as the EXTENT version of spanning. The two perspectives of spanning are often responsible for distinct submeanings of *пере-/пре-*. We have already seen how a lack of emphasis on the spanned entity (boundary version), in favor of the distinct locations it defines, can generate a more abstract notion of *transfer*, as well as *excess*. The extent version focuses on the spanned entity itself. When the activity involved is some kind of cutting, spanning the landmark from side to side will divide it into two pieces. This gives the submeaning *division* (*пере-рубить* 'to chop in two'). Side-to-side traversal of an extensive, profiled entity involving direct contact with that entity generates the inference that a thorough exploration of the landmark has occurred (*пре-mýšlet* 'to think over, ponder'). The extent version also serves as a source for *duration*, where a time period, temporally extensive event, or activity is "spanned" and the temporal extent is in focus (*пре-nocovat* 'to stay overnight').

Some senses commonly given as submeanings may be generated by either version of spanning. For instance *repetition* (e.g. *пере-делать* 'to re-do, to alter') indicates that an action progressed from beginning to end, but also suggests a transition from one state to another. The "sides", or states, are interpreted temporally as the start and finish of the action, therefore the action itself must be telic (i.e. must have a clear end point) in order to generate this submeaning. Both the boundary and extent versions profile the presence of sides, but in the boundary version the sides are separate from the landmark entity and in the extent version they are integral to it. Thus the former suggests a new state obtains as a result of repeating an action (*пере-делать* 'to alter'), whereas the latter suggests simply that the action was repeated (*пере-делать* 'to re-do').

The following figure provides a graphic representation of the distinction between the boundary and extent versions of spanning:



a. Boundary version: The LM is relatively de-emphasized; the two distinct locations defined by the landmark are profiled



b. Extent version: The LM is relatively profiled; no distinct locations are defined by the landmark, but two nebulously defined sides are imposed on it

Figure 4.2. Figure/Ground reversal in spanning of spatial LMs. LMs are typically surfaces in contact with the trajector.

This is not to suggest that abstract uses of the prefix are metaphorically derived from specific landmark types (or images) or that these represent the only spatial versions of spanning which generate useful inferences. Rather, specific landmark types generate different kinds of inferences, which may or may not be useful in a variety of non-spatial contexts. Furthermore, the spatial schema alone is not sufficient to explain the specific submeanings of the prefix without reference to context, perspective, implicit evaluative measures and experiential associations, etc. Thus, although these two versions of spanning may indirectly motivate some submeanings of *nepe-/pře-*, they do not represent the only sources of submeanings for this prefix. For instance, an LM with a significant vertical component (example (9), above) generates the inference that the LM acted as an obstacle or barrier to motion and significant difficulty was encountered or effort was expended in traversing the LM. This inference could hold for either the boundary or extent version of spanning.

This is merely a superficial glance at the way in which specific spatial versions of spanning are related to the various abstract uses of *nepe-/pře-*. The main reason for distinguishing between the boundary and extent versions of the spanning event, however, is not to explain which submeanings arise from them, but rather to take note of another difference between Russian *nepe-* and Czech *pře-*. An examination of spanned landmarks with these prefixes indicates that while both languages prefer the boundary version, in spatial contexts Czech *pře-* extends much more readily to extent spanning than Russian *nepe-* does. While 90% of Russian spanning events with *nepe-* involve boundary landmarks, these accounted for only 68% of spanning events with Czech *pře-*. The significance of this fact will become clear later, in the discussion of deixis. Nevertheless, it is important to emphasize that preference for a particular spatial model in spatial uses does *not* suggest that this model is privileged in generating abstract uses. The variations in a given spatial schema may generate specific inferences and associations, but these inferences and associations are utilized in abstract domains precisely because they provide useful distinctions, not because a particular version of

the spatial schema is more prototypical. For the purpose of generating inferences, all potential realizations of a spatial schema must be considered equivalent manifestations of the spatial prototype of a prefix.

4.3.2.2 Bridges

Bridges provide a particularly interesting spatial example of a landmark which is ambiguous between the boundary and extent versions of spanning. It is quite acceptable in both Czech and Russian to use the prefix *пере-/pře-* to indicate bridge crossing, although the bridge is clearly spanned in the long dimension:

(12) Мотоциклист едет по дороге, пере-езжает мост, снова едет по дороге
*A motorcyclist is riding along the road, **rides across a bridge**, and again is riding along the road*

This is due to the general knowledge that the function of bridges themselves is to span a river (or gully, moat, etc.), and therefore trajectors would not normally move across bridges in the short dimension. Furthermore, the bridge is usually spanned (the figure generally intends to get to the other side of some obstacle, thus the bridge serves as a functional passageway), and the movement is typically in contact with the bridge. Once again, functional knowledge (here concerning the purpose of bridges) plays an important role in interpretation of the linguistic expression. (The role of functional knowledge is particularly clear in examples involving flying figures, which have no need of bridges. The expression *пере-летел через мост* 'flew across/over the bridge,' turns out to be fully ambiguous with respect to the dimension of bridge spanning; additional context is necessary to disambiguate such expressions.)

Despite the possibility of (12), above, it is more common in both languages to mention the short dimension spanning of the river as well:

(13) Девочка бежала по дороге, пере-бежала речку по мосту...
*A girl was running along the road, **she ran across a river on a bridge**...*
(river is spanned object; bridge is surface which allows spanning to occur)

The function of the bridge here is to deliver the trajector from one place to another, and the boundary between those places is defined by the river. Example (12) thus seems to fit with the interpretation of the bridge as the spanned landmark, with functional knowledge concerning bridges rendering the spanned dimension obvious, whereas example (13) treats the bridge as a passageway which allows trajector transfer from one space to another. In other words, the bridge is not, in fact, serving as the landmark for the prefix (or it is a secondary LM), since spanning of the bridge is determined by inference rather than by explicit linguistic information. In both Czech and Russian this use of *по/po* to indicate functional passageways with the prefix *пере-/pře-* makes sense; it is a contact preposition, yet its complement is not serving as the landmark (i.e. spanned object) for the prefix, therefore a <±span> preposition is appropriate. This makes it clear that Russian *пере-* is indeed very restricted, as its landmarks are expressed only with the accusative case or as the complement of the preposition *через*.

Yet another possibility in both languages is to allow the river and bridge simultaneously as landmarks for the prefix:

(14) a. Мальчик и девочка едут куда-то по дороге, они пере-езжают через мостик через речку, едут по дороге дальше...
A boy and a girl are going somewhere along a road, they ***drive across a bridge across a river****, drive further along the road...*

b. Chlapec přijel na kole, **pře-jíždí řeku přes most** a odjíždí dál
A boy rode up on a bike, ***rides across a river across a bridge*** *and rides away*

In this example both the river and the bridge are spanned and the prefix, presumably, is motivated by both landmarks.

4.3.2.3 Interaction of prefixes and prepositions

Russian *пере-* and Czech *pře-* offer an interesting glimpse at the interaction between prefixes and prepositions in establishing the semantic range of prefixes. It has been demonstrated that Russian *пере-* is more restrictive in its semantic range than Czech *pře-*, combining primarily with landmarks which act as support surfaces for motion, whereas Czech *pře-* combines quite readily with a range of landmarks that are proximal to the moving figure, and occasionally with container landmarks as well:

(15) a. Holčička **pře-chází strom** a jde pořád pomalu pryč
A little girl ***walks by a tree*** *and keeps on going slowly away*

b. Holčička pomalu přichází k vodě, **pře-chází jí**-INSTR... je po pás ve vodě...
A little girl slowly approaches the water, she ***walks through it****... she's up to her waist in the water...*

Evidence for the flexibility of *pře-* thus comes from the range of prepositions and landmarks which occur with the prefix, and also from landmarks which occur in the accusative or instrumental case in the absence of a preposition. These landmarks bypass prepositions and give a direct indication of the range of appropriate landmarks for the prefix alone. Russian has exclusively support surface landmarks with *пере-* in the accusative case, whereas Czech has primarily support surface landmarks, some proximal landmarks in the accusative, and some container landmarks in the instrumental case. This corroborates the overall picture of the semantic range for each of these prefixes.

In a reversal of this situation, looking at the most common prepositions to appear with this prefix in Russian and Czech (*через* and *přes*), the Russian preposition *через* appears to have a wider semantic range than the Czech preposition *přes*. Looking at the entire database of motion verbs, it becomes clear that *через* easily combines with both support surface and container landmarks, whereas Czech *přes* is restricted exclusively to the former, with a few potentially ambiguous cases. Therefore, when combined with the prefix *pře-*, Czech *přes* itself limits the prefix to support surface

landmarks. Since *pře-* has a more extensive semantic range than this, it combines with a wider range of Path prepositions and cases (accusative, instrumental, *po, kolem, pod, před, podél*, etc.), representing Contact, Proximity and Containment prepositions, to accommodate other potential (non-contact) uses. When Russian *через* occurs with the prefix *пере-*, on the other hand, it combines only with contact landmarks, demonstrating the restriction in the semantic range of the prefix which is imposed on the otherwise more versatile preposition. Russian *пере-* combines only with the accusative case, and path prepositions *через* and *по*, and all of these are restricted to contact landmarks. A single example of *между* occurred, implying a potential proximity or containment interpretation. This example, however, involved additional prepositional phrases expressing source contact and goal contact, which highlights a transition or boundary crossing, with the secondary prepositional phrase involving *между* merely filling in the functional pathway, as described above in the examples with bridges:

(16) Зверек пере-лезает с дерева на дерево между ветвями
A small wild animal ***is climbing across*** *from one tree(surface) to another tree(surface)* ***among the branches*** (trajector moves from one place to another, with branches defining a pathway)

(Both *пере-* and *pře-* occur with some Source and Goal prepositions. As mentioned previously, in these cases the complements of the Source/Goal prepositions define the places on either side of some spanned entity, but do not themselves indicate what entity is spanned. The spanned entity may be expressed by another preposition/case, or may be left implicit.)

The more restrictive semantic range of the Russian prefix and the wider semantic range of the Russian preposition suggest one explanation for the observation that Czech prefixes tend to combine more readily with a wide range of prepositions than their Russian counterparts. The semantic territory of Czech prepositions may be more restricted than their cognate Russian counterparts (and the presence of a distinct Containment expression -- the instrumental case -- argues in favor of this) and may allow for greater semantic flexibility in the prefixes. Flexibility of Russian prepositions, in contrast, would demand more specificity in the semantic range of prefixes.

4.3.3 The prefix *pro-/pro-*

The prefix *про-/pro-* (refer to Table 4.1) presents an unusual profile, showing relative indifference to the features <proximity>, <contact>, and <contain>. Although this is also the case for a few Source and Goal prefixes (*у-/od-, при-/při-, до-/do-*), in each of these instances an element of abstraction (domain entry/exit, limit attainment) turned out to be the principal distinguishing feature for these prefixes. In such cases the TR/LM relational features were no longer relevant with respect to an explicit, concrete LM. Russian *про-* occurs in conjunction with 8 different Path prepositions, plus landmarks in the accusative case, and Czech *pro-* occurs with 10 Path prepositions, plus landmarks in the instrumental case. *Про-/pro-*, then, appears to be a maximally inclusive Path prefix indicating merely that a trajector and landmark have attained some

kind of relationship during the course of the trajectory, but the nature of this relationship can only be established by a prepositional phrase or the properties of the landmark itself. If this is so, *про-/pro-* adds little, if any, semantic content to identical expressions with unprefixed determinate verbs of motion. Indeed, the two often alternated in trials with a single speaker:

(17) a. trial 1: Волк идет по лесу
*A wolf **is walking along in the forest***

b. trial 2: Волк про-шел по лесу
*A wolf **walked along in the forest***

c. trial 1: Девочка стоит у лестницы, ползет по этой лестнице, остановилась
*A girl is standing by a ladder, she **crawls up the ladder**, she stopped*

d. trial 2: Девочка стояла около лестницы, потом про-ползла по ней и остановилась
*A girl stood by a ladder, then she **crawled up the ladder** and stopped*

Under these circumstances one might assume that the prefix *про-/pro-* simply derives a neutral perfective for determinate verbs of motion, not conveying any lexical semantic content at all. Several facts argue against this interpretation. First, *про-/pro-* is quite common in both the present and past tense as an imperfective verb form, so it cannot be considered useful merely in its perfectivizing function:

(18) a. Рыба про-плывает между водорослями
*A fish **is swimming** among the seaweed*

b. Мальчик на машине про-езжал по лесу и остановился
*A boy in a car **was riding** along in the forest and stopped*

Secondly, Czech determinate verbs of motion are neutral with respect to aspect, serving equally well as imperfectives and perfectives. If the function of Czech *pro-* is merely as a perfective form for determinate verbs of motion, it would be expected to occur much less frequently than Russian *про-*, if at all. This, however, is not the case; *про-/pro-* is the most common Path prefix in both languages and comparable in frequency in both Russian (15% of prefixed verbs of motion) and Czech (12% of prefixed verbs of motion) in the database. Finally, a comparison of the types and percentages of prepositional phrases occurring with unprefixed, determinate verbs of motion and those prefixed with *про-/pro-* shows a distinctly different profile in both languages:

Table 4.3. Frequency of prepositional phrase types: a comparison of Russian and Czech *про-/pro-* to unprefixed determinate Motion Verbs

	no PP	Source	Goal	Path	Prox	Contact	Contain
Russ *про-*	16%	0%	4%	96%	41%	39%	21%
Russ det. VM	43%	1%	20%	86%	19%	73%	8%
Czech *pro-*	12%	0%	2%	98%	31%	15%	54%
Czech det. VM	29%	8%	35%	57%	22%	62%	16%

Although it appears that Russian *про-* favors a proximity interpretation, whereas Czech *pro-* is containment oriented, the comparison in Table 4.3, above, indicates that a certain trend holds for both languages: both Russian *про-* and Czech *pro-* show greatly increased percentages for containment expressions, somewhat increased percentages for proximity, and greatly reduced percentages for contact expressions when compared with unprefixed determinate verbs of motion.[4] Proximity expressions increase by 41% in Czech, whereas they more than double in Russian (116% increase). Despite the fact that proximity expressions are more common than containment expressions with Russian *про-*, containment expressions show a significantly larger increase in frequency (163%) than proximity expressions when compared with unprefixed determinate verbs of motion. In Czech the number of containment expressions has more than tripled in comparison to figures for determinate verbs of motion. It may now be recalled from Chapter 2 that path containment situations are generally uncommon (relative to contact and proximity situations), and while Czech has a specific containment expression (the instrumental case), Russian does not, and may compensate for this in a variety of ways. One common way is to use Proximity prepositions such as *под* 'under':

(19) Девочка про-ходит под аркой
*A girl is passing **under** an archway*

Recalling also from Chapter 2 that the instrumental case in Czech may be better described as expressing the notion of *functional passageway/medium of motion* rather than containment per se, it may be useful to look at the percentage of landmarks for *про-/pro-* which act as functional passageways (e.g. arches, bridges, roads) or media of motion (e.g. water for a swimming figure). In Russian such landmarks account for 48% of expressions with *про-*. In Czech fully 80% of landmarks with *pro-* may be thus classified.

An examination of Russian *про-* with complements in the accusative case is even more instructive, since landmarks expressed in the accusative case give a more direct assessment of the prefix itself. The first significant fact to emerge is that landmarks in the accusative case account for a mere 9% of path expressions with Russian *про-*. In contrast, Czech *pro-* (which does not occur with landmarks in the

[4] Recall that here TR/LM relational features <proximity>, <contact>, and <contain> refer only to prepositional phrases expressing the <path> feature.

accusative case) occurs with the instrumental case in 37% of path expressions with *pro-*. Due to the small percentage of landmarks occurring in the accusative case with Russian *про-*, an analysis of these landmarks was carried out for the larger data set comprised of all transcriptions of Russian material. Of 57 such expressions in the accusative case, only 5% expressed proximity relations between trajector and landmark. Contact expressions accounted for 33%, and containment expressions, 61%. Furthermore, landmarks which could be readily interpreted as functional passageways or media of motion comprised 70% of these expressions in the accusative case.

What this combined set of observations suggests is that *про-/pro-* is actually primarily a Containment (or functional passageway/medium) prefix in both Czech and Russian. The fact that *про-/pro-* can combine with a number of prepositions reflects a refinement in the description of the trajectory. The high percentage of proximity expressions in conjunction with Russian *про-* may now by explained by the absence of a distinct Containment preposition/case and the general compatibility of the proximity and containment senses. This can be realized in two ways. First, a functional passageway such as an arch is generally proximal to the trajector as well, and, as seen in example (19), above, Russian frequently uses proximity prepositions. Secondly, the prefix *про-* and the Proximity preposition may actually refer to different landmarks. For instance, if a car is moving along a road (functional passageway) and passes a house in the process, the two types of events are quite compatible:

(20) Машина про-ехала мимо дома
A car is passing by a house

The problem is in verifying that the prefix is at least in part motivated by a different landmark here than the prepositional phrase, since the presumed landmark for the prefix in examples such as (20) is not mentioned explicitly. In order to support this suggestion, it is necessary to look at the wider narrative context of prefix usage. It seems that in describing the action occurring in the films, Russian speakers tend to begin narration by introducing the basic kind of motion in the most neutral terms available -- with an unprefixed determinate verb of motion and, for figures moving in contact with a surface (the most common kind of trajector), a Contact preposition:

(21) По дороге ехала машина...
*A car **was driving** along the road...*

Once the basic motion type and landmark is introduced, speakers then use prefixed verbs of motion with other prepositional phrases to further specify pieces of the trajectory in relation to other landmarks. Nevertheless, the basic contact relation established in the first phrase is presumed to apply (unless the verb form is changed to indicate that motion is no longer in contact with a surface):

(22) Машина едет по дороге, про-езжает мимо дома и уезжает
*A car **is driving along the road**, drives past a house and drives away*

Prefixes in general have the function of breaking up continuous motion into smaller pieces -- trajectories. This is what is meant by saying that prefixes make reference to a source-path-goal schema. By limiting the scope of interest and imposing a source, path, and goal on otherwise continuous motion through space, the prefix creates an event from something potentially durative, given a larger scope. The suggestion I will make here for the prefix *про-/pro-* is not that the road in example (22) is the appropriate landmark for the prefix, but rather that the LM is some arbitrarily defined piece of the larger path of motion -- the trajectory -- which is traversed simultaneously with the proximal passing of the house. In other words, *the trajectory is the landmark.* On occasion a speaker may make this explicit:

(23) Змея спустилась в воду, про-плыла часть своего пути по реке, потом она скрылась под мостом...
*A snake descended into the water, **swam through part of its journey along the river**, then it disappeared under a bridge...*

One way of interpreting this suggestion (in light of the demonstrated emphasis on functional passageway/medium of motion) is that *про-/pro-* refers to the passage through, or penetration of, space itself. Evidence for this comes from the possibility of using a specific distance in space as the explicit landmark for *про-/pro-:*

(24) a. Собака стояла на коврике, потом про-шла несколько шагов
*A dog was standing on a rug, then it **walked several steps***

b. Появилась собака, она про-бежала несколько метров и потом остановилась
*A dog appeared, it **ran several meters**, and then it stopped*

Motion through space is fully compatible with additional landmarks which may be proximal to, in contact with, or containing the figure, explaining why *про-/pro-* is quite flexible in combining with prepositional phrases that express these parameters. (In fact, Russian *про-* is unusual in that it occurs with multiple prepositional phrases per prefixed verb token. Other Russian prefixes typically exhibit a strong tendency to have only one prepositional phrase per prefixed verb token. This may be taken as further evidence that *про-* refers to something more extensive than the explicit landmarks.) The reduction in expressions involving contact as compared with determinate verbs of motion (or conversely the greater use of contact expressions with determinates) is explained by the fact that motion is generally introduced in terms of a determinate verb and a contact prepositional expression. Thereafter the contact status is assumed and need not be reiterated (unless there is a change in surface terrain).

There is a significant difference between Czech and Russian in this regard, however. In contrast to Russian, Czech *pro-* is much more tightly bound to concrete, linguistically explicit landmarks. As noted above, fully 37% of the Czech examples occurred with landmarks in the instrumental case functioning as the means of motion. However, examples of Czech *pro-* with multiple prepositional phrases per verb token

demonstrate that, in Czech also, containment is quite compatible with both proximity and contact:

(25) Pes **pro**-bíhal pokojem-INSTR přes rohožku
A dog ran through the room across a rug

Here the explicit landmark for the prefix *pro-* is the room (*pokoj*), but simultaneously a rug (*rohožka*) is traversed as well. Although Czech *pro-* is typically more directly linked to such explicit landmarks rather than space itself, as witnessed by the preponderance of containment expressions, this prefix may also refer to an arbitrary expanse of space. This can be seen in examples where multiple prepositional phrases refer to serially spanned landmarks (in contrast to example (25), where LMs are simultaneously spanned), such that *pro-* must refer to a an extent of space which encompasses the entirety of the explicit trajectory:

(26) Chlapec **pro**-cházel po rohožce, potom kolem lampy, až došel ke schodům
*The boy walked **through** on a rug, then past a lamp, until he reached the stairs*

One problem with this interpretation of the prefix *про-/pro-* is simply that *movement through space* seems completely redundant with the concept of motion in general, and one wonders why the prefix *про-/pro-* would exist at all, since determinate verbs of motion define a trajectory as well. In Chapter 2 the same issue was brought up regarding the apparent redundancy of the instrumental case in Czech. It was suggested that the instrumental case construes the landmark as a functional passageway for motion, something which is quite redundant with the concept of path more generally. Indeed, in this case the landmark for *про-/pro- is* the abstract trajectory defined by the prefix, which, for motion verbs, is a path through actual space:

(27) Машина спускается в реку, ну, тут ее скорость, конечно, падает, но, тем не менее, они отлично про-ходят этот участок пути и едут все дальше и дальше...
*The car is descending into the river, well, here its speed, of course, drops, but, nevertheless, they **pass through this portion of the journey** superbly and keep going further and further...*

The answer to this lies partly in the fact that by indicating completion of an arbitrary trajectory in space *про-/pro-* quantifies the motion event. This function of *про-/pro-* will be taken up in greater detail in the following chapter.

The foregoing discussion suggests that, in terms of distinguishing it from the other Path prefixes, *про-/pro-* may be interpreted as a Containment prefix in origin. Spatially it often refers to containment in, or passage through, space. Abstractly the landmark is equivalent to the entirety of the trajectory defined by the prefix. This is fully compatible with simultaneous contact and proximity landmarks as well. For this reason *про-/pro-* appears to overlap to a large extent with both *о(б)-/o(b)-* and *пере-/ pře-*. Whereas *о(б)-/o(b)-* may focus on the <+contour> feature, and thus on moving

closely around an obstacle in the trajectory (hence either avoiding it or interacting with it intimately), *про-/pro-* indicates that the trajector merely happens to pass proximal to an object which is neither located directly on the trajectory nor specifically being avoided. This leads to the use of *про-/pro-* to indicate accidentally passing, missing, or overlooking an object. *Пере-/pře-* focuses on movement from side to side of the landmark, or on boundary crossing, where the landmark defines the boundary. While *про-/pro-* is quite compatible with these contexts, it does not focus attention on the side-to-side movement across the landmark, but rather on the landmark as medium or passageway. Thus, for example, while *пере-/pře-* was the most common prefix in both languages to describe river crossings on a bridge, when a close-up view of a vehicle driving directly through the water from one side of the river to the other was presented, speakers of both languages preferred the prefix *про-/pro-*:

(28) a. Они едут опять по дороге, про-езжают в брод реку, приезжают в город...
*They are once again driving along the road, they **drive through the river by fording it**, arrive in a town...*

b. Přes cestu jim vedla řeka, **řekou**-INSTR **pro-jeli**, šťastně z ní vyjeli...
*A river ran across the road in front of them, they **drove through the river**, successfully drove out of it...*

In Section 4.3.2.2 it was mentioned that expressions given in examples (13) and (14), repeated here as (29)a and b, might be interpreted as a spanning of the bridge and a spanning of the river by means of the bridge respectively:

(29) a. Мальчик и девочка... пере-езжают через мостик через речку
*A boy and a girl **drive across a bridge across a river*** (bridge and river are both spanned landmarks)

b. Девочка... пере-бежала речку по мосту
*A girl... **ran across a river on a bridge*** (river is spanned landmark, bridge is surface which allows spanning to occur)

Some additional evidence for this suggestion is now available. The prepositional phrase *через мост/přes most* occurs primarily with the prefix *пере-* (as in the example above) in Russian, and exclusively with the prefix *pře-* in Czech, whereas the prepositional phrase *по мосту/po mostě* occurs in equal proportions with the prefixes *пере-/pře-* or *про-/pro-*:

(30) a. Девочка про-шла по мосту...
*A girl **walked along on a bridge**...*

b. Auto **pro-jíždí po můstku**, pokračuje dál po cestičce...
*The car **drives along over the bridge**, continues further along the path...*

When the prefix *пере-/pře-* occurs with the phrase *по мосту/po mostě* the river is typically included (as the primary spanned LM) as well.

Like the Czech instrumental case, *про-/pro-* is unmarked for spanning (with regard to explicit landmarks preceded by a preposition) and may occur with either Direct or Contour prepositions:

(31) a. Зверек про-лез через дупло в дереве
*A little wild animal crawled **through** a hollow in a tree*

b. Змея про-ползла вдоль берега реки
*A snake slithered **along** the bank of a river*

This <±span> designation also theoretically distinguishes *про-/pro-* from *пере-/pře-*. We will see in the following section, however, that although *про-/pro-* does not specifically highlight spanning, as *пере-/pře-* does, it nevertheless implies spanning when the landmark is in the accusative or instrumental case. This fact supplies further evidence that the most appropriate landmark for *про-/pro-* is, in fact, the trajectory itself.

4.3.3.1 *Про-/pro-* and the feature

It has been argued here that the appropriate landmark for *про-/pro-* is often the trajectory itself. The fact that Russian *про-* may occur with landmarks in the accusative case without an intervening preposition suggests that in many instances the designation <+path>, plus knowledge concerning the explicit trajectors, landmarks, and manner of motion (e.g. walking, swimming, flying), is sufficient to clarify the kind of relationship which holds between the trajector and the overtly named landmark. The following examples involve proximity, contact, and containment respectively, and in no case is there ambiguity regarding interpretation:

(32) a. Proximity: По дороге ползла змея, про-ползла дерево и поползла дальше по дорожке
*A snake was slithering along the road, **slithered past a tree** and slithered further down the road*

b. Contact: Змея ползет по мосту, про-ползла мост, ползет, ползет по дорожке, уползла
*A snake is slithering along a bridge, it **slithered over the bridge**, and keeps on slithering along the road, slithered away*

c. Containment: Рыба плывет по дну мимо якоря, про-плывает пещеру и уплывает
*A fish is swimming along the (sea-)floor past an anchor, **swims through a cave** and swims away*

Despite this, in many cases the interpretation remains ambiguous without further elaboration, either by means of a preposition or other additional context. For instance, theoretically *прошел дорогу* may mean either *прошел по дороге* 'walked along the road' or *прошел через дорогу* 'walked across the road.' In fact, the data demonstrates that when short versus long dimension interpretation is ambiguous with landmarks for *про-* in the accusative case, the interpretation is always short dimension, unless the entire length of the landmark is explicitly indicated. In the following example, a speaker describes a film in which a horse crossed a road as part of its journey along a riverbank. In the second trial the use of the <+span> prefix *пере-* and <+span> preposition *через* clearly indicates the short dimension spanning of the road:

(33) a. trial 1: Лошадь бежит вдоль реки, про-бегает дорогу и убегает
*A horse is running along the river, **runs across a road** and runs away*

b. trial 2: Лошадь бежала по берегу реки, пере-бежала через дорогу и убежала
*A horse was running along the bank of the river, **ran across the road** and ran away*

The single example of a long dimension interpretation of a landmark (in the accusative case) with the prefix *про-* clearly indicated that the entire landmark was traversed:

(34) Змея ползет к дереву, огибает его и ползет дальше медленно, про-ползает всю дорогу
*A snake is slithering towards a tree, goes around it, and slithers slowly on, **it slithers the whole way***

Here the entire visible path of the snake across the screen is serving as the landmark, thus it is spanned from end to end. The word *дорога* 'road, way' here refers abstractly to a route for getting somewhere rather than a physical road, since there was no actual road present in the film. The snake, therefore, traversed the entire route available across the screen.

The fact that *про-* in Russian is usually <+span> is further demonstrated by examples with prepositions that are <±span> themselves. Russian *над* 'above' may or may not involve spanning of the landmark it refers to. Nevertheless, when used in <-span> contexts, it almost invariably occurred with an unprefixed determinate verb of motion, whereas in <+span> situations it typically occurred with the prefix *про-*:

(35) Бабочка летит над рекой, про-летает над мостом и летит дальше вдоль реки
*A butterfly **is flying above a river, flies over a bridge** and flies further along the river*

In this film the butterfly flew along the length of the river, thus did not span it. In contrast, the bridge was spanned and the prefix *про-* was invoked in combination with the preposition *над* to indicate this. One way to explain this use of *про-* is to interpret the determinate verb of motion plus prepositional phrase as describing an inertial state

of affairs in which nothing interesting is happening. The prefix *про-* then defines a salient trajectory which is profiled in relation to this inertial situation. Often the reason that some arbitrarily delimited trajectory is selected as salient is precisely because of a feature in the terrain. This feature will be named explicitly as the complement of a preposition (or, rarely, in the accusative case). Then, because the explicitly named entity is the trigger for the salient trajectory in the first place, when the trajectory is traversed, this entity will be spanned as well.

There is evidence for this interpretation of Russian *про-* in comparisons of trial 1 and trial 2 in the data. It was common for speakers to use the determinate verb "introduction" plus prefixed verb for a subsequent salient trajectory in trial 1, and then in trial 2 to replace both verb tokens with a single prefixed verb token and multiple prepositional phrases:

(36) a. trial 1: Девочка идет по тропинке, про-ходит под аркой, идет дальше
A girl is walking along a path, passes under an arch, keeps on walking

b. trial 2: Девочка про-шла по тропинке под аркой
A girl passed along a path under an arch

In the first trial, uncertain of what will occur on the screen, the speaker uses the most neutral verb form to establish the initial state of affairs. In trial 2, however, the speaker can confidently subsume all landmarks traversed in the course of motion under a single trajectory, indicated by a single prefixed verb token, since the prefix *про-* refers precisely to the entirety of the trajectory as the primary landmark. In effect, the trajectory designated by *про-* in trial 1, above, is much shorter than that designated by trial 2. Furthermore, passing under the arch is separated from some initial, inertial situation as defining a separate and salient trajectory. In trial 2 the motion event has been summarized from a slightly different perspective; the salient trajectory is the traversal of the figure across the screen and all interesting features of terrain (moving on a road and under an arch) belong to the whole trajectory.

The situation in Czech is slightly different. Czech *pro-* is less common as an indicator of short dimension spanning, unless the explicit LM is clearly a container medium (as in example (28), where the river is forded by the vehicle). Recall that Czech *pře-* is less bound to <+contact> situations than Russian *пере-*. Thus, Czech *pře-* has more flexibility in indicating spanning situations of any kind, although it favors contact situations. This is especially clear with regard to flying, where Russian uses determinate verbs and the preposition *над* for <-span> contexts and *про-* with the preposition *над* for <+span> contexts, as in example (35) above. Although *пере-* is possible for <+span> contexts, it is quite rare in the data. Unsurprisingly, *пере-* never occurs in <-span> contexts. In contrast, when flying is involved, Czech speakers consistently use the prefix *pře-* (with the accusative case or the preposition *přes*) or determinate verbs of motion with the preposition *přes* for <+span> contexts and determinate verbs of motion with the <±span> prepositions *nad, po, podél*, etc. for <-span> contexts:

(37) Motýlek **letí** vlastně **po** cestě, **pře-létává přes** most, kde pod mostem teče říčka, a pokračuje dál **podél** cesty
*A little butterfly **is flying along** a road, **flies across** a bridge, where a stream **is flowing under** the bridge, and **continues further along** the road*

Czech *pro-* does not occur at all in these contexts unless a clear containment relation holds (e.g. a bird flies through an arch, or air is named as the explicit medium (LM) in the instrumental case). Interestingly, however, the prefix *pře-* can occasionally occur in <-span> contexts:

(38) a. Kůň **pře-běh kolem potoka**, skače přes ohradu, a běží pryč
*A horse **ran by along a stream**, jumps over a fence and runs away*

b. **Po silnici pře-jelo** auto a zastavilo u baráku
*A car **drove by along the road** and stopped by a house*

The possibility of using Czech *pře-* in <-span> contexts will be further discussed in the section on deixis, where it will be argued that the explicit landmark in this case is not the primary landmark for the prefix.

The <+span> feature associated with *nepe-/pře-* was given as the primary difference between the prefixes *nepe-/pře-* and *npo-/pro-* in the previous section. Given the fact that Russian *npo-* is often used in situations which clearly indicate spanning of an overt landmark, however, the nature of the difference between *nepe-* and *npo-* becomes rather nebulous. This same situation does not obtain in Czech. In Czech the ambiguity between these two prefixes arises because *pře-* is not restricted to <+contact> situations. An examination of the percentage of situations described by each prefix involving spanning of an overt landmark and those which do not involve spanning is instructive here. The following chart summarizes this data for each prefix in both Czech and Russian:

Table 4.4. A comparison of Russian and Czech *npo-/pro-* and *nepe-/pře-* usage in <+span> and <-span> contexts

		Russ *npo-*	Russ *nepe-*	Cz *pro-*	Cz *pře-*
Proximity	<+span>	39%	0%	30%	11%
	<-span>	2%	0%	1%	3%
Contact	<+span>	11%	98%	2%	71%
	<-span>	29%	0%	13%	5%
Contain	<+span>	17%	1%	31%	6%
	<-span>	3%	1%	23%	4%

The data in Table 4.4 indicates that *nepe-/pře-* is clearly <+span> in both languages and that *npo-/pro-* is <±span>. Nevertheless, Czech and Russian *npo-/pro-* greatly favors <+span> contexts with proximal overt landmarks. Russian *npo-* favors

<+span> for container landmarks as well. Only in contact contexts does *про-/pro-* compete with *пере-/pře-* sufficiently to render <-span> contexts more common. Even in situations involving contact, however, Russian *про-* infringes on the territory of *пере-* more than Czech *pro-* does for Czech *pře-*. Examples of prototypical <+direct, +contact, +span> situations occurring with *про-/pro-*, as in the following Russian example, although theoretically possible in Czech, are simply not found in the Czech data:

(39) a. Машина про-ехала через дорогу, навстречу девочке, которая выбежала из соседного дома
*A car **drove across the road**, to meet a girl, who was running out of the house next-door*

b. ?Auto **pro-jelo přes ulici**†
*A car **drove across the road***

This finding gives additional support to the notion that the appropriate landmark for Russian *про-*, in particular, is often the trajectory rather than the overt landmark. The spanning of the overt landmark which occurs with *про-* is a consequence of the traversal of a trajectory which is defined by the overt landmark. While this is generally true for Czech as well, this usage is somewhat secondary. Czech *pro-* acts primarily to construe the LM as a functional passageway for motion. Examples like (39), in particular, are extremely rare in Czech; since roads are designed for passage in the long dimension, a road traversed in the short dimension is not acting as a functional passageway.

As noted above, movement along, on, or through objects which are extensive in space and usually not spanned (e.g. a river or road in the long dimension) is typically treated as an inertial situation and is most often described with determinate verbs of motion. Smaller objects, perceived as deviations in the canonical terrain, tend to provoke the use of the prefix *про-/pro-*. These objects are then spanned simultaneously with the traversal of the trajectory. That contact situations with *про-/pro-* are more likely to be <-span> in both languages is due, perhaps, partly to the existence of a specific <+contact, +span> prefix (*пере-/pře-*), but primarily to the fact that surfaces on which motion occurs are much less likely to be viewed as inherently spatially delimited (i.e. roads, fields, the surface of a planet, etc. may extend for very long distances). In contrast, proximal features of interest in the terrain (e.g. a tree, a building) or containers for motion (e.g. a tunnel) are rarely continuous over long distances. (In fact, approximately 30% of <-span, +contact> situations with the prefix *про-/pro-* in both Russian and Czech include an additional prepositional phrase indicating a spanned landmark.) The fact that Czech *pro-* is equally frequent in <+span> or <-span> situations for container landmarks is a result of the closer connection between this prefix and the overt landmark. In particular, the use of the instrumental case with the prefix *pro-* in Czech ties the interpretation of the trajectory, and thus *space itself*, to a concrete spatial entity -- a medium or passageway for motion:

(40) Had vlezl do potoka a **pro-plul jim**-INSTR až k díře
*A snake slithered into the stream and **swam through it** all the way to its hole*

Although this concrete entity is not necessarily spanned in its entirety in such instances, the landmark still defines the full extent of some trajectory as the means of transition from some (arbitrary) source point to some (arbitrary) goal point. In other words, the stream in example (40) is not spanned, but the trajector reached its immediate destination by means of the river, and at the endpoint of motion the river is no longer relevant in defining a trajectory. The reason this does not occur in Russian is simply because there is no specific Containment preposition. Instead, containment contexts are divided among Proximity and Contact prepositions, primarily *через, по, под* and *над*. *Через* is compatible with containment contexts, but always indicates a <+span> situation, thus Russian *про-* can only express <-span> containment directly by using clearly locational containment prepositional phrases, such as *в* 'in' with the locative case, or indirectly by using prepositions such as *по*, which do not imply spanning, but also do not specifically indicate a containment relation:

(41) a. Змея про-плыла в воде под мостом
*A snake **swam along in the water** under a bridge*

b. Рыба про-плыла по реке
*A fish **swam along the river***

The absence of a Path Containment preposition in Russian is now quite easily explained by the presence and high frequency of the Path Containment prefix *про-*. By choosing either a <+span> or <±span> preposition to accompany the prefix, Russian speakers easily express the same basic spatial content as Czech speakers, arguably providing even greater structural detail. It now seems more pertinent to ask why Czech maintains both a Path Containment prefix and a Path Containment case form, given the apparent redundancy of the two. This question will be considered further in Section 4.5, below.

The fact that *про-/pro-* is, on the one hand, clearly <±span>, and yet heavily favors <+span> contexts with overt landmarks, provides further evidence that the extent of the (arbitrarily defined) trajectory itself is the appropriate landmark for *про-/pro-*. Assuming that this is so, *про-/pro-* is, in fact, by definition <+span> with respect to this trajectory LM.

4.3.3.2 Abstract use of the prefix *про-/pro-*

It has been noted that all prefixes define a path of arbitrary length in actual space and a source-path-goal schema (trajectory) of arbitrary length in abstraction. In actual space (e.g. with verbs of motion) then, the landmark for *про-/pro-* may be taken as space itself, the most basic medium of motion. This path in space, as we have seen, is often defined by a salient feature of the terrain, which is expressed as the complement of the prefixed verb (in the accusative or instrumental case) or of a preposition. This is the same sort of situation as was encountered with the prefix *до-/do-*, where the prefix designated contact with an abstract limit defined by an explicit landmark. Similarly,

при-/(při-) and *у-/(od-)* indicate entry into or departure from an abstract domain defined by the concrete, linguistically explicit landmark. Here, once again, the concept of domain is useful to the description of prototype semantics for prefixes. In this case, the domain of the linguistically explicit landmark is coextensive with the trajectory. The landmark itself thus triggers, or defines, the trajectory. In actual space this trajectory is a chunk of space near the explicit landmark itself. For container landmarks, the landmark and the space it defines are often essentially identical. For a proximal or surface landmark the space it defines simply surrounds the landmark and the proximity or contact relation to trajector is either obvious or indicated by a preposition.

The fact that the appropriate landmark for *про-/pro-* comes to designate the entire trajectory defined by the prefix may now be explained as follows. The prefix itself defines a trajectory, whereas the overt (constructional) landmark defines a domain in space around itself. The presence of the overt landmark as an unusual or notable feature of the terrain provokes the use of a prefix in order to focus on local trajectory -- the trajectory which penetrates the domain of the landmark. *This domain then acts precisely as a passageway or medium of motion, and this binds the prefix trajectory to the domain as its most basic referent.* The spatial schema for the prefix *про-/pro-* may now be revised to indicate that the landmark referent for the prefix itself is actually the domain of the explicit landmark. In spatial uses the domain is typically space itself and is thus identified with the entire path indicated by the prefix *про-/pro-*.

The <+domain> feature posited here for *про-/pro-* can also be identified in the preposition *про/pro* in Russian and Czech. This preposition (often translated in Czech as *for* and in Russian as *about, for*) does not have a simple spatial use in either language, which also suggests an inherent abstract component. For instance, in the following examples the explicit landmark (complement of the preposition) acts as the central element or focus of a domain: *purpose* in the first Czech sentence, *favor* or *benefit* in the second Czech sentence, and *topic of speech/conversation* in the Russian example.

(42) a. David šel **pro pivo**. Udělal to **pro tebe**.†
David went for (the purpose of obtaining) ***beer***. *He did this for* (the benefit of) ***you***.

b. Мы говорили про вас†
*We were talking **about you*** (the focus of an abstract entity, a conversation)

Thus we see that domain has the usual flexibility of reference that was demonstrated in the previous chapter. For indeterminate verbs of motion, where motion is viewed as an activity which does not change over time, the prefix trajectory refers to time itself. Rather than defining a chunk of space, *про-/pro-* with indeterminate verbs of motion defines a chunk of time. Since *про-/pro-* indicates a traversal of the *entire* domain defined by the landmark, and thus complete penetration of the domain, the prefix tends to construe the temporal span as a long period of time (relative to what might reasonably be expected):

(43) Дети про-бегали два часа в парке[†]
*The children **ran around** in the park **for two hours***

Just as the distance spanned in space itself could be used as the explicit landmark complement with verbs of motion, the time spent engaged in the verbal activity is given as the explicit landmark complement in example (43) above (*два часа* 'two hours'). Temporal reference for the prefix *про-/pro-* is common with state and activity verbs more generally, and in these instances *про-/pro-* also often indicates that the state or activity continued for a long period of time (in relative terms):

(44) Studenti **pro-tancovali celou noc**[†]
*The students **danced the whole night through***

4.3.3.3 Inferences generated by the prefix *про-/pro-*

In Section 4.3.1.1 we saw that opposing inferences may be generated by a single spatial schema through different perspectives concerning trajector intention. In Section 4.3.2.1 it was suggested that LMs of different structural types may have consequences concerning the kinds of inferences that can be generated, and thus regarding the kinds of submeanings appropriate for that prefix. It was also noted that Russian and Czech showed preferences for different versions of the spanning relation in space. A similar kind of operation was described with respect to the instrumental case in Czech in Chapter 2. Although focus always remains on the landmark, relevant structural and functional properties of a given LM may generate different inferences.

As with the Czech instrumental case, there are two common construals of the LM in space for the prefix *про-/pro-*: narrow, container-like landmarks which are designed to promote ease of passage (arches, tunnels, etc.) were referred to as passageways, whereas extensive substances which are not specifically designed or intended for ease of motion (water, air, etc.) were referred to as media. Although these two versions of motion through a container are related to the size and shape of the landmark and the presence or absence of contact between TR and LM, they result primarily from a difference in perspective concerning the role of the landmark. The passageway version focuses on the landmark as a functional means of getting somewhere and often implies that the landmark promotes ease of motion. The medium version focuses on the landmark as a structural means of getting somewhere, through a substance which must be penetrated, and often generates the inference that the landmark must be overcome with a certain amount of effort. Both versions can generate inferences concerning the thoroughness of an action (e.g. *про-думать* 'to think through') since this notion arises primarily from the <+contain> feature itself; penetration into the depths of a container implies a deep involvement with it. In addition, submeanings such as *thoroughness* and *duration* (*про-ждать несколько часов* 'to wait several hours') are motivated by the fact that *про-/pro-* is <+span> with respect to the domain of the LM (see Section 4.3.3.1 above).

Neither the Czech instrumental case nor the prefix *про-/pro-* distinguishes between direct and contour contexts. Thus we saw in Chapter 2 that the instrumental

case (and also now *про-/pro-*) may be <±contour>. In fact, the passageway version may be considered <+contour>, since the trajector closely follows the contour of the landmark designed for ease of motion. Furthermore, in this version the concrete landmark is generally equivalent to the abstract domain:

(45) Auto **pro**-jelo **tunel**em-INSTR
*The car drove **through the tunnel***
(tunnel = explicit LM *and* spanned domain; contours of the tunnel are relevant)

The medium version, in contrast, may be considered <-contour>, since the medium itself is spatially extensive and the trajector merely penetrates it without being guided by its contours. In this version with verbs of motion the concrete landmark is the trigger for the domain, but is not equivalent to the spanned domain itself:

(46) Вода, в воде плывет рыба, про-плывает мимо водорослей и уплывает
*Water, a fish is swimming in the water, swims **through** past seaweed and swims away* (seaweed = explicit LM; water/space around seaweed = spanned domain; contours of the water/space are not relevant)

This version may act as the basis for submeanings such as *bypass, miss, inadequacy.* In spanning the domain of the explicit landmark, the explicit landmark itself is overlooked or passed. Furthermore, the contours of the extensive domain have not been thoroughly explored (*про-смотреть* 'to overlook, miss'). These two versions of containment thus generate both coincident and contradictory inferences.

In Section 4.3.2.1 we noted that Russian *пере-* and Czech *pře-* had different degrees of affinity for two versions of contact spanning: boundary and extent. Similarly, although capable of expressing both relations, Russian *про-* and Czech *pro-* have significantly different affinities for the versions of containment spanning. Czech *pro-* (like the instrumental case in Czech) strongly favors the passageway version, where the explicit landmark is equivalent to the domain. (This is what is meant by saying that Czech *pro-* is more closely linked to concrete, explicit landmarks.) Russian *про-* strongly favors the medium version, where the explicit landmark is merely the trigger for the spanned domain. This difference in focus on the opposing versions of containment spanning partially accounts for the preference for proximity and contact expressions with this prefix in Russian and containment expressions with this prefix in Czech. (The absence of an exclusive Containment preposition/case in Russian is also a factor.) It can also explain some differences in the extended uses of this prefix. Russian *про-* combines with motion verbs, as well as other verbs, to mean *to miss or overshoot one's destination*, i.e. pass through the domain of the explicit landmark without actually encountering that landmark:

(47) а. про-ехать остановку
to miss (ride past) one's stop (on the bus)

b. про-смотреть ошибку
to miss (overlook) an error

Since this is incompatible with the passageway version of containment, which implies thorough acquaintance with the explicit landmark, Czech often uses the prefix *pře-* for this same function:

(48) a. **pře**-jet stanici
to miss one's stop

b. **pře**-hlédnout chybu
to miss (overlook) an error

Thus Czech *pro-* seems to focus on containers as functional passageways for motion, whereas Russian *про-* seems to treat containment as a structural medium of motion.

4.4 Path prefixes and deixis: evidence for deictic spanning

In the previous chapter we saw that in the given task Source and Goal prefixes often served a deictic function. It should not surprise us to find that Path prefixes may also have a deictic function -- one of spanning a speaker/observer -- and that this is related to a more general use of the prefix to indicate spanning of a theoretical conceptualizer. Furthermore, the Source and Goal prefixes which referred to the domain of a landmark (or conceptualizer) were most likely to be used deictically, since the domain lends itself readily to interpretation as visual field or general accessibility to the observer (implicit landmark). Finally, passage through space in general, even if formally provoked by some other explicit LM, is fully compatible with traversing an observer as well. In the case of Path prefixes, then, *про-/pro-* would seem the most likely candidate for deictic usage. This suggestion is supported by the data, since this prefix often occurs without an explicit landmark or with a source or goal landmark (which clearly is not the spanned object):

(49) Космический корабль приблизился к планете, приземлился, из него вышел человечек, он про-шел к сопке, влез на нее...
A space ship approached a planet, landed, a little man came out of it, he walked over to a volcano, climbed on it...

It is difficult to prove a deictic usage, since *про-/pro-* may be simultaneously motivated by space itself and the observer in these instances. Examples where the observer, the screen, or the speaker's visual field is mentioned explicitly, however, suggest that this multiple motivation is quite likely:

(50) a. Кто-то про-шел сквозь весь экран и даже не посмотрел в нашу сторону
Someone walked through the whole screen and didn't even look in our direction

b. Змея переползла на нашу картинку, про-ползла ее всю и исчезла
A snake crawled onto our screen, crawled across the whole of it and disappeared

c. Zvířátko slézá ze stromu a **pro-bíhá kolem nás** a odbíhá pryč
*A little creature climbs down from a tree and **runs past us** and runs away*

A significant difference between Russian and Czech becomes clear precisely when such examples are examined more closely. In Russian, whenever there is mention of the screen or the viewers, the motion verb is invariably prefixed with *про-*. In Czech, when the viewers are named explicitly (as in example (50) above), the motion verb typically occurs with the prefix *pro-*, but if the screen or viewer's visual field is mentioned, the motion verb occurs only with the prefix *pře-*:

(51) Chlapec rychlým krokem **pře-šel obraz** a vešel dovnitř do domu
*A boy **walked across the picture** at a rapid pace and entered a house*

This suggests that in Czech the function of deictic spanning is at least partially taken up by the prefix *pře-*. More specifically, where a proximal relationship to a viewer is indicated, Czech prefers the prefix *pro-* (although *pře-* is possible), but when a spanning relationship with the screen or visual field of the speaker is indicated, the prefix *pře-* is preferred. In the former case the viewer does a poor job of defining sides, whereas in the latter a screen or visual field easily lends itself to division into sides, consistent with the extent version of spanning. Russian *пере-* never occurs in any of these cases.

Whereas Russian *про-* is quite common without a prepositional phrase or with Source and Goal prepositional phrases (20%), Czech *pro-* was slightly less common in contexts without an explicit LM (14%), and 50% of these examples in Czech occur with the reflexive particle *se*:

(52) Takže z planety vesmírem letěl nějaký človíček nějakým letajícím talíří, přistál na měsíci, vystoupil, **pro-cházel se**, vlez do nějakého kráteru, pak z něj zase vylez, ještě se chvilku **pro-cházel**, zase nastoupil a odletěl zpátky domů
*So some little guy flew through the cosmos from a planet in some sort of flying saucer, landed on a moon, got out, **had a walk**, climbed into some kind of crater, then climbed out of it again, continued **to walk around** for a little while, got back in and flew away back home*

This conveys the more specific sense *to take a walk*, and focuses on penetration of some chunk of space defined according to the intentions of the trajector (hence the reflexive particle) rather than on a domain defined by some landmark (including an observer) within that space. In addition, 16% of verb tokens with *pře-* also occur without a prepositional phrase, or with Source and Goal prepositions. And, as we have seen in Table 4.2, Czech *pře-* may occur with a wide range of other prepositions which do not refer to a spanned LM. Including these examples, fully 25% of tokens with Czech *pře-* occur without an explicit spanned LM. Russian *пере-*, in contrast, does not occur without prepositional phrases (or an LM in the accusative case). Although *пере-*

occasionally occurs with Source or Goal prepositions, all of these were clear cases of boundary crossings, as in example (10), above. This is not the case with Czech *pře-*, where Source and Goal prepositional expressions rarely indicated a clear boundary crossing:

(53) Malý chlapec pře-chází pomalým krokem, **pře-šel k malýmu koberci** a zůstává na něm stát
*A small boy is walking by at a slow pace, **walked over to a small rug** and remains standing on it*

Finally, whereas Russian *про-* (15% of all prefixed verb tokens) is considerably more common than Russian *пере-* (5%) in overall frequency, Czech *pro-* (12%) and *pře-* (10%) are quite comparable in frequency, and Czech *pře-* is considerably more common than Russian *пере-*. The deictic usage may largely account for the higher frequency of Czech *pře-* overall, and all of the foregoing facts taken together demonstrate that the function of deictic spanning is reserved for the prefix *про-* in Russian, whereas it is divided between the prefixes *pře-* and *pro-* in Czech, with a preference for the former when spanning refers to the visual field or screen and the latter when the landmark is identified with the observer.

Given the evidence presented here that Russian *пере-* is exclusively <+contact>, it is not particularly surprising that this prefix is unsuitable for the proximal spanning of an observer. Czech *pře-*, as we have seen, is compatible with proximity and containment contexts in addition to contact; thus, it is also potentially quite suitable for deictic uses. In contrast, given the closer connection between Czech *pro-* and explicit container LMs expressed in the instrumental case, Czech *pro-* is less suitable for deixis, since the observer or observer's visual field cannot serve as a functional passageway or medium of motion. Although a visual field may be conceptualized as a container, it is difficult to construe it as the explicit means of getting somewhere. Czech *pro-* is thus comparatively restricted in meaning relative to Russian *про-*. It can, nevertheless, still refer more abstractly to the trajectory, or space itself, thus deictic spanning is not ruled out. Deictic spanning is, however, perhaps secondary for this prefix, and *pro-* is statistically less common in expressions of deictic spanning than either Russian *про-* or Czech *pře-*.

What is less obvious is why Russian *пере-* should be incompatible with the spanning of the viewer's visual field, or the screen, which may be readily construed as a surface with sides. One possibility suggested by the data is simply that Russian *пере-* strongly favors the boundary crossing interpretation of spanning. This version de-emphasizes the landmark (typically a long, narrow object), which is serving primarily as a boundary, and focuses on contact with surfaces on either side of it. The visual field or screen has extent in space and is not a good example of a boundary separating two off-screen spaces. Czech, however, readily extends *pře-* to indicate traversal from one side to another of an extensive landmark object without any clear boundary separating the sides, and without any mention of the terrain existing on either side of this landmark. In other words, Czech *pře-* is much more compatible with a landmark-focused version of spanning. In fact, the sides of an extensive spanned landmark are frequently named

explicitly as the landmark of a source or goal expression with Czech *pře-*, something which also does not occur in Russian:

(54) Malý chlapec **pře**-šel z jedné **strany obrazu**, **pře**-chází pomalým krokem
A small boy is walking across from one side of the picture, is crossing at a slow pace

The use of Czech *pře-* to indicate deictic spanning can now be used to explain why a <+span> prefix can be used in conjunction with <±span> prepositions in contexts which are clearly <-span>, as in the following example, which makes explicit reference to vision as well:

(55) Vidíme řeku, vidíme terénní auto, **jak pře-jíždí podél řeky**, a vodjíždí zase podél řeky
We see a river, we see a jeep, how it drives by along a river, and drives away along the river

The prefix itself is making reference to an implicit landmark -- the screen, or visual accessibility to the observer -- and this is fully compatible with movement backgrounded by an unspanned entity.

4.4.1 Czech *pře-* and the <domain> feature

Given that *pře-* is frequently used in this manner to designate a trajectory which spans an extensive object, often the entirety of an observer's visual field or perceptually accessible space, it might be expected that Czech *pře-* may also acquire the sense of spanning the entirety of some domain triggered by an LM, which is given here as a primary meaning for *про-/pro-*. One way of verifying this is to see whether *pře-* may combine with multiple prepositional phrases indicating serially spanned landmarks. Indeed this is quite possible with Czech *pře-*, where 9% of tokens in the database occur with multiple prepositional phrases, many of which indicate serial spanning of explicit landmarks:

(56) Tak ten had **pře**-lez po louce, přes cestu, kolem kopečka a kolem řeky pryč
So the snake slithered by along a field, across a path, past a little hill, past a river and away

In contrast, multiple prepositional phrases occur in only a few examples with Russian *пере-*, and these indicate only simultaneously spanned landmarks, thus it may be assumed that Russian *пере-* does *not* suggest a spanning of the entire domain of an LM, but rather only a spanning of the explicit landmark itself. The following example is typical of narration by Russian speakers, where each prefix is motivated by only a single explicit landmark:

(57) Так, мальчик вы-носит ящик, про-носит его через ворота забора, пере-ходит через дорогу, под-иосит его к машине...
So, a boy carries a box out (of a house), carries it through the gates of the fence, walks across a road, carries it up to a car...

In general, Czech prefixed verbs of motion are more likely to occur with multiple prepositional phrases than are Russian prefixed verbs of motion, with one exception: the prefix *pro-*. This suggests that Czech prefixes tend to be less restricted in meaning than Russian prefixes overall and may refer to a larger, more varied extent of space than Russian prefixes. The exception is *pro-*, which is equivalent to, or possibly more restricted than, its Russian counterpart in this regard. This is consistent with the observation that Czech *pro-* is more closely connected to explicit, concrete landmarks than Russian *про-*.

If Czech *pře-* can also designate the spanning of the LM domain, we must find some way to distinguish it from *pro-*. The primary difference should be fairly clear from the foregoing discussion: Czech *pře-* emphasizes side to side traversal of an extent of space, highlighting the <+span> feature which is integral to its prototype. Czech *pro-* profiles the fact that the trajectory is the means of spanning some extent of space. The fact that these two uses overlap completely in many contexts merely shows that a given situation may be described from a variety of perspectives. The prefix, as well as the prepositional phrases, chosen to describe a situation will determine what aspects of the situation are in focus. This is nicely demonstrated with an example consisting of two trials by a single speaker viewing a single film:

(58) a. trial 1: Kluk **pře-chází pokojem**-INSTR
*A boy is **walking across via a room***

b. trial 2: Kluk **pro-šel přes pokoj**
*A boy **walked through across a room***

Since Czech *pře-* may treat the trajectory itself as a landmark, this prefix also must be considered, at times, <+domain>. The primary distinction between *pro-* and *pře-* in this regard is in the typical instantiations for domain; whereas the domain for *pro-* is generally the functional means of motion or space itself, the domain associated with *pře-* is typically accessibility to the conceptualizer.

4.4.2 Deixis as a motivator for prefix extension

Given that the Russian prefix *пере-* and Czech preposition *přes*, both cognate to the Czech prefix *pře-*, are consistently <+contact>, as well as <+span>, I would like to suggest that the deictic usage in fact served as the primary motivator for the extension of Czech *pře-* to non-contact scenarios. The close connection between the Czech prefix *pro-* and the instrumental case, as described above, binds *pro-* to the explicit, concrete landmark as the means of motion. This, in turn, prevents *pro-* from easy appropriation for deictic usage, provoking Czech speakers to choose a different Path prefix to indicate deixis. At first glance, *o(b)-* seems like the most obvious choice (and one wonders why

Russian does not prefer *o(б)-* for this function as well), since it could easily indicate a proximal spanning of an observer. Although deictic usage with *o(б)-/o(b)-* is in fact possible, it is uncommon in both languages, as evidenced both by the extremely low frequency of *o(б)-/ob-* in general, as well as the almost universal presence of an explicitly spanned LM with this prefix.

One possible explanation is that *o(б)-/o(b)-* also designates encirclement, is frequently <+contour>, and thus often generates the inference that the LM is specifically being avoided or intimately explored. These aspects of *o(б)-/o(b)-* are incompatible with ordinary deictic spanning. Another reason for not using *o(б)-/o(b)-* in deictic contexts is that the penetration of space provides a better background for observer spanning, such that something like the visual field, accessibility to the observer, or some other abstract domain defined by the observer is not fully detachable from the observer landmark but also contributes to the prefix choice in deictic uses. (The preference for Russian *при-/у-* rather than *под-/от-* for deictic uses similarly supports this notion.) In other words, the deictic usage implies some kind of contact with, or penetration of, a domain simultaneous with observer spanning rather than mere proximity to an observer.

This notion that an observer typically implies some domain of accessibility makes the situation as regards deixis in Czech somewhat more transparent. As noted previously, the interpretation of the landmark as means of motion makes Czech *pro-* less suitable for indicating simply passage through space or observer domain, and thus less suitable for deictic spanning. Czech *pře-*, on the other hand, would seem to be compatible with the traversal of *domain-as-landmark* interpretation. Nevertheless, a domain implies some concrete trigger for that domain. Thus, once *pře-* comes to denote contact with, or penetration of, an observer's domain, it is also compatible with proximal spanning of an observer. This may be one motivating factor for the extension of Czech *pře-* to proximal spanning contexts, which was observed in Section 4.3.2 above.

Furthermore, we have seen that Czech *pře-* is commonly used to indicate traversal from one side to another of an extensive landmark object without a distinct boundary separating the sides. It is possible that the deictic usage of *pře-* is the source of this extension as well. Once *pře-* is used to indicate spanning of the undifferentiated terrain in front of an observer, it is a small step to indicate spanning any undifferentiated landmark from one arbitrarily defined side to the other, including space itself (the trajectory). Just as we have seen for *про-/pro-*, spanning of the entire trajectory (LM) is fully compatible with the simultaneous proximal spanning of other landmarks. Notably, Russian *пере-* is not used for deictic spanning, does not indicate a spanning of a trajectory, and also does not extend to non-contact situations. Thus, it is possible that the deictic usage of Czech *pře-* actually served as the motivator for the extension of *pře-* to non-contact uses.

4.5 Summary of spatial prototypes for Path prefixes

The preceding discussion has demonstrated that in both Russian and Czech *o(б)-/o(b)-* is primarily a Proximity prefix, *пере-/pře-* a Contact prefix, and *про-/pro-* a

Containment prefix in origin. Certain factors have obscured this basic categorization, however. The fact that container paths are relatively rare in experience has perhaps motivated a double-sided interpretation for the container LM as either a structural means of getting somewhere or a functional means of getting somewhere. These two interpretations are not necessarily at odds, since space fits both definitions; space, however, is perhaps more readily viewed as a structural aspect of motion than a functional one. Czech seems to have favored the functional interpretation for container paths, thus linking it tightly to concrete landmarks as passageways or media of motion in preference to the more abstract notion of *space itself*. Russian seems to have favored the structural interpretation of path containment, such that space itself is the most appropriate landmark. In this sense Russian *про-* is more abstract in character than Czech *pro-*, designating a path which penetrates space and is simultaneously in some relation to a concrete, linguistically explicit landmark. Nevertheless, both Czech *pro-* and Russian *про-* may involve either the structural or functional interpretations, thus there is a great deal of overlap in the way they are used.

An answer to the question raised in Section 4.3.3.1 concerning why Czech should maintain both a Path Containment prefix and a Path Containment preposition may now be attempted. Czech *pro-* might be viewed as inherently neutral with regard to the structural and functional interpretations of path containment, but the fact that Czech *pro-* combines mostly with the instrumental case, which imposes the functional passageway interpretation on landmarks, rather than the accusative case, as in Russian, sways the balance heavily in favor of the functional passageway interpretation. (This, in turn, as we have seen, may have caused shifts in the manner of expression of deixis and in the semantic range of the prefix *pře-*.) Nevertheless, Czech *pro-* can combine with other prepositions to express the structural medium version of path containment as well. Therefore, the presence of a Path Containment Prefix and a Path Containment preposition in Czech is not fully redundant.

While both Russian and Czech *про-/pro-* may be considered <+domain>, Russian *про-* is much more likely than Czech *pro-* to refer to an abstract domain defined by an explicit landmark than simply to equate an explicit landmark to the domain itself. In either case, however, the domain is always fully spanned (even in instances when the explicitly named landmark is not), simply because the domain is the entirety of the arbitrary trajectory defined by *про-/pro-* in the first place. Thus, *про-/pro-* must be considered <+span> in relation to this domain, if not in relation to actual physical landmarks. The fact that the domain is generally triggered by an explicit, concrete landmark in the terrain which may have any kind of relation (proximity, contact, or containment) to the trajector is what obscures the basic containment status of the prefix *про-/pro-*.

Russian and Czech *через-/přes-* are both much more readily assessed as <+contact>. The fact that the contact status of Czech *přes-* is partially obscured has also been linked to the functional interpretation of *pro-*, since this makes *pro-* less appropriate for deixis and motivates the extension of *přes-* to contexts of deictic spanning. This then confers on the Czech prefix *přes-* the capacity for the kind of structural spanning of a domain (space) which is typical of *про-/pro-*. In turn, Czech *přes-* becomes more acceptable for proximity and containment spanning, especially if

some kind of accessibility to the conceptualizer is implied. Furthermore, both Czech and Russian *пере-/pře-* retain their status as the preferred prefix for focus on movement in a direct line from one side of a boundary LM to the other, since the contact designation profiles the terrain on either side of the spanned landmark as well. Thus, although all the Path prefixes are usually <+span>, the notion of sides, in particular, is highlighted for *пере-/pře-*. The focus on direct side-to-side spanning over other features, and therefore the complete redundancy with the preposition *přes* in terms of the <+contact> and <+span> features, is another factor which has allowed the extension of Czech *pře-* to non-contact spanning situations.

As noted in the previous chapter, in abstract uses the features <proximity>, <contact>, and <contain> become obsolete, leaving inferences from these to distinguish among prefixes. Even in the spatial realm it is quite clear that there is considerable overlap among the Path prefixes, and in particular *пере-/pře-* and *про-/pro-*. For this reason it should be expected that there will be considerable overlap in the inferences they generate, and thus even more overlap in non-spatial uses of these prefixes. In some cases the choice of a given Path prefix, *о(б)-/o(b)-*, *пере-/pře-* or *про-/pro-*, as an appropriate prefix for a particular base verb may be quite arbitrary.

4.6 Path prefixes or Spanning prefixes?

The term *span* was borrowed from Flier (1975), who uses it as a classificatory feature for the Russian prefixes *про-*, *пере-*, *по-*, and *о(б)-*, which are referred to here (with the exception of *по-*) as Path prefixes. The term *Path prefix* is meant to be slightly more general than *Spanning prefix*, since the former simply indicates that the trajector and landmark come into closest relation during the course of the trajectory, but does not indicate whether that relationship extends fully from one side of the landmark to the other or not, i.e. whether or not the trajector spans the landmark. The foregoing analysis indicates that in spatial uses these prefixes do not necessarily indicate spanning of the explicitly named landmark. In abstract uses, however, the Path prefixes (and *по-*, as we will see) do often indicate spanning of the "abstract landmark"[5]. Since Flier examines all potential uses of prefixes, not simply spatial ones, the appropriate LM reference is to the "abstract LM" (i.e. Flier's prefix frame) and the designation <+span> for these four prefixes is appropriate and completely compatible with the analysis given here.

Flier uses the term *domain* for what I have typically called *landmark*. I have also used the term *domain*, however, when the landmark for a prefix is not the explicit complement of the prefixed verb (or a preposition), but is triggered by the explicit complement. Thus the domain is best described as a sphere of influence surrounding the concrete, explicitly named entity. In these cases Flier's term *domain* may be considered equivalent to the term as it is used here. *Periphery* simply indicates space outside of the domain. For Flier, the designation <+domain> (*про-*, *по-*) indicates that progression of the verbal activity occurs within the domain, whereas <-domain> (*пере-*, *о(б)-*) indicates that the progression of verbal activity occurs in the periphery. The analysis of

[5] The term landmark is not, in fact, suitable for most abstract prefixes, since there is no concrete entity which functions in the same capacity as a spatial landmark. Instead, abstract prefixes typically comment on the action named by the base verb. This will be further discussed in Chapter 6.

motion verbs given here indicates that in space *про-* is indeed clearly <+domain> (contained within the landmark/domain) and *о(б)-* is clearly <-domain> (<-contact, -containment> with landmark/domain). The status of the Contact prefixes *пере-* and *по-* is much less clear, however. Contact may be perceived as external to a landmark/domain, but it is also often compatible with containment. This suggests that *пере-* is best considered <±domain> in Flier's terminology. Furthermore, as we have seen, the boundary version of spanning may make little or no reference to domain/landmark, but the extent version is quite intimately involved with the domain/landmark. Thus, examples involving the submeaning *transfer*, or *superiority*, for instance, might be considered <-domain>, whereas those involving *duration, division, serial envelopment* (Flier's terms) would be considered <+domain>. It will be argued shortly, however, that outside of space designations such as <±domain> have no relevance.

Flier's term *lateral* indicates involvement with lateral limits of a domain/landmark, in addition to the inceptive and terminal limits which define the dimension of spanning. *Lateral* comes closest in meaning to what is termed here *contour*. In his analysis Flier suggests that the prefixes *по-* and *о(б)-* make reference to the lateral limits, whereas *пере-* and *про-* do not. There is general agreement in this study with this assessment in actual space for *о(б)-* (most often <+contour> in Russian, therefore concerned with the lateral contours of the landmark) and *пере-* (typically moving in a direct line across the LM and not concerned with its lateral contours, although there may be extensive contour in the vertical dimension: *пере-лез через гору* 'climbed over a mountain'). The designations for *по-* and *про-* are problematic in purely spatial contexts. While contour is relevant for both of them, the degree of relevance of lateral limits is highly dependent on the actual instantiation of the landmark. Given a landmark extensive in space primarily in a single direction (e.g. a road, river), landmark contour, and hence lateral limits, are quite relevant to the way in which the trajectory proceeds. Given a landmark extensive in two or more dimensions (a field, a large body of water, space itself), landmark contour/lateral limits are quite irrelevant for both prefixes.

Flier did not mean for these features to apply only to actual space. Designations such as <±domain> and <±lateral> are not relevant, however, in abstract prefixation. In the terminology of this study, the proximity, contact, containment, and direct, contour, encirclement distinctions are obsolete for abstract prefixes, merely leaving their traces in the inferences and associations they generate. Even in spatial examples we have seen that the <±domain> or <±lateral> designation has as much to do with the landmark entity itself as it does the prefix, but at least the relation is generally clear: in the expression *пере-резать хлеб* 'to cut the bread in two' the domain/landmark itself is quite intimately penetrated by the trajector (<+domain>), but lateral limits are only relevant in the vertical dimension. In non-spatial uses it is simply not possible to assert that a relation is <±domain> or <±lateral>. Consider the following example:

(59) *Я* пере-думала†
I changed my mind

Is it possible or realistic to suggest that the prefix in this expression somehow clearly involves the parameters <-domain> and <-lateral>, as Flier suggests? One interpretation of the prefix usage in this expression is that the activity of thinking (and thus coming to a conclusion) is conceptually "nominalized" and becomes the landmark, which is then "spanned", generating the meaning *to re-think, think again.* In this case the trajectory would seem intimately involved with the landmark and might suggest a <+domain> interpretation. Furthermore, (rational) thought is generally conceptualized as linear, thus retracing a linear trajectory of thought could also be <+lateral>. This interpretation involves the extent version of spanning and treats the thinking process as the landmark. A second interpretation, however, might involve the boundary version of spanning, such that the process of thinking is de-emphasized relative to the "terrain on the other side" -- namely, the conclusion. In fact, a primary sense of the verb *пере-думать* (given as the translation here) has more to do with the difference in result that arises from re-thinking a thing, and not the re-thinking itself. This would suggest that *пере-* is in fact <-domain>, although there seems no basis on which to decide whether it is <±lateral>.

It is likely that the use of *пере-*, here, is at least partially motivated by both models for spanning and that the spatial details are in fact irrelevant. Rather than asserting dubious or unverifiable statements (e.g. thinking is conceptualized as linear; re-thinking implies thoroughness and is therefore <+lateral>, etc.), it seems more realistic to consider which inferences that result from the concept of spanning are appropriate and operative. In this case we see that <+span> can only have a temporal interpretation of engaging in an action from start to finish. This results in inferences that the thinking was thorough, carried through twice, and brought the thinker to a new mental location (state) -- thus, she changed her mind in relation to a previous mental stance. Consider a second example:

(60) Я внимательно про-думал ваш план†
I carefully ***thought through*** *your plan*

The inference of thoroughness can be related to the passageway model of the containment relation, but there is little inherent in thinking through a plan itself that suggests a plan fits the passageway model better than, say, the structural medium model. Rather, *thoroughness* is an inference which has been attached to the prefix *про-* as a result of the spatial model, but not because thorough thinking itself is intrinsically like penetrating a container. Although penetration of a substance is a common metaphoric manner for talking about thinking, there is nothing which inherently ties thinking to container relations. In fact, it is equally compatible with morphemes and metaphors which designate spatial proximity or contact: *думать над чем-нибудь* 'to think something **over**'; *об-думать что-нибудь* 'to think over, consider something'; *по-думать о чем-нибудь* 'think **about** something'; etc. In Russian *пере-думать* may also mean 'do a lot of thinking'. In this case it can be seen that the inference of thoroughness is not the sole property of the prefix *про-*, being a potential inference resulting from the extent model of spanning for *пере-* also.

In abstract uses of prefixes, the reason for selecting an inference which results from one (spatial) model over another will not always be recoverable and may well be

arbitrary. The selection of an inference is limited, of course, by its relevance to the given context, but even if an inference associated with a given prefix is relevant, it will not necessarily occur with a particular base verb. Inferences and associations generated by different prefixes often coincide; the choice of a prefix to indicate a particular sense may be critically influenced by the use of other prefixes with that base verb. This kind of interaction is touched on again in Chapter 6. Rather than suggesting that abstract prefixes express metaphoric proximity, contact, containment, direct, contour, span, encirclement, or for that matter, the (spatial) features <domain> and <lateral> in non-spatial uses, it seems more fruitful to consider the inferences generated from the spatial prototypes as central to the prefix meanings. The original spatial features simply do not apply. Thus, we avoid suggesting that some abstract activity is viewed metaphorically as a proximity, contact, or containment relation. The inferences which make up the semantic network of a prefix and are relevant in a given context are generally fairly obvious to native speakers.

Flier, in fact, recognized the significance of such inferences when he stated that feature designations (such as <-lateral> and <+domanial> for *про-*) "may have evaluative connotations" (1975:223) which generate seemingly contradictory uses for a single prefix. The suggestion that features such as <±domain> and <±lateral> are invariant aspects of the prefix meaning, however, proves unviable. Such spatial designations can only be awkwardly forced onto non-spatial uses of the prefixes. Prefixes give an excellent demonstration of why the notion of prototype is so important; although the spatial features <proximity>, <contact>, and <contain> are obviously central to the spatial prototype of a prefix, a given submeaning (or contextual variant) of the prefix can select any feature or subset of features from the original prototype, or logical inference(s) which follow from them, as central and dispense with the unnecessary or non-applicable features. Thus, no single feature in the prototype is necessary to provoke the use of a given prefix, and there can be no invariant meaning. Rather, there is a cluster of variants.

Flier's general framework for examining Spanning prefixes is, overall, quite compatible with the spatial prototypes for the prefixes as given here, with only a few exceptions (e.g. *пере-* as <±domain> instead of <-domain>, *про-* as <±lateral> instead of <-lateral>). The distinctions used by Flier, however, do not give an equivalently fine-grained analysis as the features proposed here, nor do they explain the inferential extensions of the prefixes as fully. Furthermore, Flier's features were not meant to be restricted to actual space, although it is unlikely that they are viable as invariant features associated with a prefix frame in abstract uses. The claim made here is that in non-spatial uses there simply isn't a proximity, contact, containment, etc. relation (or <±domain>, <±lateral> relation) between an "abstract landmark" and trajector. While it remains possible that the prefix chosen to express a particular meaning may be partially motivated by common spatial metaphors concerning the topic at hand, they are more likely to be motivated by the inferences that are appropriate in the given situation. This topic will be discussed in more detail in Chapter 6.

Chapter 5. The prefix *по-/ро-*

5.1 Classification of the prefix *по-/ро-*

It was argued in the previous chapter that the prefix *по-/ро-* does not belong among the Path prefixes, despite the fact that it derives from a Path preposition (*по/ро*). One reason given for excluding *по-/ро-* is that, in contrast to other Path prefixes, landmarks for *по-/ро-* cannot be expressed as the complement of the prefixed verb itself, but only as the complement of an intervening preposition. Secondly, although Russian *по-* occurs with more Path prepositions than either Source or Goal prepositions (see Table 5.1, below), the overall profile of *по-* is considerably different from the other three Path prefixes. *По-* is quite common without any prepositional phrase at all (46%)[1] and occurs frequently with goal expressions (35%). Like the cognate preposition *по*, the prefix *по-* is used primarily in contexts involving contact between TR and LM. Nevertheless, the prefix *по-* is acceptable with proximity and containment expressions as well. In fact, the most striking aspect of the usage of Russian *по-* is its close resemblance to unprefixed determinate verbs of motion:

Table 5.1. Frequency of prepositional phrase types: a comparison of Russian *по-*, unprefixed determinate Motion Verbs, and Russian Path prefixes[2]

Path Prefixes	no PP	Source	Goal	Path	Prox	Contact	Contain
Russian *по-*	46%	6%	35%	67%	19%	75%	6%
Russ det. VM	43%	1%	20%	86%	19%	73%	8%
Russian *про-*	16%	0%	4%	96%	41%	39%	21%
Russian *пере-*	0%	4%	5%	92%	0%	98%	2%
Russian *о(б)-*	0%	0%	0%	100%	100%	0%	0%

This similarity between motion verbs prefixed with *по-* and determinate verbs of motion includes the fact that determinate verbs of motion also do not have landmarks as direct complements in the accusative case, instead requiring prepositions in order to indicate the nature of the relationship between landmark and trajector. Thus it would appear reasonable to claim that the prefix *по-* is little more than a neutral perfective form for determinate verbs of motion. Indeed, *по-* is often considered an empty (purely perfectivizing) prefix with determinate verbs of motion because it does not form secondary imperfectives. (When *по-* combines with indeterminate verbs of motion, delimitative perfectives are formed instead. These are distinct in meaning from the *по-* perfectives formed from determinate verbs of motion.)

[1] Many of these *по-* prefixed verb tokens occurring without prepositional phrases nevertheless appeared with adverbials expressing direction.

[2] Czech *po-* is not included, as there were only a few examples of the prefix in the entire database.

In Czech the link between the determinate verbs of motion and the prefix *po-* is even clearer. The prefixed forms act as aspectually neutral future tense forms for determinate verbs of motion, contrasting symmetrically with the aspectually neutral (unprefixed) past tense forms of determinate verbs of motion (e.g. for the determinate verb *jet* 'to go (by vehicle)': *jede*[I] 's/he is going,' *po-jede*[I/P] 's/he will go,' jel[I/P] 'he went'). *Po-* prefixed forms of Czech motion verbs thus exist only in the future tense and do not possess a separate infinitive form.[3]

По-/po- would thus truly seem to add little, if any, lexical semantic content (i.e. signaling only *perfective* in Russian and *future tense* in Czech), when compared with unprefixed determinate verbs of motion. In Russian the two verb forms often alternate in trials with a single speaker:

(1) a. trial 1: Змея ползла через дорогу, потом ползла вдоль берега реки, дальше, уползла
*A snake slithered across the road, then **slithered along the river bank**, and after that it slithered away*

b. trial 2: Змея ползла через дорогу, потом по-ползла вдоль берега реки и уползла дальше.
*A snake slithered across the road, then **slithered along the river bank** and slithered on away*

If *по-/po-* is indeed simply functioning to form a neutral perfective for determinate verbs of motion in Russian and as a neutral future tense for determinate verbs of motion in Czech without conveying any lexical semantic content at all, certain questions should be considered. How and why has the prefix *по-/po-* come to function in this capacity (i.e. what kind of shift in the original Path status of the preposition *по/po* might account for this), and why has the prefix taken up different roles in Czech and Russian? Before turning to these questions, however, a closer examination of *по-* perfectives and determinate verbs of motion in Russian should be undertaken in order to verify that *по-* perfectives are indeed appropriately considered neutral perfective partners for determinate verbs of motion.

[3] Future tense *po-* prefixed forms of motion verbs are most often considered to be imperfective in Czech grammars, although there is considerable disagreement among sources. Since the imperfective is the unmarked member of the aspectual opposition, it is easy to see why this assumption is made; the *po-* prefixed forms may indicate durative motion in the future, thus the fact that they are also used in contexts where Russian uses a *perfective по-* prefixed form is simply explained by the lack of a corresponding perfective form in Czech. The assumption that *po-* prefixed forms are therefore (only) imperfective is based on a presumption that all verbs must be either imperfective or perfective. The fact that determinate past tense forms in Czech are also used in both imperfective and perfective contexts suggests that, in fact, Czech determinate verbs of motion are aspectually neutral. They will be considered as such in the analysis which follows.

5.2 Contexts of usage for Russian *по-* perfectives with Motion Verbs

One noticeable difference between determinate verbs of motion and those prefixed with *по-* is a significant increase in goal expressions with the prefixed verb. An analysis of verb tokens without prepositional phrases is even more instructive. Fully 79% of determinate verb tokens without prepositional phrases have no additional path information at all (i.e. do not include adverbial expressions of direction). In contrast, only 38% of *по-* prefixed verb tokens without prepositional phrases are non-directed, with the remaining 62% expressing path information with adverbial expressions:

(2) a. Машина выехала из туннеля и по-ехала вверх
*The car drove out of the tunnel and **started driving uphill***

b. Мальчик по-шел куда-то
*The boy **started walking (to) somewhere***

Another difference between determinate verbs of motion and their *по-* prefixed counterparts concerns context of usage within the narrative. While it is true that the two may alternate in some contexts, there are others where they do not. Thus, if a film begins with a trajector moving from the off-screen area to on-screen, such that the initiation of the trajectory was not witnessed, speakers will never begin the narrative with a *по-* prefixed form, whereas determinate verbs of motion are quite common:

(3) Девочка идет по берегу, подходит к воде...
*A girl **is walking** along the bank, approaches the water...*

In contrast, if a stationary trajector begins its motion on-screen, *по-* prefixed verbs are used almost exclusively, and consequently, determinate verbs of motion are hardly used at all:

(4) Мальчик стоял на ковре, потом по-шел и ушел
*A boy was standing on a rug, then he **started walking**, and left.*

This is in keeping with the well known usage of *по-* perfectives to indicate the initiation of motion, as well as the usage of determinate verbs of motion to introduce an inertial state of affairs, as described in the previous chapter.

The data clearly demonstrates, however, that the use of *по-* to indicate initiation of motion is a subcase of a more general function of *по-* to indicate the initiation of a new trajectory. (Forsyth makes this same observation, linking the inceptive sense "with any change in velocity, direction, etc." (1970:327).) A new trajectory, then, need not result from the start of motion, but may also be triggered by a change in the (established, inertial) terrain, manner, or direction of motion:

(5) Use of the prefix *по-* to designate any kind of change in motion:

a. Terrain: Собака подбежала к ковру, по-бежала по ковру и убежала дальше
*A dog ran up to a rug, **started running on the rug** and ran on away*

b. Manner: Мальчик вышел из дома, сел в машину, по-ехал...
*A boy **walked** out of the house, got in a car, **started driving**...*

c. Manner+Terrain: Змея ползла по берегу, заползла в реку, по-плыл по реке...
*A snake **was slithering along the (river)bank**, slithered into the river, **and started swimming along in the river**...*

d. Direction: Из гаража выехала машина, повернула и по-ехала по дороге
*A car **drove** out of the garage, **turned and started driving** along the road*

This use is consistent with the general function of prefixed forms to further refine a description of motion by breaking down the larger motion event into subevents (trajectories). Once a particular motion situation has been established as the inertial situation, any departure from this will be noted with a prefix. In contrast to the special case of initiation of motion, in this particular context the alternation of *по-* prefixed forms with unprefixed determinate verbs of motion is quite regular (see example (1) above).

The fact that *по-* focuses on the initiation of a new trajectory makes it evident why it is used to indicate the initiation of motion on-screen, where the observer has witnessed the start of the trajectory, but not for motion which was initiated off-screen and merely progressed into view. Furthermore, since changes (in the manner, terrain, or direction of motion, or from stasis to motion, etc.) serve to demarcate trajectories, these are all possible contexts for highlighting the fact that a new trajectory has been initiated. Determinate verbs of motion, in contrast, do not indicate any change in, or initiation of, a *new* trajectory. In this task in particular, one of the primary functions of determinate verbs of motion in Russian is to announce the basic manner, direction and/or terrain of directed motion. The statement of the fact that some action (in this case motion) is taking place is one of the basic functions of the Russian imperfective. Establishing background conditions, or scene-setting, is a major discourse function of the Russian imperfective. Determinate verbs of motion clearly serve these functions for individual instances of directed motion and in this way are behaving as typical imperfective verbs.

The use of *по-* prefixed forms to indicate the initiation of a trajectory explains the apparent alternation of the prefix *по-* and the prefix *у-* with final verb tokens in a narrative sequence that was observed in Chapter 3:

(6) a. trial 1: Птица подлетела к деревьям, скрылась в деревьях, вылетела, и по-летела дальше
*A bird flew up to some trees, hid in the trees, flew out, and **flew on***

b. trial 2: Птица подлетела к деревьям, скрылась в листве, потом вылетела, и у-летела
A bird flew up to some trees, hid in the leaves, then flew out and flew away

Occasional examples in which the speaker uses both forms together at the end of the narrative sequence demonstrate, however, that the two prefixed forms cannot be considered to alternate:

(7) Прибежала собака, полежала на коврике, потом вскочила, по-бежала дальше и у-бежала
*A dog ran in, lay on the rug for a little while, then jumped up, **started running on again and ran away***

In cases of apparent alternation, *по-* prefixed forms generally occur in the first trial and *у-* prefixed forms in the second trial, when the speaker is certain that the film is over and motion will not continue in another frame (as in example (6)). This shows that the two prefixed verbs present different perspectives as to what is occurring on the screen. *По-* draws attention to the initiation of a new trajectory where the last trajectory left off. It is appropriate, since the initiation of a directed trajectory has been witnessed, even if the future details of this new trajectory are inaccessible because the figure is moving out of range. *У-*, in contrast, focuses on the departure of the figure from the speaker's domain, as described in Chapter 3. Thus, in this context *по-* presents a trajector-oriented perspective (i.e. profiles the start of a new trajectory which is known to the trajector, even though the full extent of the trajectory is not perceptually accessible to the speaker). In contrast *у-* presents an observer-oriented perspective in this particular study (i.e. profiles motion as departure from the observer's domain of accessibility). The nature of this difference between *по-* and *у-* will be explored further in Section 5.3.2.

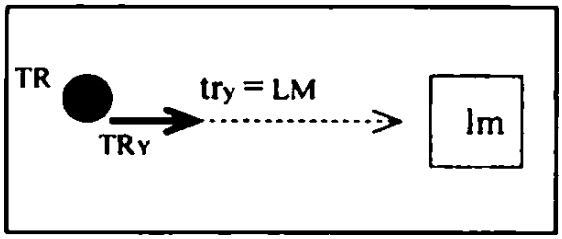
5.3 The spatial schema for *по-* with Motion Verbs

5.3.1 Where's the landmark?

In the previous chapter it was noted that one of the basic functions of prefixes in Russian and Czech is to impose a source-path-goal schema (trajectory) onto otherwise potentially undifferentiated or durative motion, such that the scope of interest is quite limited. This has the effect of creating perfectives, since this smaller chunk of motion imposes a local goal on the motion and ultimately indicates goal attainment. Previously we have seen that this goal attainment is measured with respect to some landmark, and the same would be expected to be true for the prefix *по-/po-*. It appears, however, that (as with determinate verbs of motion) *по-/po-* is compatible with any kind of trajector/landmark relations. In other words, unlike the majority of prefixes considered so far, there is no readily recoverable trajector/landmark relation which holds at the source, path, or goal point of motion, and the nature of the trajector/landmark relationship must be established by means of prepositions.

Does this mean that the prefix *по-* only identifies a trajectory and leaves landmark reference fully indeterminate? This would be one way to explain the usage

profile for this prefix. The evidence given above, however, suggests a subtle difference between *по-* perfectives and determinate verbs of motion. Furthermore, we have already seen that prefixes which appear quite flexible with regard to the proximity, contact, and containment parameters (*про-/pro-, при-, у-, до-*) often have an "abstract landmark" as a primary referent, which is obscured by the presence of an explicit landmark. The most obvious difference between determinates and *по-* perfectives noted here is the tendency for the latter to focus on the initiation of a trajectory. This suggests that the appropriate landmark for *по-* is the entirety of the explicit trajectory (i.e. the Source, Path, or Goal prepositional phrase and not simply the nominal complement of that prepositional phrase). The prefix trajectory, in turn, is equivalent to an initial piece of that larger, linguistically explicit trajectory (rather than the entire explicit trajectory, as is usually the case for prefixes). The prefix *по-* with motion verbs thus indicates (as do all prefixes) that the trajector completes the prefix trajectory, but this trajectory happens to constitute only an initial portion of the explicit trajectory for the entire expression. Thus, *по-* does not indicate that the trajector traverses the entire explicit trajectory, but only initiates it. As noted above, this explicit trajectory is thus acting as the landmark for the prefix *по-*:



Собака по-бежала к дому
*A dog **set off (ran)** toward the house*

Trajector: собака/dog
Constructional (explicit) landmark (lm): дом/house
Constructional (explicit) trajectory (tr_Y): к дому/to the house
Prefix landmark (=explicit trajectory) (LM): к дому/to the house
Prefix trajectory (TR_Y): initial portion of abstract LM/explicit tr_Y

Figure 5.1. Spatial schema for the Russian prefix *по-* with Motion Verbs. LM and TR_Y reference for the prefix and for the entire verbal construction (constructional LM and TR_Y), and the relations between them, for the prefix *по-* in a sample sentence.

Notice that the LM for the prefix *по-* with motion verbs is thus identical to that posited for *про-/pro-* and in spatial contexts may be considered simply an extent of space. The difference between the two prefixes is in the extent of the prefix trajectory in relation to this LM -- that is, in the extent of the explicit trajectory which is completed. Whereas *про-/pro-* always indicates that the trajector traverses the entire extent of space defined by the landmark, *по-* does not. Hereafter this extent of space which acts as the "abstract landmark" for *по-* will be referred to as the BACKGROUND TRAJECTORY. It is important

to recognize that the trajectory for *по-* is of an arbitrary length (i.e. not inherently short), however it is always equal to or shorter than the background trajectory according to which it is defined, and *it is always greater than zero*. The reason for this is considered in the Section 5.4.3.

Another important point is that *по-* indicates the initiation of a new trajectory, but not necessarily the initiation of the type of activity named by the base verb. With motion verbs there is generally some apparent feature of the motion situation which serves to mark a change in an aspect of motion, hence the initiation of the new trajectory. Sometimes the source point of the new trajectory is merely the contextually available goal point of the previous trajectory. (Oddly, in such cases *по-* prefixed forms may, in essence, indicate the *continuation* of motion. See, for instance, example (13)a below.) In non-spatial contexts involving an undifferentiated telic process there is often no explicit marker for the source point of the trajectory indicated by the prefix other than some assumed or contextually available source world state, thus the sense of initiation (of the process) is lost in favor of the broader sense of (some amount of) change from a previous (known) state:

(8) Он в последнее время по-старел[†]
*He **has aged** (somewhat) recently*

In such cases the endpoint of change is quite subjective, and this is compatible with the arbitrary extent of the prefix trajectory in relation to the background trajectory. *По-* is thus particularly suited to forming perfectives for telic processes with highly subjective limits, where the change is relative to background conditions (*побледнеть*, 'to turn pale'; *покраснеть*, 'to turn red, blush' etc.). In light of this observation, it is worth clarifying the relationship between the prefix trajectory and the background trajectory to show that *по-* does not necessarily indicate the inception of the verbal activity itself:

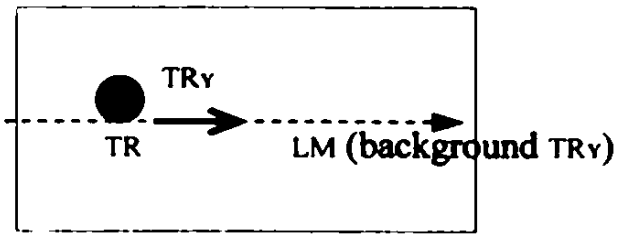


Figure 5.2. Revised schema for the Russian prefix *по-* with Motion Verbs

5.3.2 *По-* must have a background trajectory

The fact that the landmark for *по-* with verbs of motion must itself be a trajectory accounts for the lack of landmark complements in the accusative case with *по-*. In fact, this model for the interpretation of *по-* makes the prediction that *по-* cannot be used without a background trajectory, since this trajectory defines the landmark, and ultimately also the prefix trajectory. Given this prediction, it seems odd that *по-*

prefixed verbs should occur without a prepositional phrase, since the prefix requires some overtly named trajectory in order to have definition itself. As we have seen, however, the majority of *по-* prefixed expressions without prepositional phrases have adverbially defined trajectories. Adverbs give the direction of motion in space, but the exact nature of the destination or full trajectory remains ambiguous. This is perfectly acceptable for the prefix *по-*, since the profiled portion of the trajectory (which was always immediately perceptually available to the speaker in this study) is only the initial piece of this background trajectory. The remainder of the background trajectory may be left vague. The single most common adverbial complement in these cases is simply *дальше* 'further,' which defines the new trajectory as a continuation of the previous (i.e. known to the speaker) directed motion, often after an interruption by an unusual feature in the terrain. Thus the prefix trajectory (the source region of the background trajectory) is contextually defined:

(9) Мы видели, как машина спустилась с горки, проехала через огромную лужу, все закончилось благополучно, и люди по-ехали дальше
We saw how a car descended from a small hill, drove through a gigantic puddle, everything turned out fine, and the people went ***on their way (set out driving further)***

Even without adverbials, the background trajectory need not be linguistically explicit, but in such cases it must be retrievable from context in one form or another. This constraint on *по-* can be most readily illustrated in contrast to the prefix *у-*, with which it shares certain inferential aspects of meaning. Both prefixes indicate departure from a source area, but only *по-* makes reference to a further extent of a background trajectory. For this reason it is quite acceptable to answer the question *где Маша?* 'where's Masha?' with *она ушла* 'she left,' but it is not possible to say *она пошла* 'she set out,' unless it was known to both speakers beforehand that she intended to go somewhere and thus the background trajectory is retrievable from context.

It is now clear not only why *по-* and *у-* should appear to alternate (both focus attention on a location at the initial portion of a trajectory), but also why *по-* is trajector-oriented, and *у-* is not. In the case of *у-*, the focus is on departure from the source point of that trajectory (a domain that is often associated with accessibility to an observer). The resultant inference is that the trajector is no longer present or accessible at the source point, but there is a lack of concern as to the nature of that inaccessibility (i.e. the current location and/or intended destination of the trajector). In the case of *по-*, the focus is on the completion of the initial portion of a larger trajectory, with the resultant inferences that the trajector intended to go someplace and is at least on its way to that intended destination (i.e. the current location of the trajector is relevant), in addition to being absent from the source point. Thus, *по-* always implies something about trajector intention, whereas *у-* does not. (We will return to the significance of intention in Section 5.6.) The two prefixes thus share the inference that the trajector is no longer present at the source point, making them both suitable for contexts of departure. For the prefix *по-*, however, the source point is always gauged relative to a background trajectory, such that departure is also some amount of progress measured with respect to

an intended trajectory. While the intended trajectory may or may not be known to an observer (*он пошел куда-то* 'he went somewhere'), minimally the goal will always be known to the trajector itself, and this endows the prefix with a trajector-oriented perspective.

5.3.3 Inceptive *по-* versus inceptive *за-*

The fact that *по-* profiles the initial portion of a background trajectory explains the use of *по-* to indicate the inception of action for non-motion verbs as well:

(10) Дождь по-лил†
*It **began to rain***

This usage is quite limited, however. The schema for *по-* with verbs of motion predicts that inceptive *по-* will differ from inceptive *за-* by virtue of the fact that the new action follows an intended or expected course (which, as we have seen, may be simply the continuation of a previous trajectory). In other words, since *по-* is always evaluated against a known or possible background trajectory, it profiles the initiation of an action according to the normal evolution of that action. This predicts that *по-* can only indicate inception when the base verb is itself directed (telic). Otherwise the background trajectory is temporal and of unlimited extent. Even if the prefix indicates an initial portion of such a trajectory, it cannot be perceived as directed toward completion of the action and the prefix will be interpreted as indicating simply that the trajector engaged in the verbal action for some amount of time. In contrast, *за-* profiles a change of state (often unexpected, i.e. the new state deviates from an expected or known state; see Chapter 3, Section 3.5.5), but says nothing about how the new action develops, and need not be limited to telic base verbs in order to indicate the initiation of an action:

(11) a. Собака встала и по-бежала(-DET, telic)
*The dog stood up and **set out at a run*** (i.e. on a directed trajectory)

b. Собака встала и за-бегала†(-INDET, atelic) (but not *собака по-бегала)
*The dog stood up and **started to run*** (i.e. engaged in a new activity, no directed trajectory implied)

По- may also be used when there is an unexpected change of state, but this additional sense is indicated by other elements in the expression (e.g. *вдруг* 'suddenly'), and the new action always follows the intended, expected, or known course of that action. *За-* may combine with telic verbs also, but is not restricted to them and profiles only the change in state (from non-action to action). The fact that action then takes its expected course in the case of telic verbs is just a logical consequence of the fact that the verb is telic and is not a feature of the prefix. *За-*, then, indicates plain inception of action, whereas *по-* indicates that some quantity of a directed action has occurred, which, under certain circumstances, is equivalent to inception. This difference arises out of the goal status of *за-* and the path status of *по-*; the base verb denotes a goal state

"landmark" for *за-*, but a path-like process for *по-*. Where *по-* and *за-* apply to the same telic verbal roots, they may be quite similar in meaning, but this difference in landmark status is nevertheless recoverable:

(12) a. за-краснеть	vs.	b. по-краснеть
(i) *to begin to show/turn* red		(i) *to redden, to blush*
(ii) *to stand out (of red things)*		(ii) *to become red*

In this example *по-* is not generally considered inceptive in meaning. *По-* does not, in fact, typically indicate inception even with telic verbs; as noted previously, the inceptive use of *по-* is quite rare. In fact, inception is merely a subcase of the more general notion of change that occurs when the change is precisely in the kind of action named by the verb. If the change indicated by the prefix *по-* does not align with the start of the action named by the verb, it will not be perceived as an initiatory change. In the example given above, the trajector may already be somewhat red (cf. *он еще больше по-краснел* 'he blushed even more,' i.e. got somewhat redder), thus *по-* indicates either a change in the degree of redness of the trajector, or a complete change to some implied limit (in other words, merely perfective. See Section 5.5.4 below.) Although a complete change from some other color/state to one of redness is not excluded, this is merely a subcase of the general meaning in which the source state happens to be one of non-redness. The origin of the trajectory itself need not be explicit; whatever the initial state was, there has now been some change along that trajectory.

За-краснеть, on the other hand, either indicates plain inception ('begin to turn red') or deviance (from a background) due to redness. In Chapter 3 it was argued that the inceptive sense of *за-* arose from its tendency to designate something deviant, therefore something which has changed from the inertial or expected situation. Similarly, the inceptive sense of *по-* arises from a more basic sense of *change*, but rather than deviant change, it is change along the directed trajectory of a process. This is precisely parallel to the usage of *по-* with determinate verbs of motion to indicate a change in terrain, direction, or manner of motion even in instances where motion itself is on-going (i.e. motion itself was *not* initiated). The new terrain, direction, or manner serves as a demarcation point for a new trajectory. Thus, the notions of inception (of a new trajectory) and change (in some principal aspect of the situation) are almost impossible to separate, and it is not surprising that both prefixes carry both connotations. *По-*, however, can impose its source and goal points on an on-going process according to other cues, whereas *за-* cannot:

(13) a. Собака подбежала к коврику, пробежала по коврику, и по-бежала дальше
*A dog ran up to a rug, ran along on the rug, and **set out/continued (running)** along*

b. *Собака подбежала к коврику, пробежала по коврику и за-бегала (дальше)
A dog ran up to a rug, ran along on the rug, and then **started to run (onward)*

The difference between *по-* and *за-* can be represented graphically as follows:

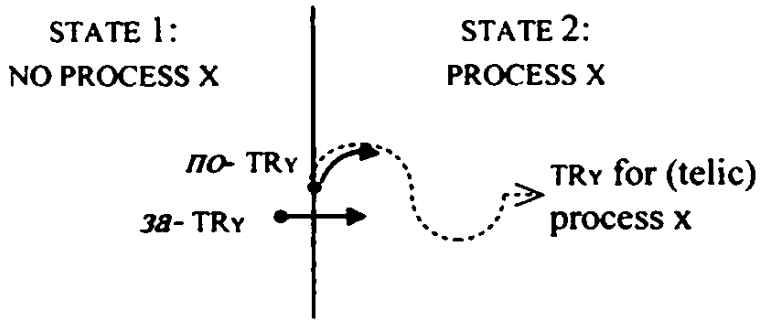


Figure 5.3. A comparison of prefix trajectories for inceptive *по-* versus inceptive *за-*

From the diagram it can be seen that even when both *за-* and *по-* combine with the same base verb, the relationship of the prefix trajectory to the base verb is quite different in each case. As noted above, these differences are expected based on the fact that *за-* is a goal prefix, whereas *по-* is a path prefix. Thus, *за-* indicates that there has been a shift from state 1 (non-action) to state 2 (action), whereas *по-* indicates that some (small) amount of an action has occurred, and the action has thus been initiated. Although the base verb for these prefixes appears to label the very same action for each prefix, it is now clear that the base verb itself is interpreted quite differently depending on the prefix which is present. *За-* construes the verb as naming a state (STATE CONSTRUAL), while *по-* construes the verb as naming a process (PROCESS CONSTRUAL). (The relationship of prefix to base verb is discussed in more depth in Chapter 6.) The inferences which are generated (i.e. that the action is now in progress and is therefore unfolding according to its inherent parameters), however, typically will be identical for both prefixes, such that they are equivalent in the inceptive meaning.

По- and *за-* are thus both possible and would be quite indistinguishable when applied to telic verbs with an inceptive meaning, whereas only *за-* is possible in an inceptive sense with atelics. *По-* and *за-* do not generally combine with the same telic verbs to indicate inception, however. In most cases outside the realm of actual motion, *по-* tends to act simply as a perfectivizer in combination with telic verbs. The reasons for this will be explored in Section 5.5.5.

5.4 THE *ПО-* SCHEMA AND THE SPATIAL PROTOTYPE

In the previous chapter the interpretation of the landmark for the prefix *про/pro-* as equivalent to the (explicit) trajectory and/or domain of the constructional LM was related to the <+path, +contain> features of the spatial prototype for that prefix. We might then expect the interpretation of the landmark (and trajectory) for the prefix *по-* to reflect its spatial prototype of origin as a <+path, +contact, +contour> morpheme as well.

5.4.1 *По-* as a Path prefix

The interpretation of *по-* given above is certainly consistent with the expected Path status of the prefix. The distinguishing feature of Path prefixes is the intimacy of trajector and landmark during the course of motion, rather than at initial and final points. If the prefix landmark is defined as the explicit (background) trajectory and the prefix trajectory as some smaller piece of that background trajectory, then *по-* is clearly functioning as a Path prefix, since the trajector/landmark relation is close throughout the course of motion. Nevertheless, because the trajectory is often coextensive only with an initial piece of the landmark, the source region of the explicit trajectory is profiled. For this reason *по-* bears some resemblance to Source prefixes. This is why it appears to be interchangeable with the prefix *у-* in some contexts. Both prefixes focus on the source region of a trajectory, although they take significantly different perspectives on the nature and role of that source region.

5.4.2 *По-* as a Contact prefix

Although the prefix *по-* now appears to be a Path prefix in origin, the contact status of the original preposition seems to have been lost. When compared to determinate verbs of motion as a control situation, it becomes clear that *по-* has no preference for contact relations over and above that of determinate verbs of motion. Thus, the proximity, contact, and containment figures probably reflect the relative rarity of path containment situations and the relative commonness of path contact situations in human experience rather than the contact status of the prefix *по-*. The fact that *по-* shows no preference for Contact prepositions is not unexpected, however, since the constructional landmark does not represent the prefix landmark. Thus the proximity, contact, or containment relation of the constructional landmark to the trajector is not relevant to the contact status of the prefix. This explains why *по-* combines readily with all types of prepositional phrases and in roughly the same proportions as such phrases combine with determinate verbs of motion. It is parallel to the situation for *про-*, where the proximity, contact, or containment relation of the trajector to the explicit landmark obscured the basic containment status of the prefix. In that case the abstract landmark for *про-* was equated with the domain of the explicit landmark. The trajector always penetrates the domain thoroughly, but relates to the explicit landmark in a variety of ways.

How is it that *по-* and *про-* possess the same "abstract LM" but different trajectories, and can this be related to the presumed spatial prototypes of these morphemes as <+path, +contact, +contour, ±span> and <+path, +contain, ±contour, ±span> respectively? In fact, for Path prefixes we might expect that the <+contact> and <+contain> features are not particularly useful for distinguishing among prefixes, since trajectors may always be construed as moving in contact with a substance (the ground, air, water, etc.) or being contained within a substance (space itself, air, water, etc.). This observation regarding the redundance of contact and containment in <+path> contexts was made in Chapter 2 and helped to explain the absence of an explicit Containment preposition in Russian.

Despite the equivalence of Path Contact and Path Containment prefixes in terms of their relationship to physical landmarks which define a path in space, these features

generate significantly different inferences about that relationship. Mere contact with an entity is viewed as a less involved interaction than containment within that entity. The <+contact> feature thus generates the inference that the action was superficial in nature, therefore not extensive. (Notice, however, that the inference of *superficiality* would not be expected to apply for LMs which explicitly name surfaces: cf. *по-красить*^{P} *стену* 'to paint the wall (completely)'. Thus, as usual, we see that a single prefix may generate contradictory inferences depending on context.) The <+contain> feature suggests extensive involvement with the landmark and generates the inference of *thoroughness* of action, suggesting a greater commitment of resources (effort, time, etc.) to the action in question. Thus, if one prefix is to designate a more thorough involvement between trajector and landmark (i.e. that the trajector traverses the full extent of the explicit trajectory), the containment prefix would be expected to do so. In contrast, the prefix *по-* is more suited to indicate that only some fraction of the background trajectory has been completed. This amounts to a contrast between the inference of *superficiality* associated with *по-* and the inference of *thoroughness* associated with *про-*.

5.4.3 *По-* and the feature

A second consideration is that while *по-* and *про-* are both theoretically <±span>, in the previous chapter (Section 5.6.1) it was noted that the prefix *про-* greatly favors <+span> contexts. The rarity of actual containment paths predisposes the feature <+contain> to suggest a functional interpretation of the landmark as a passageway designed for motion (e.g. tunnels, etc.) or as a medium of motion. This functional perspective of LM as the means of getting somewhere, in turn, predisposes the prefix to a <+span> interpretation, since (in terms of function) the TR has utilized the LM to the full extent of its utility in context. This ensures that the <+span> situation is the norm for *про-*. Indeed, there is no contrasting <+span> Containment prefix. The preposition *по* (and correspondingly the prefix *по-*), on the other hand, is more commonly <-span>, since surfaces on which motion occurs are often viewed as inherently extensive in space (i.e. roads, fields, the ground, etc. may extend for very long distances). Furthermore, there is a <+span, +contact> prefix (*пере-*) which contrasts with the prefix *по-*. The result is that *про-* is the best choice for indicating a complete spanning of the explicit trajectory, whereas *по-* is a better choice for indicating that a trajector does *not* span the background trajectory, but covers only some portion of it.

5.4.4 *По-* and the <contour> feature

Finally, it was noted in Chapter 2 that the preposition *по* is a Path preposition positively defined by only two other features, <+contact> and <+contour>. These features interact to constrain the trajector in both lateral and vertical dimensions, such that *по* is a minimally contentful landmark-centered preposition indicating that the trajectory is fully defined by (the contours of) the landmark. Since the trajectory for *по-* with motion verbs is an integral piece of the prefix landmark (the explicit background trajectory), it is indeed entirely constrained by the landmark contours, as expected.

5.5 Abstract use of the prefix *по-*

5.5.1 *По-* and *про-* function as abstract prefixes with Motion Verbs

According to the account presented so far, the prefix *по-* is, in fact, used abstractly with verbs of motion. In other words, the prefix does not refer to simple <+path, +contact, +contour> relations of concrete, physical trajectors and landmarks even in this basic spatial context. Instead, inferences arising from these features condition the interpretation of the extent of the verbal action itself. In the case of *по-* prefixed motion verbs, these inferences are then reapplied to a spatial context.

The abstract use of prefixes with determinate verbs of motion is, in fact, not uncommon in Russian. We have seen that *при-, у-, под-, до-* and (to a lesser extent) *про-* function abstractly with motion verbs rather than referring to concrete spatial entities. This does not mean these prefixes do not have concrete, spatial uses, but only that they do not have them in combination with verbs of motion. (In fact, *про-* does have a spatial interpretation with determinate verbs of motion in cases where there is a clear container landmark, thus there is overlap between the abstract and concrete uses of *про-* in these instances.) There are other base verbs denoting actions in space which combine with these prefixes, such that the features of these prefixes apply to concrete landmarks rather than the interpretation of the action itself:

(14) a. Чехи по-ливают вареники и маслом и сметаной†
*Czechs pour both butter and sour cream **over** their fruit dumplings* (trajector is in a <+contact, +contour> relation with concrete landmark; these features do not apply to the verbal process)

b. Стрела про-колола панцирь и вонзилась ему в сердце†
*The arrow pierced **through** the armor and penetrated his heart* (trajector is in a <+contain> relation with concrete landmark)

In such cases the explicit constructional landmark and the prefix landmark are identical. In other words, the prefix landmark is an overt, spatially extant entity.

Nevertheless, in Russian the abstract interpretation of the prefix *по-* (as inceptive, delimitative or perfective) has almost completely usurped any spatial interpretation, such that even when verbs denoting actions that affect surfaces are involved, *по-* prefixed forms suggest a completion of the action itself, not the complete covering of a surface (cf. *по-красить*, 'to paint'). (Later we will see that this is not the case in Czech.) Despite this, the logical implications may be identical for either spatial or abstract interpretations (i.e. covering a surface with paint according to the contours of that surface suggests that the surface got (fully) painted). Presumably it is precisely this kind of overlap which allows a shift from spatial to abstract interpretation to occur.

Thus, although *по-* and *про-* may be used with concrete landmarks in space, this is rare, and they are not used spatially with verbs of motion. The reason for this is probably the redundancy of the notion of *path* with motion through space itself, which has been pointed out previously. All determinate verbs of motion, prefixed or not, indicate that a TR carves a path in space. All motion may be conceived of as *contained*

in space or *in contact with some substance*. Thus, these particular features are less useful in path expressions. Furthermore, the contact or containment relation of the trajector to the landmark is obvious given the manner of motion encoded in the determinate verb base. These prefixes are thus appropriated for a different function, commenting on the extent of the action itself. It is because these prefixes comment upon the extent of the verbal action that they function to quantify verbal action. The quantifying function of the prefix *по-* underlies all of its abstract uses. These uses, and the relationship among them, are considered below.

5.5.2 *По-* quantifies action

Source and Goal prefixes focus on a TR/LM relation at a source or goal point in space and/or time and thus tend to generate inferences concerning the initial or final state of an action. Path prefixes, in contrast, focus on the TR/LM relation over an extent of space and/or time and thus tend to generate inferences about the nature of the action itself. For this reason we should expect Path prefixes, rather than Source or Goal prefixes, to function as quantifiers of action. It has also been noted that the <+contact, +contour> status of *по* suggests that the action itself is fully constrained by parameters of the landmark in both dimensions; thus, the morpheme is highly landmark-centered and provides little in the way of inferences other than the fact that the action proceeded according to the expected constraints on that action. From this it can be inferred that the action is not in any way unique, but proceeds like every other action of that sort. The <±span> feature further suggests that this action may or may not have reached some natural endpoint. Thus, in non-spatial contexts the prefix *по-* might be expected to mean simply that *some amount of action occurred in accordance with the inherent properties and parameters of that action.*

5.5.3 Temporal delimitative *по-*

One abstract function of the prefix *по-* is to indicate that an action occurred for some (usually short) period of time:

(15) Мы по-ходили немножко по парку†
We walked around the park for a little while

Given the abstract definition of *по-* presented in the previous section, it is not difficult to explain this usage. With directed (telic) actions, such as those indicated by determinate verbs of motion, *по-* invokes a sense of completing a certain (arbitrary) amount of the named action. With non-directed (atelic) actions, the amount of action can only be measured with respect to time, thus the prefix will invoke a sense of engaging in the activity for a limited period of time. Since atelic actions do not have any inherent endpoint, this limited time period may be of any actual length. Nevertheless, it is frequently the case that temporal delimitative *по-* indicates a relatively short amount of time (with respect to some implicit standard).

One reason for the tendency to indicate a short time period arises from the <+contact> feature, which (as pointed out in Section 5.4.2) generates the inference that the action is superficial in nature. When the extent of action is measured in temporal

terms, this implies that the action was of short duration. Nevertheless, this feature is relevant primarily in contrast to the <+contain> feature present in the spatial prototype of the prefix *про-*. This suggests that the association of *по-* with a small amount of action is largely due to contrast with the prefix *про-*.

A second reason that *по-* may indicate a short amount of time is the tendency for *по-* to be <-span>. In non-spatial uses this translates to an inference that the action did not reach its conclusion. For atclic actions the only retrievable limit is one defined by norms: a typical or normal amount of time that one might engage in the named activity. *По-* thus suggests that a less than usual amount of time was spent engaged in the activity named by the verb. Since *по-* is in fact designated <±span>, the <-span> interpretation is also probably largely in contrast to the usually <+span> status of *про-*. In any case, the delimitative sense of *по-* indicates *a small amount* only in relative terms. (Notice that it is frequently modified by the adverbial *немного* 'a little bit' to make this explicit.) The amount of action indicated by the prefix itself is arbitrary, as mentioned above, and can theoretically be quite extensive. It is the evaluation of this trajectory of arbitrary extent relative to a background trajectory (norm) of equal or greater extent which produces the interpretation of relative diminution.

5.5.4 *По-* as an empty perfectivizer

For a number of telic verbs there appears to be no recoverable difference between the unprefixed and *по-* prefixed forms other than the imperfective/perfective distinction itself:

(16) a. Они строили[I] новый дом[†]
They built/were building a new house

b. Они по-строили[P] новый дом[†]
They built a new house

The *по-* perfective here indicates completion of the building process and the presence of a newly constructed house, *not* the initiation of construction, nor that some amount of time was spent constructing a house.

There are a few ways to explain such a development in the usage of *по-*. The first is simply to fall back on the fact that all prefixes are capable of defining two states (a source and goal), and thus all prefixes can act as neutral or empty perfectivizers. This approach simply ignores any other semantic content which belonged to the spatial prototype for the prefix. Nevertheless, *по-* is more common in the role of empty perfectivizer than other prefixes that appear to act as neutral perfectives of unprefixed verbs (Čertkova, 1998). Thus, it deserves some attempt at a motivated explanation.

Notice that the abstract definition of *по-* as indicating that some amount of action occurred according to the general parameters of that action does not necessarily suggest that the action is incomplete relative to a background trajectory and/or of short duration. In fact, the <±span> status of *по-*, as we have noted, suggests that *по-* may readily indicate that the action is carried out to the full potential extent of the action, or

to some lesser extent. For this reason it should not surprise us that *по-* sometimes acts as a plain perfective. Rather, given that *по-* simply suggests that the action is carried out according to its own inherent parameters, it seems uniquely suited to indicate precisely and only *perfective*. In fact, it might be more appropriate to ask why *по-* developed a temporal delimitative or inceptive usage, as these seem rather secondary.

5.5.5 Perfective, delimitative, or inceptive?

It appears that the tendency for *по-* to indicate (only) *perfective*, rather than *inception* or *delimitation*, is primarily dependent on the telic/atelic status of the base verb and the presence and retrievability of a well-defined limit for the telic verbs. Thus, in example (16) above (*по-строить новый дом* 'build a new house') there is a clear limit to be attained, indicated by the verbal complement *новый дом*, 'new house.' However, many verbs which may be classed as telic do not have such explicit limits (cf. the example from Section 5.3.3: *он еще больше покраснел* 'he blushed even more,' i.e. got somewhat redder). It is not unusual for a single telic base verb to allow both possibilities, just as a single base verb may also allow both atelic and telic interpretations (see Section 5.7.3 below). Determinate verbs of motion offer a case in point. Although they are inherently telic (directed in space), they do not always occur with an explicit goal:

(17) a. Девочка идет в дом
The girl is walking to the house (telic, explicit goal/limit on extent of motion)

b. Девочка идет по дороге
The girl is walking along the road (telic, no explicit goal/limit on extent of motion)

In the latter case, there is no explicit limit to be attained, and at best, *по-* could indicate that some amount of directed motion occurred (along a road). *По-*, then, can indicate either some amount of action which attains a (known/explicit) limit, or some arbitrary amount of action of potentially unlimited extent or duration. The latter sense is often applied to determinate verbs of motion even when there is an explicit goal (limit), and in this regard determinate verbs of motion are unusual. In other words, when a limit is available, *по-* typically indicates limit attainment, hence *perfective*. For verbs of motion, however, *по-* is often inceptive even when there is an explicit limit for motion. (The reason for this is discussed in the next section.)

Given this analysis of the prefix *по-*, especially the fact that it most often indicates limit attainment, it is reasonable to ask why speakers did not simply choose the prefix *про-*, since *про-* also indicates that some amount of action occurred, but always indicates limit attainment. There are, indeed, instances where *про-* is used as a neutral perfective partner of unprefixed verbs in which it is perhaps impossible to recover any difference between forms, other than aspect (*читать*^{I}/*прочитать*^{P} 'to read'). In such cases it seems that either prefix would have been possible. In the case of *читать*, the frequency and usefulness of the delimitative interpretation may have influenced the choice, since *читать* may be either telic or atelic. In other cases, features

or inferences associated with *про-*, or metaphorical uses based on them, may make it unsuitable for neutral perfectivization. (For instance, *про-смотреть* 'to see through,' or cases where the inference of thoroughness associated with the <+contain> feature of *про-* emphasizes the intensity of the activity or implies that it was something of a feat, etc.) These observations serve as a reminder that the features associated with *по-*, <+contact> and <+contour>, are the least informative and most redundant features, generating little in the way of inferences which might compete with neutral perfective forms. Thus, *по-* often indicates that the verbal action is carried to its specified limit according to its own, natural contours, and nothing more. In this way *по-* is perhaps the prefix most suited to indicating nothing more than perfective aspect, since carrying out the action according to the natural contours of that action until an inherent limit is attained gives precisely the notion *perfective*.

5.5.6 Verbs of motion do not behave like typical telics with *по-*

The situation is different for verbs of motion, where the interpretation of *про-* is usually a more neutral traversal of space through the entirety of the explicit trajectory. Although *по-* often and quite naturally indicates that an action is carried out to some limit with many telic verbs, for motion verbs this would lead to complete synonymy with the prefix *про-*. (The contact/containment distinction would not prevent complete synonymy, since in both cases the prefix trajectory is aligned with the explicit trajectory and this is equivalent to the path in space. Motion in space is then easily realized as either containment in three-dimensional space or contact with some surface for motion. Thus, the original contact/containment distinction is of little significance.)

Having recognized this potential synonymy of *по-* and *про-*, it is not difficult to explain the motivations for equating the prefix trajectory with the entire explicit trajectory for *про-*, and equating the prefix trajectory with only a piece of the explicit background trajectory for *по-*. It was pointed out in Section 5.4.2 that on an inferential level mere contact with an entity is a less involved interaction than containment within it. Thus, if one prefix is to designate a more thorough involvement between trajector and landmark (i.e. full equivalence along the extent of the trajectory), the containment prefix would be expected to do so. This amounts to a contrast between the inference of *superficiality* associated with *по-* and the inference of *thoroughness* associated with *про-*. Furthermore, in Section 5.4.3 it was pointed out that while *по-* and *про-* are both theoretically <±span>, the <+span> situation is the norm for *про-*. In motion contexts, then, *про-* is the natural choice for expressing completion of the full extent of a trajectory, whereas *по-* frequently expresses only partial completion.

Just as *по* does not preclude the spanning of a landmark, the prefix *по-* with motion verbs does not preclude the possibility that the entire explicit trajectory has been traversed; it simply does not make a commitment to that. For instance, given the statement *он поехал в Москву* 'he set out for Moscow,' it is quite possible that the trajector has completed the background trajectory and is now in Moscow. The speaker, however, either does not know this, considers it irrelevant, or the status of the TR will be resolved in the next narrative segment. These particular inferences regarding speaker knowledge or attitude are often useful precisely in situations involving motion.

Furthermore, when *по-* is used with verbs of motion in contexts where there is clear goal attainment, *по-* indicates goal attainment without focusing on the extent of the trajectory itself, since *по-* says nothing more than that the action was carried out to the specified limit. *Про-,* in contrast, always focuses attention on the extent of space covered.

Finally, we must account for the additional step whereby *some amount of motion towards a goal* comes to indicate primarily inception with determinate verbs of motion. This is perhaps largely due to the semantic range of other prefixes and was alluded to in Section 5.3.3; the prefix *за-*, which is the most common prefix for indicating inception in Russian, is used in its basic spatial sense with determinate verbs of motion, as well as abstractly to indicate a deviation in terrain or direction, and is thus not available to indicate inception (cf. *за-йти* 'to go behind, to become inaccessible'; 'to enter'; 'to make a side trip,' etc.). Thus, with motion verbs *по-* assumes an abstract function, indicating that some (usually less that full) extent of a trajectory is traversed. This distinguishes it from *про-* and allows it to fill a semantic gap precisely where *за-* cannot indicate inception, since *за-* subserves other functions.

5.5.7 Contrast in the quantifying functions of *по-* and *про-*

As previously noted, although the prefix *по-* in its delimitative function profiles a trajectory of arbitrary length, it often carries the additional connotation that a small quantity of action was performed. It was suggested in Section 5.3 that this interpretation arises primarily through contrast with the prefix *про-*. The <+contact> feature, when contrasted with the <+contain> feature, generates the inference that the action was superficial in nature, therefore not extensive. This results in an interpretation of temporal brevity for atelic actions. Similarly, it was noted in the previous chapter that with atelic verbs the prefix *про-* may sometimes indicate a subjectively long temporal span. The <+contain> feature suggests extensive involvement with the landmark and generates the inference of *thoroughness* of the action (which suggests a greater commitment of resources, including time, to the action in question).

In addition, it has been suggested that in contexts where the two prefixes might otherwise appear synonymous *про-* has taken on a <+span> interpretation (i.e. that the action reaches its inherent limit), whereas *по-* has assumed a <-span> interpretation. For atelic actions the limit is some standard amount of time that a TR might be expected to engage in some action. In this case *про-* does not indicate a long temporal span, since it can only indicate attainment of the norm. In fact, *про-* perhaps acquires the sense of a subjectively long period of time primarily because the temporal span must be stated explicitly, and this is generally done only when it is unusual in some way. If it were an unusually short temporal span, the prefix *по-* would be more appropriate. Thus, the prefix *про-* is left with longer-than-usual temporal spans by default. The same argument can be made in non-temporal quantifying uses of *про-*. With verbs of motion, for example, it is common to see examples of the prefix *про-* with distances, such that the focus seems to be on the great extent which was covered:

(18) Он про-бежал целых двадцать километров[†]
He ran (through) the whole 20 kilometers

Nevertheless, consultant responses to the films make it clear that, in and of itself, *про-* does not carry any evaluative connotation of great quantity:

(19) Собака... про-шла несколько шагов
The dog took (walked through) several steps

In the data, trajectories for *про-* were quite comparable with trajectories for other prefixes, and in all cases the trajector completely traverses the trajectory. The difference is simply that by equating the trajectory to some landmark (background trajectory) in its entirety, *про-* may use the landmark itself to evaluate the extent (quantity) of the verbal action. Thus, the actual quantity indicated by *про-* depends wholly on the landmark itself and is not an inherent part of the prefix prototype structure. Both prefixes thus acquire their tendencies to indicate a small versus large quantity primarily through contrast with one another.

5.5.8 Inference and submeaning: the <direct>/<contour> distinction

5.5.8.1 *пере-* 'repeat' vs. perfective *по-*

One particularly interesting example of how inferences based on the spatial prototype features affect the extended uses of prefixes is provided by the *repeat* submeaning of *пере-* in contrast with *perfective по-*. Both of these prefixes are Path prefixes which must have telic base verbs in order to be interpreted as the *repeat* and *perfective* submeanings respectively:

(20) a. Рабочие по-строили[P] дом[†] vs. b. Рабочие пере-строили[P] дом[†]
The workers built the house *The workers re-built the house*

We have seen that the <+contact> and <+contour> features of the prefix *по-* suggest that the action (here: *строить[I] дом* 'to build a house') occurs according to the inherent properties and parameters of that action. Thus, some amount of action occurs in accordance with the constraints (i.e. the contours) of the predicate. In the case of telic verbs, action usually progresses to the inherent limit, thus the action is completed from beginning to end and the *по-* prefixed form is interpreted as a perfective.

In Chapter 4 it was claimed that the <+contact> and <+span> features of the prefix *пере-* in the *repetition* submeaning indicate that the named action progressed from beginning to end, thus indicating that the action has been repeated. In actual fact, there is nothing in these two descriptions which could differentiate the prefixes *пере-* and *по-*. Why, then, does *пере-строить дом* not produce a plain perfective interpretation, or *по-строить дом* produce the interpretation 'to re-build a house'?

The difference in the interpretation of these two prefixes arises from the primary distinguishing features posited for these morphemes, <+direct, +span> (*пере-*) and <+contour> (*по-*). In Chapter 2 it was noted that as a <+contact, +contour> preposition,

по indicates that the trajectory is spatially restricted by the landmark in both vertical and horizontal dimensions. In this regard the preposition is considered LM-centered; it is at one extreme on a spectrum of balance of power between the trajector and the landmark, such that the landmark fully determines the contours of the trajectory.

Пере- lies at the other extreme. Although the trajector is constrained by the landmark in some way (<+contact>), because the route is <+direct, +span> the trajector exerts more control over the interaction -- it may span the landmark in any of a number of ways. There is no single contour which guides the trajector and determines the path across the landmark, thus the action is considered TR-centered. Given a single spatial landmark, such as a stretch of road, the expression *много людей прошло по этой дороге* 'many people have passed along this road,' implies that each trajectory is the same, an instantiation of some eternal contour. In contrast, in the expression *много людей пере-шло эту дорогу* 'many people have crossed this road,' despite the sense that each trajectory shares certain common properties, each one may also be quite individual, occurring at different points along the road, cutting across it at slightly different angles, etc.

This simple spatial example suggests that these prefix features have led to an inference concerning the universality or individuality of the trajectories they describe. In other words, *по-* incorporates into its network an interpretation of the landmark contour as a sort of eternal template rather than the concrete, individuated landmark suggested by *пере-*. In these submeanings (*пере-* 'repeat' and perfective *по-*) the prefixes are abstract. Instead of referring to concrete landmarks, the prefixes comment on the verbal action itself. In this case, the LM-centered nature of the prefix *по-* means that the action (building a house) proceeded according to the constraints on that action. In Section 5.5.2 we saw that this generates the inference that the action is not in any way unique, but proceeds like every other action of that sort. Thus, the action will be interpreted as a single instantiation of a kind of eternal potential action-contour (building *any* house).

When *пере-* functions abstractly, such that semantic features apply to the predicate, the predicate itself will be interpreted as a concrete instantiation of the action (building *this* house). In other words, the focus on the trajector endows the action with a concrete, individuated existence. (In Chapter 6 this will be referred to as an EVENT CONSTRUAL of the base verb). Proceeding from beginning to end (<+span>) of an actual concrete action (i.e. an event) indicates that the action is repeated. Thus, the prefix indicates that the action is a replay of something with many potential realizations, which has already been realized once in a particular way. The original trajectory has an independent existence and the action can be repeated in a multitude of new ways. Since the second action need not be identical to the first in all of its details (there are many ways to span a landmark), *пере-* 'repeat' may imply that the second action was performed in a slightly different way, frequently with the intent of improving upon the first action. This improvement, or change, often becomes the primary meaning of the expression, rather than repetition per se (*пере-лечь* 'to lie down somewhere else'; *пере-шить* 'to alter (by sewing)'; *пере-думать* 'to change one's mind.')

5.5.8.2 *По-* vs. *пере-* with multiple landmarks/trajectors

The individuation of actions associated with *пере-*, and the lack of individuation associated with *по-*, also accounts for the difference between *по-* and *пере-* with multiple trajectors and/or landmarks:

(21) a. по-падать	vs.	b. пере-падать
to fall (of a number of objects)		*to fall one after the other*

Although these verbs are very close in meaning, *пере-* tends to emphasize the individuation of the subevents, whereas *по-* emphasizes the identity of the action contour for all trajectors. (The successive interpretation itself is a result of the presence of multiple landmarks and trajectors and is not relevant to prefix semantics.) Successive and distributive uses of *по-* are thus simply normal perfective interpretations of an event affecting many trajectors or landmarks. Similarly, successive uses of *пере-* are normal instances of the repetition submeaning applied to multiple trajectors, indicating that a concrete action has been repeated multiple times by different trajectors, each with an individuated trajectory.

Despite these differences in the distributive use of *по-* and *пере-*, it is also clear that they overlap to a great extent in contexts which require a successive interpretation of subevents. At the root of the distinction between these prefixes is the individuated vs. unindividuated interpretation of the trajectory itself. In one case (the prefix *по-*), each subaction is construed as possessing *the same basic contour* as other subactions, whereas in the other case (the prefix *пере-*) each subaction is construed as distinct and individuated, thus *not identical* to other subactions. In this way, both *по-падать* and *пере-падать* indicate that multiple trajectors fall, but for *по-падать* each trajector is participating in an identical kind of action and there is not necessarily a spatial or temporal progression of trajectors, whereas for *пере-падать* each falling event is a repeat of a previous concrete event, and thus there is a successive order in which these events occur.

5.6 The *по-* schema and inference with verbs of motion

5.6.1 Inference and intention with determinate verbs of motion

Since *по-* profiles the initiation of a trajectory with determinate verbs of motion, in this study *по-* is specifically suited to trajectories with a final portion which is vague or unknown to the speaker and, more generally, where the outcome of the traversal of the background trajectory is unknown (to the speaker). Thus, the prefix *по-* is used when it is unclear whether or not the goal of an intended trajectory has been (or will be) attained. (*По-* is also likely to be used when goal attainment is irrelevant, i.e. the primary information content is that the trajector is no longer at the source point.) Notice that if the goal point is known to be attained (and is relevant), a different prefix will be selected to indicate this:

(22) a. Он по-ехал в Москву†
He set out for Moscow
(explicit trajectory has been initiated; goal has not necessarily been attained)

b. Он при-ехал в Москву†
He arrived in Moscow
(explicit trajectory is completed; goal is attained)

(Recall that for *по-* the explicit trajectory represents the landmark according to which the prefix trajectory is evaluated, and not the prefix trajectory itself; thus, *по-* still indicates complete traversal of its own trajectory and a perfective event.) The statements given above concerning trajectory completion and goal attainment represent inferences generated by the prefix schema for verbs of motion. *По-* generates one or another of the following inferences, depending on observer relation to the context: (i) The trajector has initiated motion on the explicit trajectory but has not completed the trajectory and is therefore still in motion (i.e. trajector within observer domain); (ii) The trajector has initiated motion on the explicit trajectory but the observer has no way of knowing whether or not the trajectory has been completed (i.e. trajector not within observer domain); (iii) The trajector has set out on the explicit trajectory and therefore is not present at the source point (i.e. completion of the explicit trajectory is not relevant, trajector not within observer domain).

All of these inferences may serve as the primary contextual meaning of the *по-* prefixed form, and they all share another common inference, namely, that the trajector is expected, eventually, to traverse the (entire) explicit trajectory. In the case of animate trajectors, this expectation of (eventual) traversal of the background trajectory translates to an intention to traverse it and is an effect of the necessary existence of a background trajectory. Put another way, *по-* with determinate verbs of motion indicates that a figure intends to reach a goal, towards the attainment of which the figure has taken at least some portion of the necessary action. The inference that the trajector intends to traverse a trajectory (which, perhaps, has been merely initiated so far) is important in the usage of *по-* in the future tense.

5.6.2 Intention and the future

This intent which is automatically implied by the use of the prefix *по-* is particularly relevant in the future tense, where, in fact, action has not yet been initiated. The following sentence in no way indicates only that the trajector will set out on the intended course, but rather that s/he intends to complete it (in the future):

(23) Завтра я по-йду в кино†
I will go to the movies tomorrow

This apparent indication of future completion of the entire explicit trajectory differs little from unprefixed determinate verbs of motion in the future tense, and in this case the *по-* prefixed forms do indeed seem the obvious candidate for the neutral perfective form of the determinate verbs of motion:

(24) Завтра я буду идти в кино†
I will be going to the movies tomorrow

It is generally agreed that the difference between the *по-* prefixed form and the imperfective future (of the determinate verb) in such examples as (23) and (24) is that the former focuses more on an intention to perform the action (e.g. intent to traverse the entire explicit trajectory), whereas the latter is more nearly a basic statement of fact about what will occur in the future.

Of course it is never possible to predict the future with complete certainty, and it is quite common cross-linguistically to express the future tense with a form that originally implied an intention or wish to perform an action (cf. English *will*). Thus, in addition to the fact that perfective present forms typically indicate future tense in Russian, the *по-* prefixed form is particularly suited to do so, as it implies an intention to traverse the named trajectory. The future tense usage of *по-* prefixed forms, then, does not always indicate inception itself (although it may, cf. *Я по-йду ровно в шесть часов* 'I will go (set out) at precisely six o'clock'), but rather the inference which the inceptive configuration generates: that the trajector intends to perform the action.

In this case *по-* prefixed forms are quite close to acting as neutral perfectives for determinate verbs of motion in the future tense, since the inference of intent applies to the entire explicit trajectory, not merely a portion of it. Nevertheless, the synonymy is not complete and *по-* prefixed forms do have an underlying semantic structure which is different from determinate verbs here (i.e. they do not differ solely on the basis of aspect, but also according to an inferentially generated feature). It is this difference which gives the *по-* prefixed forms the nuance of intent to perform an action which is not present in the unprefixed imperfective future tense forms.

5.7 *По-* PERFECTIVES COMPARED TO DETERMINATE VERBS OF MOTION

5.7.1 Differences in the prepositional phrase profile

По- prefixed verbs of motion occurred with a significantly higher percentage of Goal prepositions than unprefixed determinate verbs of motion, whereas the latter occurred with more Path prepositions. It is probable that multiple factors are responsible for the observed differences in percentages of Path and Goal prepositional phrases for determinate verbs of motion and *по-* prefixed forms. The existence of a background trajectory and the implication of trajector intent to traverse it that is associated with *по-* prefixed forms would be expected to increase goal focus, and thus goal defined trajectories. In contrast, a common function of determinate verbs of motion is to define a background state of affairs. Establishing a background (inertial) state puts the ground of motion in focus, since the goal/intent of motion is not yet evident or known. Prefixes are then introduced precisely in order to refine the directional aspect of motion. Thus, although the speaker does not know how the motion will be directed initially, s/he can immediately comment upon manner and basic terrain (e.g. *идти по дороге* 'to go along the road'). This would have the effect of increasing the number of

path expressions occurring with determinate verbs of motion relative to *по-* prefixed forms.[4]

5.7.2 *По-* perfectives as aspectual partners of determinate Motion Verbs

We have noted that the prefix trajectory for *по-* must be lesser than or equal to the explicit background trajectory. In contexts where *по-* perfectives clearly indicate that the trajector has traversed the entire explicit trajectory, we are perhaps justified in considering them to act as neutral perfective partners for determinate verbs of motion. This might occur, for instance, in past tense narration, where further elaboration makes it clear that the goal was attained (*После работы она сразу по-ехала на вокзал и купила себе билет на ночной поезд*† 'After work she immediately went to the train station and bought herself a ticket for the night train').

In other contexts *по-* perfectives clearly are not neutral aspectual partners for determinate verbs of motion. In this study, *по-* prefixed forms are typically inceptives, whereas determinate verbs of motion often merely introduce a background state of affairs. In these cases determinate verbs of motion simply name a directed motion activity or manner of motion (i.e. answer the question *что он делал?* 'what did he do?' or *как она ехала?* 'how did she go?') and thus do not function as imperfective partners of *по-* prefixed forms. Even when determinate verbs of motion are used in a progressive function as part of a narrative sequence and are paired with *по-* perfectives to describe a scene, they do not exhibit a relationship typical of imperfective/perfective pairs:

(25) a. Змея ползла к дереву
*A snake **was crawling** toward the tree*

b. Змея по-ползла к дереву
*A snake **started crawling** toward the tree*

This progressive use of a determinate verb of motion in the past tense indicates that the trajector was somewhere on the named trajectory at a given time in the past. This presupposes that motion toward **a** goal had been initiated and was in progress, and it shares this semantic content with the *по-* prefixed form. Thus, both forms may describe the exact same scenario in terms of trajector location at the moment of speech. Similarly, for both the determinate verb of motion and the *по-* prefixed expression, it is not yet known whether the trajector will complete the explicit trajectory. This kind of synonymy is *not* expected across neutral aspectual pairs, since the perfective should indicate complete traversal of a trajectory and should place the trajector at the goal indicated by the prepositional phrase. In fact, it would seem that in this context *про-* is a

[4] Path expressions are often neutral between directed and non-directed meanings (see Chapter 2, Section 2.2.2). In other words, an expression such as *идти вдоль дороги* 'go along the road' is only formally distinguished from stationary uses by the trajectory of the determinate verb. Thus, where the determinate verb of motion indicates an inertial state, the path preposition is indicating something closer to a stationary locus wherein (directed) motion is occurring. In fact, determinate verbs of motion are quite ambiguous in this regard. In contrast, prefixed forms highlight completion of a trajectory and therefore do not lend themselves to static interpretations.

better candidate for a neutral perfective partner, since it has precisely the kind of relationship to determinate verbs of motion that is expected of aspectual pairs:

(26) a. trial 1: Из тарелки выходит человечек, идет к сопке, взбирается на нее...
*A little man is getting out of the (flying saucer), he's **going over to a volcano**, he's climbing on it...*

b. trial 2: Из корабля вышел человечек, про-шел к сопке, влез на нее...
*A little man got out of the (space) ship, **went over to the volcano**, climbed on it...*

The determinate verb of motion here indicates progress toward a goal, whereas the *про-* prefixed form indicates goal attainment.

Thus, determinate verbs of motion and *по-* perfectives in this study most often exhibit a kind of inferential synonymy that is typical of Aktionsart perfectivization. It is also the case, however, that *по-* prefixed forms sometimes refer to the entire explicit trajectory (particularly in the future tense and the infinitive), as is often the case with *по-* perfectives in non-motion contexts. In such cases *по-* is more clearly a neutral perfective for determinate verbs of motion. Thus, *по-* has two different aspectual relations to determinate verbs of motion: one which behaves like an Aktionsart, or procedural, perfective, and one which is more nearly a neutral perfective.

5.7.3 Type of perfective: base verb and prefix interpretation

This kind of dual perfective functioning of the prefix *по-* is not restricted to motion verbs (although the inceptive use generally is). Many telic verbs do not have any clearly defined inherent limit, despite the fact that they are dynamic (i.e. involve change over time). The delimitative usage of *по-* actually relies on the prefix to provide a limit to a theoretically limitless state or activity. In such cases there is no natural endpoint against which *по-* is evaluated, although, as we have seen, there is a tendency for *по-* prefixed forms to indicate a smallish amount in these situations. Nevertheless, where the background trajectory itself is limitless, *по-* provides the limit (i.e. creates a temporal telicity) and indicates that that limit has been achieved. Thus, the delimitative use of *по-* is quite indistinguishable from being purely perfective with respect to the most obvious telos -- that imposed by the prefix itself. When some other explicit limit is available, the prefix may readily shift to indicate attainment of that limit. This may be seen, for instance, with the verb *по-смотреть*^{P} 'to look at, watch', which encompasses both the perfective and the delimitative usage of the prefix *по-*:

(27) a. Мы смотрели^{I} фильм†
We watched/were watching a movie (telic imperfective)

b. Мы по-смотрели^{P} фильм†
We watched a movie (neutral perfective, indicates completion of telic process)

but:
c. Она смотрела[I] на фотографию[†]
She looked/was looking at the photograph (atelic imperfective)

d. Она по-смотрела[P] на фотографию, и потом поставила ее обратно на стол[†]
She took a look at the photograph, and then placed it back on the table (delimitative perfective)

The neutral perfective use of *по-* may, therefore, be viewed as identical to the delimitative perfective use, except that the arbitrary limit has been made explicit. The inceptive use of *по-*, likewise, may be viewed as identical to a delimitative perfective, except that the arbitrary limit is only part way to some other (implicit or explicit) limit.

As we have seen, the presence of an explicit limit generally provokes a perfective interpretation. With verbs of motion, however, this has been suppressed in favor of the delimitative usage, creating a spatial delimitative use of *по-*. Thus, despite the frequent presence of an explicit limit with verbs of motion, *по-* prefixed forms often indicate only some amount of goal directed action has occurred, and thus the goal directed action itself has merely been initiated. This type of analysis supports the suggestion that for *по-*, at least, the purely perfective function and the Aktionsart usage represent the extreme varieties of a single type of prefix trajectory relation to the background trajectory. In other words, both types of prefixation arise from the same basic structural model. The suggestion being made here is that the most basic meaning of *по-* is simply that some amount of an action has been completed. Whether the interpretation is *perfective*, *inceptive*, or *delimitative* is dependent upon the base verb (and its complements). Telic verbs with clear inherent limits will tend to form perfectives, atelics (which never have inherent limits) will form delimitatives, and telic verbs with ambiguous limits may have both interpretations available (*по-смотреть* 'to look at, watch', *по-краснеть* 'to redden somewhat, to become red'), or may select one over the other (*по-читать* 'to read for a while'). Determinate verbs of motion fall into this last category of ambiguous telics, such that *по-* at times may indicate either *perfective* or that *some amount of motion along a directed trajectory has occurred*. The fact that the latter sense is, in turn, interpreted primarily as inceptive is a development peculiar to verbs of motion which has more to do with systemic factors, such as the unavailability of inceptive *за-* and the usefulness of this interpretation precisely in contexts of motion. This model for the interpretation of the usage of *по-* will be significant in the discussion of Czech *po-* as well.

In summary, although determinate verbs of motion and *по-* perfectives have much in common, there are also differences that are not based solely on aspect. In fact, in some contexts (such as those which occurred in this study) verbs of motion prefixed with *про-* are much closer to a neutral perfective of determinate verbs of motion. In this study *по-* perfectives behave primarily as Aktionsart prefixes with respect to determinate verbs of motion. In other contexts, the two forms are closer to neutral aspectual pairs. In the future tense, for instance, *по-* prefixed forms may differ from determinate forms only by an additional sense of intent associated with *по-*.

5.8 Czech *po-*

5.8.1 Background

The discussion of Russian *no-* suggests that the most basic interpretation of *no-* with verbs of motion is *to move some distance along a path.* It has already been pointed out that this is redundant with the concept of motion through space expressed by the verb itself. Perhaps largely because of this, with verbs of motion *no-* has come to indicate primarily the inception of motion along a trajectory, as well as trajector intention to traverse the named trajectory. With verbs of motion Czech possesses only the future tense forms with the prefix *po-*. Neither past tense forms nor an infinitive exist with this prefix.[5] Furthermore, the future tense forms indicate *only* future tense and must be regarded as aspectually neutral. Thus, *po-* prefixed forms in Czech must be considered integral to the determinate verb of motion paradigm, and the determinate verbs of motion are themselves capable of expressing both aspects.

Bondarko (1961) has found that historically the full paradigm of *po-* prefixed forms for verbs of motion is attested and that these forms are clearly perfective. He also asserts that these forms were used as ingressives (inceptives). Thus he comes to the conclusion that Czech *po-* lost the ingressive meaning and came to indicate merely future tense, although the manner in which this transition might have occurred is not explained. Bondarko also points out that this is consistent with the Czech resistance to using prefixes as ingressives more generally, since Czech *za-* does not (usually) function as an ingressive. (The prefix *roz-* plus the reflexive particle *se* is used in this function in modern Czech. Bondarko states, however, that this was a much later development: cf. *roz-ejít se,* 'to start walking,' *roz-běhnout se*, 'to start running,' etc. The prefix *vy-* may also be used, somewhat idiomatically, to indicate the initiation of motion: *vy-jít/vy-jet na cestu* = *vy-dát se na cestu,* 'to set out on a journey, on one's way'.)

Kopečný (1962a) disagrees with Bondarko's assertion that forms of *po-jít* were at one time clearly perfective and proposes a different aspectual development for *po-* prefixed forms. He suggests that they were never perfective and merely retained the future tense meaning which was possible for all present tense forms before the rise of aspect. Fortunately, the aspectual status of the *po-* prefixed forms does not significantly affect the semantic analysis that will be presented here. Machek (1962) has suggested an alternative view of the semantic development of Czech *po-* prefixed verbs of motion. In his opinion, Czech *po-* corresponds to Baltic *pa-* and indicates an ability to perform an action, which in modern Czech is expressed by the prefix *u-*. He gives the following example as a remnant of this original usage:

(28) a. Do práce budu chodit tak dlouho, dokud mne nohy **po-nesou**†
*I will keep walking to work as long as my legs **can carry** me*

vs.

[5] Infinitive and past tense forms do exist for the colloquial, non-spatial verb *po-jít* 'to die' (primarily used with reference to animals).

b. Vytáh **u-nese** 250 kg[†]
*The elevator **can carry (has the capacity to carry)** 250 kg*

Although the current study is not historical, the evidence provided by modern prefix semantics in Czech and Russian nevertheless suggests something about the historical development of Czech *po-*. Before considering what these implications are, however, it is necessary to look more closely at the use of *po-* in the remainder of the verbal lexicon in Czech.

5.8.2 The semantics of Czech *po-*

As with Russian *по-*, Czech *po-* admits a number of submeanings, or contextual variants, many of which are quite similar to those in Russian. The first meaning listed in most dictionaries and grammars, however, is not typically perceived as a meaning for Russian *по-*. With verbal actions that affect surfaces, *po-* indicates that the action affects (all) of a surface, or covers/coats a surface (*po-lepit* 'to paste over (cover with)'; *po-kreslit* 'to cover something with drawings, to draw all over'; *po-kryt se* 'to get covered (with something), get a coating (of something)'; *po-barvit* 'to paint a surface, to color all over'; *po-cákat* 'to splash all over, bespatter'; *po-chromovat* 'to chrome-plate', etc.). This usage of the prefix *po-* is clearly based on the prototype spatial features <+contact> and <+contour>, since the trajector is in contact with all of the surface contours of a concrete landmark.

This usage of Czech *po-* differs considerably from Russian *по-*. The prefix is not used abstractly to quantify the extent of action, but rather the <+contact> and <+contour> features apply to an explicit, concrete entity. In other words, the prefix *по-/ po-* is spatial (where possible) in Czech, but abstract in Russian. For instance, Czech *po-barvit* 'to stain, color all over (a surface)' indicates that color ends up in a <+contact, +contour> relation with some actual surface, whereas Russian *по-красить* 'to paint, color' indicates primarily that the painting process itself has been or will be completed, although the final result may be the same: in both cases some surface has been covered with color. (Where covering an entire surface is in focus, Russian tends to use the prefix *из-*: *рисовать*[I]/*из-рисовать*[P] 'to draw all over'. The concept of *exhaustiveness* expressed by this prefix is not limited to surfaces, however.) This affinity for abstract prefixation in Russian versus spatial prefixation in Czech has been noted before. Czech *za-* is much more common than Russian *за-* in its spatially derived meaning 'to go out of sight behind an object' and rarely occurs in an inceptive meaning (which requires an abstract interpretation)[6]. Similarly, Czech *pro-* is much more connected to actual spatial containment contexts, whereas Russian *про-* with verbs of motion typically makes reference to an abstract domain which is traversed by the trajector. Czech *od-* and *při-* do not necessarily indicate a domain shift and consequent inferences concerning trajector accessibility, but remain more directly tied to concrete landmarks. Czech *pod-* also retains its spatial meaning of (*motion*) *underneath* a landmark, whereas Russian *под-* has shifted to fully abstract uses with verbs of motion, and Czech *na-* occasionally

[6] A case may be made for a few instances of inceptive *za-* in Czech, e.g. *milovat* 'to love' versus *za-milovat se* 'to fall in love.' See footnote 7.

occurs with verbs of motion to indicate goal contact with a surface. One primary difference between Czech and Russian prefixes, then, is a preference for spatial interpretations of prefix semantic features in Czech, whereas Russian much more readily transposes the associated semantic content of the spatial prototype to abstract realms. This topic will be considered in more detail in the following chapter, but other uses of the prefix *po-* in Czech seem to further support this notion as well.

Czech does have a temporal delimitative sense of *po-* (*po-ležet si* 'to spend some time in bed, to lie down for a little while,' *po-číst si* 'to have a nice read,' *po-povídat si* 'to have a nice chat'), but this usage does not regularly occur with indeterminate verbs of motion in Czech, as it does in Russian (although note older forms *po-chodit si* 'to have a pleasant little walk around,' *po-plavat si* 'to have a nice little swim,' *po-vozit* 'to give someone a little ride (for fun, just for the sake of riding)'). Notice that temporal delimitative *po-* in Czech typically occurs with the dative reflexive particle *si*, which provides a trajector-oriented (subjective) time limit for the activity (usually indicating a degree of trajector satisfaction), such that the time period indicated by the prefix may be considered slightly less arbitrary than for Russian temporal delimitatives. Most indeterminate motion verb roots do not exist in prefixed forms in Czech. Instead prefixed determinates derive separate prefixed imperfective forms. Interestingly, some Czech derived imperfective motion verbs may be prefixed with *po-* and in these cases have spatial, as well as idiomatic, meanings (*po-běhat*, 'to run about/here and there; to bustle about; to gambol, frisk, romp,' *po-letovat* 'to flit/flutter about, here and there.')

The temporal delimitative use and the rather idiomatic uses with derived imperfective verbs of motion given above may be connected via the inference mentioned in Section 5.4.2, namely, that action which takes place on a surface is *superficial*, thus *not serious, not lengthy or goal directed*. Furthermore, the LM-centered nature of *po-* suggests that the direction of motion in this case is *not* based on TR intention. This gives rise to an inference of aimlessness (cf. *po-vozit*, 'to give someone a little ride (for fun, just for the sake of riding)' and *po-běhat*, 'to run about/here and there; to bustle, buzz about; to gambol, frisk, romp,' *po-letovat* 'to flit about, flutter'). Thus, activities may be lacking in purpose (i.e. aimless, not goal directed), temporally superficial, or spatially superficial (i.e. an abstract spatial delimitative interpretation). In this last category fall Czech double prefixed forms such as *po-pojít*, 'to walk a short distance,' *po-odejít*, 'to move a short distance away,' *po-vyskočit* 'to jump up a bit' etc., which are fairly common in Czech.

Notice that Russian does not admit a spatially superficial interpretation with verbs of motion, preferring the inceptive interpretation, instead. Nevertheless, both interpretations easily arise out of the same spatial model. With atelic verbs (temporally unlimited actions), designation of a trajectory of finite length does not necessarily indicate superficiality relative to normal conditions. With telic verbal roots, as we have seen, however, the tendency for *по-/po-* is to indicate attainment of the inherent limit, not delimitation. The latter seems to occur only where there is competition (synonymy) with another prefix, usually with *про-/pro-* (where the <+contact> feature is contrasted with a <+contain> feature, provoking an interpretation of superficiality for *по-/po-*), or where the verbal root may be either atelic or telic and the temporal delimitative usage is common, thus generalized (*по-читать газету*, 'to read the newspaper for a little while').

In instances where *по-/po-* receives a spatial delimitative interpretation, it acquires the additional sense of *a small amount* precisely because the background trajectory is telic and has an inherent limit which has not been attained. For Russian spatial delimitatives a further step occurs; the completion of the lesser prefix trajectory is perceived as the initiation of the larger background trajectory. In Czech this last step does not seem to occur.[7]

In general, *по-/po-* does not inherently designate a small amount of action or movement. When Czech *po-* is used with telic base verbs as a spatial delimitative, however, it positively indicates a small amount:

(29) Chlapec stojí před domem, **po-odešel** od domu a zastavil se
*A boy is standing in front of a house, he **walked a short distance away** from the house and stopped*

It is significant that most spatial delimitative uses of *po-* in Czech are double prefixed forms, such as *po-odejít, po-pojít*, etc., such that the prefixed base verb already indicates attainment of the inherent limit. Thus, the *po-* prefixed forms cannot act as neutral perfectives in such contexts, as the base verb itself is the neutral perfective form. In this case *po-* can only indicate a lesser amount than full attainment, and this is perceived as equivalent to a small amount of the basic action which is named.

5.8.3 Ingressive *по-* versus spatial delimitative *po-*

This spatial delimitative use of *po-* is quite different from the ingressive use in Russian. Ingressive *по-* suggests that the amount of space traversed is a portion of an intended larger, background trajectory, whereas forms like *po-odejít* 'to move a short distance away,' do not indicate any intention to traverse a larger trajectory at all, but only the extent of motion itself. The additional inference that completing some small amount of a trajectory indicates initiation of a larger trajectory is responsible for this difference. The fact that Czech maintains the actual spatial delimitative interpretation, taken together with the fact that Czech *po-* is quite common for designating covering a surface, reinforces the idea that uses of Czech *po-* seem to arise primarily out of the spatial model of contact with the surface of an entity (plus inferences). Russian *по-*, in contrast, seems to arise primarily from the abstract model, which indicates that some

[7] The fact that only a slight difference in construal of the basic model for *по-* and *po-* is responsible for a seemingly significant difference in interpretation is echoed by the use of *за-/za-* in ingressive interpretations in Russian, but only rarely in Czech. In both languages this prefix indicates a change of state and may associate the goal state with *deviance* or *change*. Nevertheless, the interpretation of change as *initiation* of the named activity is prevalent only in Russian. The ambiguity inherent in interpretation here may be illustrated by a few examples. *За-болеть* 'to fall ill' is frequently given as an example of ingressive *за-* in Russian. However, the prefix is ambiguous in the sense that it may mean simply a complete shift into a deviant state rather than the initiation of a process. The only difference between these two meanings is the interpretation of the base verb as a state or a process. If the base verb is interpreted as a process, an inceptive reading is more likely. If the base verb is construed as naming a state, the prefix will be interpreted as a simple perfective (possibly with the added nuance of deviance associated with the final state). In other words, Czech *za-* prefers to treat the base verb as identifying a state, rather than a process.

amount of progress has occurred along a verbal trajectory. Thus, the preference for abstract uses over spatial ones may have predisposed Russian to develop an ingressive interpretation for *по-* prefixed verbs of motion and suggests that Czech may never have done so.

The preference for spatial or abstract prefixation is relevant in yet another way to the question why Czech did not develop an ingressive interpretation (or conversely, why Russian did). It was previously suggested that Russian *по-* with verbs of motion took on a delimited sense with regard to the explicit trajectory (and hence an ingressive interpretation) due to its basic synonymy with *про-*, which indicates full traversal of the explicit trajectory, since elsewhere, where an explicit limit is available, *по-* indicates limit attainment. Since Czech *pro-* and *po-* more typically have spatial interpretations, the two forms do not have potential synonymy in quite this same way. *Pro-* with motion verbs indicates passage through a container, and *po-*, theoretically, would indicate passage along a surface. Thus, these forms are synonymous in abstract uses (i.e. when *po-* or *pro-* is acting as a neutral perfective form for a determinate verb of motion), but not in spatial uses. *In spatial uses, the synonymy is between the po- prefixed forms and determinate verbs of motion.* Thus, Czech *po-* prefixed verbs of motion would not be fully synonymous with *pro-* prefixed forms. The ingressive interpretation in Russian was presumably motivated precisely by this synonymy within the motion verb system. There is, then, less reason for Czech *po-* to acquire an interpretation of *less than the entire explicit trajectory* and/or *inception.* (As noted in Section 5.5.6, the ingressive interpretation in Russian may also have been partially motivated by the unavailability of inceptive *за-* precisely in the context of motion. This motivation is not present in Czech. Presumably, then, there is no perceived semantic gap with respect to inception of motion in Czech, as there would be in Russian.)

If the analysis given here is correct, this would suggest that Czech never developed an ingressive *po-*. Instead, a *po-* prefixed determinate verb of motion would act like other telic verbs which may or may not have an inherent or explicit limit (cf. Russian *по-смотреть*; see Section 5.7.3 above.) Thus, *po-* prefixed forms would either designate complete traversal of the explicit trajectory when an inherent limit is present (and hence be a plain perfective) or could mean *to cover some (arbitrary, not explicit) amount of ground* when no inherent limit is present. In either case there is no background trajectory that would allow the development of an ingressive interpretation. It is thus possible that with goal prepositional phrases Czech *po-* prefixed forms were simply neutral perfectives of verbs of motion, indicating goal attainment. With path prepositional phrases such forms indicated merely that some amount of ground (spacc) is traversed. This last sense, as has been pointed out repeatedly, is highly redundant with the concept of path, or motion through space, and it is easy to see why such a form would not be maintained. Thus, *covering some (indefinite) amount of ground/space* (which is not part of a larger trajectory) in the past tense is easily expressed by the determinate past form alone. Similarly, covering some amount of space in the future is indistinguishable in meaning from a determinate verb form in the future tense. The analytic future tense forms of the determinate verbs, however, appear to have been dropped in favor of the *po-* prefixed form. This form would not be expected to have any nuance of intention to perform an action, as it does in Russian, since the notion of intent

arises out of the ingressive sense of *по-* (i.e. a version with a background trajectory). In fact, Czech future tense forms with *po-* are not associated with a sense of intention (above and beyond the extent to which all statements regarding future actions of animate beings indicate intent).

There is some evidence for this interpretation of Czech *po-* in the double prefixed form *po-po-jít* 'to move a short distance,' which preserves the non-existent **po-jít* as a base verb. Prefixation of a form that already indicated a small amount of action or inception of an action to indicate a (further) diminution of action is highly unlikely (cf. 'to do a small amount of setting out, to do a little of a small amount of walking'). This form suggests that **po-jít* itself must have indicated an ordinary degree of motion -- either the full extent, or some (spatially delimited, but not inherently small) amount. The double prefixed forms show more generally that Czech is quite capable of developing a delimited use with a background trajectory (telic base verb), without developing an ingressive sense (e.g. *po-odejít* does not mean 'to start leaving.')

One may ask why the plain perfective interpretation was not generalized and maintained instead. Apparently this form is not sufficiently useful to be maintained either. As was suggested for Russian above, this may be due largely to the presence of *pro-* in Czech. Although the spatial interpretations are often favored in Czech, we have seen that Czech *pro-* also generalizes to space itself. When coverage of the full extent of some trajectory is in focus, *pro-* is a more natural choice than *po-*. When goal attainment, rather than the full extent of motion, is in focus, a goal prefix such as *při-* or *do-* is preferable. There is evidence of this synonymy in the existence of the prefixed indeterminate form *po-chodit* in the (spatial) meaning 'to have walked about the whole place, taken every path' (more or less equivalent to Russian *про-йтись*). This form is analogous to other verbs in Czech which denote *complete covering of a surface*, and, appropriately, this meaning is generated in combination with the indeterminate verb of motion (i.e. it is a perfective form for motion which occurs in multiple directions rather than along a single directed trajectory.) The *Slovník českých synonym* gives *pro-chodit* 'to walk all around, about a place' as the primary synonym for *po-chodit*, verifying the semantic overlap of these prefixed forms.

Thus, one possibility is that Czech *po-* never developed an ingressive interpretation. This fact would then, in all probability, be responsible for the loss of the *po-* prefixed verb of motion paradigm in Czech. In the absence of an ingressive interpretation, the *po-* form contributed little in the way of semantic content to determinate verbs of motion. Although Bondarko claims that usage of *po-* prefixed motion verbs was, in certain contexts, clearly ingressive, none of the contexts he cites can be unequivocally labeled as such, and all are compatible with the interpretation suggested here, namely, that some amount of space has been traversed. While this suggestion is highly tentative at best, it seems at least worth considering. Furthermore, the notion of *ability to perform an action* suggested by Machek as the original meaning of *po-* is quite compatible with this interpretation as well. In this case the inherent limit on *po-* is present and defined according to trajector ability (see example (28)). Defining an inherent limit according to some aspect of the trajector itself is also well attested in Czech from the temporal delimitative forms with *si*, indicating that a degree of satisfaction has been attained.

The claim made here is that, where possible, Czech *po-* tends to derive its semantic content from the spatial, rather than abstract, interpretation of the prefix and is thus resistant to an ingressive interpretation. As with Russian, Czech *po-* prefixed verbs of motion were redundant with *pro-* prefixed forms in some contexts. In others they were redundant with determinate verbs of motion. In the absence of an ingressive sense, then, these forms were lost in favor of the determinate verb of motion itself. The fact that the future tense forms with *po-* are maintained as a normal part of the determinate verb paradigm serves as further evidence that the determinate forms and *po-* prefixed forms were felt to be synonymous. Although Czech *po-* did not develop an abstract interpretation with verbs of motion, it certainly admits abstract interpretations in contexts where spatial distinctions are not relevant. In such cases Czech *po-* behaves much like Russian *по-*, and the resultant interpretation is simply perfective (*po-stavit*, 'to build,' *po-chválit*, 'to praise' etc.).

5.9 Summary

This chapter has demonstrated that the prefix *по-/po-* shows traces of its basic character as a Path Contact prefix which is also <+contour, ±span>. In Russian, however, the prefix is generally not used in its spatial meaning, even in spatial contexts (including with verbs of motion), largely because of its redundancy. Instead it is used abstractly, taking on a perfectivizing, temporal delimitative, or (with verbs of motion) ingressive function. All of these functions arise from the same basic interpretation of the prefix as indicating that some amount of action has been completed according to the constraints of that action, but the interpretation varies depending on properties of the base verb itself. Thus, with telic actions with inherent limits *по-* usually indicates that the action has reached that limit. Atelic actions (and sometimes telics with no clear, inherent limit) with *по-* will produce delimitatives, simply indicating that some amount of the action took place. Verbs of motion prefixed with *по-* generate a special case of this last interpretation: that some amount of action took place along a larger trajectory with an inherent limit, and thus that the (larger) trajectory has been initiated.

Czech *po-* seems to rely more on a spatial interpretation of the features <+contact, +contour>. Perhaps largely due to this fact, it did not survive as a prefix with determinate verbs of motion and may never have developed an ingressive interpretation. When *po-* does occur in abstract uses with a background trajectory in double prefixed forms, the interpretation is an absolute indication that a small amount of the action has occurred, not one of inception. Otherwise, Czech *po-* behaves similarly to Russian *по-*, forming both neutral perfectives and temporal delimitatives.

Chapter 6. Conclusion: spatial and abstract prefixes

6.1 Prefixes and prepositions are systematic

This study has demonstrated the systematic nature of spatial semantic oppositions present in the Czech and Russian inventories of prefixes and prepositions. By examining the interaction of moving trajectors with certain LM types in space, we find a small number of features suffices to distinguish the most basic spatial meanings of many prepositions and prefixes. Each preposition or prefix expresses one of the spatiotemporal features, <source>, <path>, or <goal>, which indicate whether a given relation of trajector and landmark holds at the source, path, or goal point of motion. The trajector/landmark relation which occurs at the source, the path, or the goal point is specified by the spatial features <proximity>, <contact>, or <contain>. <Proximity> is defined as the presence of a close spatial relationship between the TR and LM which does *not* involve contact between the two. <Contact> indicates that the TR and LM physically touch each other, and that the landmark serves as a support surface for the trajector. <Contain> refers to the containment of the trajector within a (usually) three-dimensional landmark, such that the TR is bounded by the LM on all sides. The spatial prototype of prefixes and prepositions is always defined by at least one spatiotemporal feature and one TR/LM relational feature.

In addition, for prefixes and prepositions expressing the <path> feature, we must include another spatial feature specifying trajectory orientation with respect to the landmark. Path prefixes are more complex because the TR/LM relation occurs over an extent of space and time. This means that the TR/LM relation is not static and there are several possibilities for the evolution of that relationship. Trajectory orientation features include <direct> (plus the implied, and often more prominent, feature), <contour>, or <encircle>. <Direct> refers to a trajectory which passes across the landmark in a direct line. <Span> refers to the side-to-side movement of the trajector across the landmark which results from the direct trajectory. <Contour> refers to a trajectory which is guided by the contours of the landmark itself. <Encircle> specifies a trajectory which partially or fully encircles the landmark. The interaction of these spatiotemporal and spatial features accounts for the oppositions which distinguish the inventory of primary prepositions and prefixes in Czech and Russian. The organization of these features exposes the systemic logic of the spatial prototypes of these morphemes.

From this system a typology of spatial prefixes was proposed, with Source, Path, and Goal prefixes identifying major prefix types. Each type could then be further subdivided into prefixes which function primarily as Proximity, Contact, or Containment prefixes in space. The Source, Path, or Goal classification of a prefix is considered more basic, since spatiotemporal features are relevant in abstract (non-spatial) uses. In contrast, the purely spatial notions of proximity, contact, containment, direct, span, contour, and encirclement do not apply in abstract uses and disappear in many spatial uses as well. (The disappearance of these distinctions in spatial contexts can be readily accounted for in prototype theory, since no particular set of features must be present in any given instantiation of a category.)

Semantic features of the spatial prototypes for Russian and Czech prepositions/prefixes

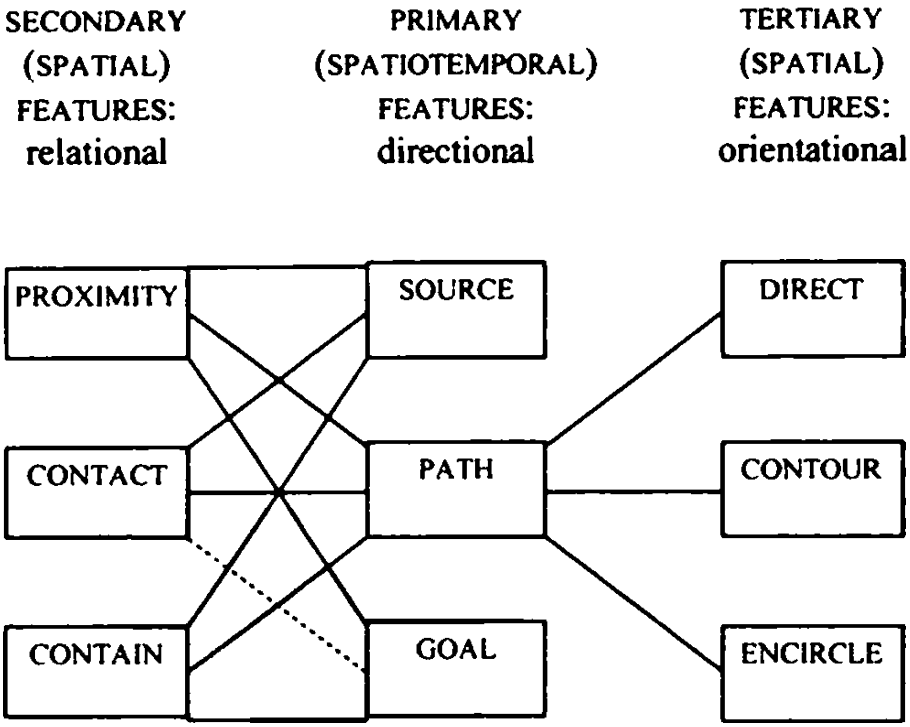


Figure 6.1. Lines connect features which co-occur to define a preposition or prefix morpheme. Dotted line indicates that these features co-occur only for prepositions.

Table 6.1. Typology of prefixes and prepositions in Russian and Czech

SOURCE	PATH	GOAL
PROXIMITY *от, от-;* *od, od-*	PROXIMITY DIRECT *мимо, (об-); kolem, ob-* CONTOUR *вдоль, об-; podél, ob-* ENCIRCLE *вокруг, об-; kolem, ob-*	PROXIMITY *к, под-;* *k, při-*
CONTACT *с, с-;* *z, s, s-*	CONTACT DIRECT *через, перс-; přes, pře-* CONTOUR *по, (по-); po, po-* (ENCIRCLE) *вокруг, об-; kolem, ob-*	CONTACT *на, (за-);* *na, (vy$_2$-)*
CONTAIN *из, вы-;* *z, vy$_1$-*	CONTAIN DIRECT *сквозь, через, про-; skrz, INSTR, pro-* (CONTOUR) *по, над, под, про-; INSTR, pro-*	CONTAIN *в, в-;* *do, v-*

Note: Not all combinations are instantiated as independent morphemes, especially among prefixes.

The basic spatial features of a prefix prototype may themselves produce inferences and experiential or metaphoric associations which are then incorporated into the extended semantic network associated with the prototype. These associated features often assume priority over the original spatial feature(s), especially when spatial relations are retrievable from context. Associated features replace spatial features entirely in abstract uses.

A simple example of an associated feature which dominates over primary features at the spatial level is provided by the interaction of the <direct> and <contact> features of the Path prefix *пере-/pře-*, and Path prepositions *через* and *přes*, to suggest a spanning of the landmark. Side-to-side movement across a landmark is the implied result of a direct trajectory, but it becomes prominent only in the presence of the <+contact> feature. The contact between TR and LM, and especially the contact between TR and surfaces contiguous with the LM on either side of it, highlights the crossing of the actual physical boundaries, or sides, of the landmark. This <+span> feature is then incorporated into the prototype and often takes priority over the original <+contact> feature. Thus, the preposition *через* and the prefix *pře-* may be used in situations of proximity, contact, and containment, since the <+span> feature is in focus. In a similar fashion, the inference of accessibility associated with the <-contain> status of the trajector at the goal state for the prefix *вы-/vy-* leads to the inclusion of the features <+accessible, +goal> in the semantic network. These features then assume priority over the original <+source, +contain> designation, such that there may be no actual containment relation involved:

(1) вы-ставить вино на стол
*to put wine **out** on the table* (thus making it accessible, but not necessarily bringing it out of a container)

Such examples demonstrate that despite the primacy of the <source>, <path>, <goal> features, this distinction itself is by no means inviolable. Inferences concerning the consequences of an action tend to focus attention on the result, or end state, of the action. This concern with the outcome of an action (referred to as the goal orientation of language in Chapter 3) has the effect of neutralizing the source/path/goal distinction among prefixes, effectively converting them all to Goal prefixes. This process will be examined in more detail below.

6.2 Dismantling the typology

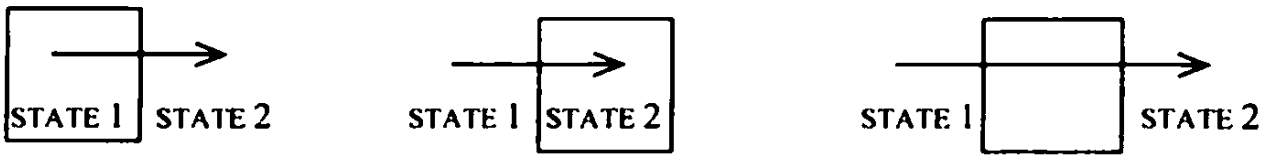
6.2.1 All prefixes share an abstract source-path-goal schema

Now that a typology for spatial prefixes has been proposed, it is necessary to dismantle it. The validity of this typology is restricted to a subset of spatial uses. In many spatial and all non-spatial (abstract) uses, the proposed semantic features are not recoverable. The reason for this is simply that most of the features of the spatial prototypes -- <proximity>, <contact>, <contain>, <direct>, <contour> and <encircle> -- are purely spatial features which cannot have direct application to abstract actions unless they are metaphoric (i.e. it does not make sense to speak of proximity or contact

distinctions with respect to speech acts or thoughts, unless it is metaphoric proximity or contact). It will be argued shortly that prefixes are not typically metaphoric. (Even if one chooses to view them as metaphoric, the spatial distinctions themselves do not participate in the metaphoric mapping. Primarily inferences and experiential associations appear to be mapped from spatial to abstract domains. See footnote 2 in Section 6.5.2 below.)

The <source>, <path>, and <goal> features, however, are spatio*temporal* features, and this means that they are equally relevant to concrete and abstract actions. The spatial realization of these features as a reference to source location, path location, or goal location is only one possible interpretation. In abstract uses they define temporal points in the course of an action, namely, beginning, middle, and end. These temporal points are associated with particular (world) states which obtain at the beginning, middle, and end of the action, such that prefixes comment on the world state in relation to the named action. The temporal interpretations of these features (i.e. start, middle, and end of an action) are applicable to all uses of prefixes and cannot be considered experientially less basic or derived from the concept of spatial location (although the two are clearly experientially correlated). For this reason I use the term source, path, or goal *state* (rather than *location*), as it is inclusive of abstract uses as well as spatial ones. The spatial prototypes of individual prefixes, as we have seen, arise from the interaction of these spatiotemporal features and the purely spatial features.

If the spatial features are absent in abstract uses, the only remaining distinctions in the typology are maintained by the <source>, <path>, and <goal> features. These three features share one basic property -- they each define two points in time, or states, separated by a boundary:



a. Source prefix b. Goal prefix c. Path prefix

Figure 6.2. Abstract prefix schemata. a, b. LM defines a boundary, therefore a Source or Goal prefix can act like a Path prefix. **c.** LM defines two states, therefore a Path prefix can act like a Source or Goal prefix.

All three of these diagrams may be summarized by the following simplified diagram:

Figure 6.3. Shared abstract prefix schema.

This observation is linked to inference and goal orientation. Goal orientation suggests that the primary function of a given segment in narration is to present the situation that is currently relevant and/or to set the stage for the next narrative segment. The relevant information in such an utterance, then, is the (world) state which obtains at the end of an action. For this reason, the significance of an utterance describing an action often lies in the consequences or implications of the named action, not in the action, per se. When a logical inference (or experiential association) concerning the consequences of an action becomes the primary meaning of the prefix in an expression, this new semantic content of the prefix is almost always concerned with state 2, the goal state of the action. For instance, the Source prefix *вы-/vy-* functions like a Goal prefix in many cases (*вы-судить* (*вы-*'judge') 'to obtain (something) by court decision,' -- and therefore have access to that thing now), as does the Path prefix *пере-/pře-* (*пере-болеть* (*пере-* 'be sick') 'to recover, get well'). Goal state focus is common in expressions involving concrete actions as well. Thus, we see that even in spatial contexts prefixes may be used abstractly:

(2) a. вы-мести сор из комнаты
*to sweep garbage **out** of a room* (i.e. to move physical entities out of a container)

b. вы-мести комнату
to sweep a room clean (i.e. to put the room into a canonical, preferred state)

The goal orientation of language thus tends to convert all prefixes to Goal prefixes by emphasizing the final state in some way. This is, of course, redundant for Goal prefixes. but results in an apparent reversal of spatiotemporal orientation for Source and Path prefixes. Since the final state enjoys a privileged position relative to the source state (beginning of an action) and path structure (the process or duration of an action), all Source and Path prefixes will allow, if not favor, a Goal version. This effectively neutralizes the distinction between Source, Path, and Goal prefixes when they are used abstractly.

We have seen that all prefixes may easily describe an identical abstract schematic relation. Furthermore, this schema can theoretically make reference to any elements, concrete or abstract (such as states), which can be conceived as maintaining the basic schematic relation (whether or not these elements are linguistically explicit). This makes the content of prefixes seem impossibly abstract and flexible indeed. The diagram in Figure 6.3 subsumes all of the prefixes under a single extremely abstract mapping of the following form between an abstract schema and world states:

A TR which shifts from a source point (LM_1) to a goal point (LM_2) shifts from STATE 1 to STATE 2 where STATE 1 ≠ STATE 2; STATE 1 and STATE 2 define a boundary.

In fact, for abstract prefixes it is not useful, and perhaps even counterproductive, to refer to trajectors and landmarks at all. Rather, certain features have become associated with the goal (world) state. The selection of relevant features from the semantic net of a prefix, as well as the attribution of those features to the appropriate aspects of a

scenario, is highly context dependent and flexible. This topic is examined in more detail in Section 6.9.

The abstract prefix schema in Figure 6.3 indicates that all prefixes reduce to a single common denominator which may be described as a source-path-goal schema plus a boundary or limit. There is no trace of the secondary or tertiary spatial features in this schema.

6.2.2 All prefixes can (theoretically) function as empty perfectivizers

The neutralization of prefix prototype features in abstract uses suggests that all prefixes theoretically have the ability to act as empty perfectivizers.[1] Indeed, many prefixes turn up in roles now and again which have been described as purely perfective:

(3) Sample perfectivizing prefixes in Russian and Czech:

делать/**с**-делать	*to do*	dělat/**u**-dělat	*to do*
пить/**вы**-пить	*to drink*	cvičit/**vy**-cvičit	*to train, exercise*
писать/**на**-писать	*to write*	psát/**na**-psat	*to write*
читать/**про**-читать	*to read*	číst/**pře**-číst	*to read*
совершенствовать/ у-совершенствовать	*to perfect*	dokonalit/ **z**-dokonalit	*to perfect*
будить/**раз**-будить	*to wake*	budit/**pro**-budit	*to wake*
печь/**ис**-печь	*to bake*	dívat se/**po**-divat se	*to look (at)*
бритъ/**по**-бритъ	*to shave*	holit/**o**-holit	*to shave*

Nevertheless, as empty perfectivizers all prefixes are not created equal; certain prefixes are more suited to this function than others. One reason for this is that some prefixes carry much more in the way of inferential baggage than others. Thus, as demonstrated in Chapter 3, typically *вы-/vy-* will involve additional inferences concerning the accessibility or canonical state of the trajector at the goal point. *За-/za-* involves opposing inferences concerning the inaccessibility or deviance of the trajector at the goal point (although the association of *за-/za-* with a general notion of *change* also suggests it as a good candidate for an empty perfectivizer in some contexts). *Пере-/pře-* will involve additional content concerning the thoroughness of an action, repetition, etc. Since prefixes will be used or perceived as empty perfectivizers only when there is significant overlap between the meaning of the prefix and the meaning of the base verb itself, an extensive semantic network of inferences will tend to minimize the formation of empty perfectives. When there is semantic overlap, the motivation for choosing the prefix may be clear, but additional semantic content contributed by the prefix is negligible or not detectable.

This observation is by no means a new one. (Van Schooneveld, 1958, suggests that empty prefixation is primarily due to semantic overlap between verbs and prefixes.) As we have seen, the most appropriate prefix for empty perfectivization in Russian is

[1] In both Czech and Russian the prefix *в-/v-* remains stubbornly spatial in meaning and does not seem to function as an empty perfectivizer.

perhaps *по-* because its (abstract) semantic content is inherently redundant with any verbal activity. Thus, the spatial typology is able to predict that *по-* will be the most common empty perfectivizer, and that other prefixes (such as *вы-, за-, пере-*) are unlikely to function in such a role because of well developed inferential associations which are relatively specific and less likely to overlap with a wide range of verbs. At the same time, the abstract prefix schema shows clearly why any prefix can function as an empty perfectivizer under the right circumstances. The approach taken in this study thus suggests that, while prefixes do often function as empty perfectivizers, this does not mean they are inherently devoid of semantic content. (Of course, cognitive linguistics acknowledges the imperfective/perfective distinction itself as semantic, albeit highly abstract.)

In addition to the prefix *по-/ро-*, the Path prefix which bears the least additional semantic content, we can now make the prediction that other good candidates for empty prefixation will be Source or Goal prefixes which have few, nonspecific inferential associations as part of their networks. This seems to be true of Russian *с-* and *на-*. (According to Čertkova (1998:507), *по-* and *с-* are the prefixes which most often form aspectual pairs with unprefixed verbs in Modern Russian.) Neither *с-* nor *на-* is treated in depth in this study, simply because *на-* did not occur with verbs of motion in my corpus and *с-* seems to be little more than an ordinary Source Contact prefix in spatial contexts, i.e. it does not demonstrate a propensity to generate inferences. For instance, the Source prefix *вы-* is typically associated with inferences concerning the accessibility or canonical state of the trajector at the goal state. The Source prefix *от-* is associated with the inference that the trajector has been physically dissociated from the landmark. In contrast, *с-* is not strongly associated with any potential inferences which might arise from a loss of physical contact between trajector and landmark. This lack of associated semantic content is precisely what would be expected for an empty perfectivizer. It is noteworthy that, once again, the Contact prefixes seem to contribute the least information concerning the unfolding action, and thus generate the fewest novel inferences.

Notice that in theory the Source Contact prefix (*с-*) can (and does) readily generate the inference of *dissociation* between trajector and landmark, since at the goal point of motion a contact relationship between trajector and landmark has been annulled (*с-ойти с коврика* 'to step off the rug' implies that there is no longer a (contact) relationship between the TR and LM (rug)). Similarly, a Goal Contact prefix could generate the inference of *association* between trajector and landmark at the goal point. These inferences, however, do not distinguish either prefix from any of the other Source and Goal prefixes, which also designate <+dissociation> or <+association> at the goal point respectively. This is because the spatial features which distinguish the various prefixes -- <proximity>, <contact>, and <contain> -- all indicate some form of relationship which may be established and annulled. Thus, all of the Source and Goal prefixes easily indicate either association or dissociation between TR and LM at the goal state (*вы-йти из дома* 'to exit the house' implies that there is no longer a (containment) relationship between TR and LM (house)). In particular, *от-* and *при-* are more common in roles which indicate physical or metaphoric detachment or attachment (*от-сеять* 'to sift, screen (out), remove'; *от-далить от себя все заботы* 'to distance/remove oneself

from all cares'; *при-клеить* 'to glue, affix'; *при-стать к группе туристов* 'to join/attach oneself to a group of tourists'), leaving *с-* and *на-* for roles of simply attaining some state or limit (*на-писать*^{P} 'to write,' *с-ыграть*^{P} 'to play,' *с-гореть*^{P} 'to burn down,' etc.; but note also *с-орвать* 'to tear off'). As we have seen with the prefix *по-*, for telic base verbs the prefix limit will usually match that of the verb (*на-писать*^{P} *письмо* 'to write (and complete) a letter,' *с-петь*^{P} *песню* 'to sing a song'). Where the base verb itself does not provide a clear limit or goal, the prefix may indicate that some amount of action has occurred. In the case of *на-*, a large quantity is often implied (*на-готовить* 'to cook a large quantity of'). *На-* may also combine with the reflexive particle *-ся* to indicate that the limit attained is defined by the TR. In this case *на-* is associated with attaining a state of trajector satiety and is similar in function to Czech *po-* plus the dative reflexive particle *si*.

It is tempting to suggest that a Path prefix like *по-* and a Source or Goal prefix like *с-* and *на-* are inherently different kinds of perfectivizers, since *по-* indicates that some amount of action has occurred up to some limit, whereas *с-* merely says a new state has been achieved, and the verb names the manner in which it occurred. In practice these prefixes are indistinguishable in their function as perfectivizers. Another way of saying this is that inference neutralizes any real distinction between the two theoretical types. *На-писать*^{P} *письмо* 'write a letter' may indicate a final state has been reached, but knowledge concerning letter-writing tells us that a temporally extensive process led up to that state. Similarly, if *по-строить*^{P} *дом* 'build a house' indicates that a process has been carried to completion, we can infer that a certain state now holds. The difference is thus not recoverable, and there is no justification for making the distinction.

In contrast to Russian, almost all prefixes in Czech seem capable of acting as empty perfectivizers, and no one prefix stands out in this regard. This might be taken as evidence that Czech prefixes do not have strong associations with specific inferences or well developed semantic networks in comparison to Russian prefixes. One possible reason for this will be considered in Section 6.15.

6.3 Mapping between space and abstraction: the privileged role of the spatial prototype

Now that we have examined the spatial prototype of several prefixes with motion verbs, as well as non-spatial uses of a few of these prefixes, some conclusions may be entertained regarding the relationship between the spatial prototypes and the abstract uses of prefixes. The spatial prototypes may be considered specific, elaborated instantiations or subcases of a more general abstract schema: a trajectory (source-path-goal schema) plus a landmark. As we have seen above, however, this abstract schema is identical for all prefixes and therefore cannot distinguish among prefixes at all. Thus, there can be no abstract schema which acts as a prototype for an individual prefix. Furthermore, this abstract schema looks rather like an invariant, not like a prototype at all.

It is thus in attempting to define a prototype for a prefix in all of its uses (spatial and non-spatial) that we see the privileged position accorded to space. While spatial

uses of prefixes may be considered instantiations of a very abstract structure shared by all prefixes, the presuppositions, inferences, and broader associations which accompany the spatial uses most often provide the semantic content which differentiates the individual prefixes. This associated semantic content alone is not sufficient to determine how a prefix will be interpreted when combined with a particular verb and context, however. Although it is generally impossible to predict prefix interpretation with any real accuracy, it is informative to examine the kinds of factors which affect the way the meaning of a prefix+verb combination is realized. Some of these factors will be considered in Section 6.9.2.

It might be argued that distinctions such as proximity, contact, and containment may also be represented by abstract schemata, which then receive either concrete or metaphoric interpretations. The problem with this approach is simply that abstract schemata easily map to one another, may be combined to create more complex schemata, and may map to any or all of the prefixes at different times. For instance, the spatial prototype of the prefix *вы-/vy-* might be taken as composed of a containment schema plus a source-path-goal schema, with the source and container identified with one another. This overall schema cannot, however, be differentiated from a boundary schema since the container edge easily maps to the boundary, making the source container schema indistinguishable from the schema of a path prefix like *пере-/pře-* or *о(б)-/o(b)-*. This is the same point made in Section 6.2.1 above; since all prefixes identify two states, when prefixes are used abstractly, either state may be redefined as a proximity, contact, or containment relation in space.

In this way, the spatial schema of any prefix+verb combination can easily be reconfigured, and the abstract prefix will appear to represent a *spatial* relation exemplified by the spatial prototype of a *different* prefix. The abstract prefix will differ from prefixes with the appropriate spatial prototype, however, by virtue of its associated features. In the terminology established here, a proximity, contact, or containment schema could be associated with a source or goal state for any abstract prefix, thus effectively obliterating the original spatial properties of the prefix. In such cases it is the verb and its complements which make the spatial relations clear. The prefix will bear the semantic associations (inferences) of its original spatial prototype, but these associations will apply to a novel spatial arrangement. Thus, any prefix can theoretically be used in any spatial context. We have seen this with *за-*, which is classified as a Proximity prefix according to its spatial prototype, but which readily applies to containment and contact contexts in space: *за-йти в дом/на мост* 'to go into the house/onto the bridge (and thus deviate from an original status).' Similarly, *от-* is a Proximity prefix, but since its primary semantic content is the inference that the trajector is dissociated from a landmark at the goal state, it may easily apply to situations which cannot be characterized as source proximity: *от-орваться от земли* 'to take off' (source contact); *от-резать кусок хлеба* 'to cut off a piece of bread' etc.

6.4 Prototype vs. invariance

The interpretation of the spatial model for prefix meaning as a prototype offers a clear advantage over the structuralist notion of an invariant with contextual variants.

One advantage is that the specific evaluative associations which are necessary in order to describe prefix meanings can be derived from the spatial schema of a prefix. Also, not all features of the schema must be present in any given instance of prefix usage. Rather, any subset of features from the overall semantic network may be present. Frequently the only feature of a prefix which is present in a given use is a secondary, or even tertiary, association generated from the original spatial features. This kind of feature chaining which describes a radial category (Lakoff, 1987) cannot be handled by an invariant definition.

At the most abstract level, however, all prefixes share reference to a trajectory and a "landmark" (i.e. the source, path or goal feature plus some additional relational feature.) In other words, all prefixes indicate that the world state has changed in some way. This most abstract generalization looks rather like an invariant meaning for all prefixes. While this does not (and cannot) differentiate individual prefixes, it does imbue prefixes collectively with a very abstract invariant meaning. Nevertheless, this invariant is so abstract that it belongs to the realm of grammatical (inflectional) meaning, which, for many linguists, does not count as semantic. It is also completely useless in predicting, or even generating, the various prototype meanings of individual prefixes, let alone the submeanings or the logic of the links among them. Thus, rather than acting as an invariant which is realized as a number of contextual variants, this invariant structure (which tells us nothing, or alternatively anything, about the distinctive semantic networks of each prefix) interacts with the spatial prototype schemata, and associations generated by them, so that features derived from the spatial prototype map to the invariant structure in a simple, regular fashion. For instance, given a spatial prototype characterized by <+source, +contain> and the association <+accessible at goal>, the invariant maps the appropriate features to STATE 1 (<+contain>) and STATE 2 (<+accessible>). In non-spatial contexts only the STATE 2 mapping will be relevant.

This invariant structure essentially adds a landmark (or evaluative measure) to a verb (which always has a trajector, but may or may not have its own landmark). This creates a telos for the verbal action, whether or not a telos was implied by the verb already. But this telos may be equivalent to that of the verb or not, may refer to a spatially extant (goal) entity or an abstract one (i.e. a state or process), and is associated with a number of potential semantic features. The outcome is not simply a contextual variant of an invariant schema, since nothing in the combination of a landmark and a specific context can predict how that landmark will be realized. Rather, interpretation of the prefix landmark requires knowledge of the spatial prototypes of prefixes. The greater semantic network of a prefix is an active creation of speakers based on interactions of their linguistic knowledge and general knowledge of, and experience in, the world. Semantic networks of prefixes are also crucially affected by the prefix system as a whole (e.g. the intersecting semantic range of individual prefixes, semantic gaps etc.). Thus, one might suggest that the presence of a telos, and ultimately the feature <+perfective> (see Section 6.14 below), is an invariant characteristic of all prefixes, but little is gained in terms of descriptive power by doing so.

6.5 The nature of spatial prototypes: a comparison to Janda (1986)

6.5.1 Cognitive space: spatial or abstract?

The approach to prefix semantics presented in this study is similar to that of Janda (1986), but the resultant interpretation of prefix prototypes given here is ultimately quite different. Janda suggests that the differences in meaning among prefixes arise from different schematic prototypes in cognitive space, which she defines as a mental representation of space. Given this definition, it would appear that cognitive space is equivalent to what I have simply called space, since language always refers to mental representations (of spatial, as well as non-spatial, phenomena). Nevertheless, the cognitive spatial configurations cover both spatial and non-spatial uses of prefixes with a single schematic diagram (the prototype), which may undergo certain transformations. As a result, Janda's cognitive spatial configurations are neither purely spatial nor fully abstract.

6.5.2 Transformations

Having provided a schematic prefix prototype in cognitive space, Janda suggests that the greater semantic network can be generated by a limited set of transformations which link the prototype configuration to other configurations. Indeed, the dimensionality, numerosity and identity relations of landmarks and trajectors (the transformations) are relevant in prefix interpretation, but I have found that they are not usually relevant in establishing the semantic network of a prefix. The transformations are simply schematized versions of a variety of actual spatial possibilities for trajector and landmark reference. They represent broader, common cognitive processes which are not exclusive to prefixes and are not inherently crucial elements of prefix semantics (cf. the ability to shift between a count versus mass interpretation of a noun: *картошка* 'potato/potatoes'). It is true that the transformations documented by Janda may generate slightly different kinds of inferences; in this way they may occasionally account for some uses of prefixes which have been considered separate submeanings. Even so, a transformation, like experiential (contextual) associations, is only relevant to the semantic network of a prefix if it becomes conventionalized as part of the prefix meaning (see Section 6.9). Thus, transformations are potentially relevant to prefix semantics, but are by no means obligatorily so, nor are they the only aspect of context which may affect prefix semantics.

In addition, since the transformations are common to most prefixes, the cognitive spatial configurations begin to look much more like invariants than like prototypes. The transformations represent potential realizations of the trajector or landmark in actual space and are themselves neither abstract sources of prefix submeanings nor features which help to uniquely describe the semantic network of prefixes. Dimensional transformation or numerosity of trajectors and landmarks in space does not contribute much to prefix interpretation in spatial contexts, as this is what speakers get from the lexical items instantiating the trajector and landmark, and from general world knowledge. This type of information is never imparted primarily by the prefix itself.

Furthermore, the dimensionality, numerosity, identity relations of landmark and trajector, and so forth, are expected to structure all uses of prefixes, both abstract and concrete (spatial). I have found that such parameters are only directly relevant in space; they are meaningless in instances involving abstract referents, where concepts like dimensionality do not apply (cf. also Flier's claim that <+lateral> and <+domanial> have relevance in non-spatial uses of prefixes). This is essentially the same point made by suggesting that the Proximity, Contact, and Containment designation of a prefix loses its relevance outside of the actual spatial realm. Thus, in Chapter 4 it was argued that in the expression *про-думать план* 'to think through a plan (thoroughly),' the plan is not conceptualized as a container, which is then "penetrated by thought". Instead, certain inferences generated by a spatial model of motion through a container (e.g. that action was thorough and required some effort) have been incorporated into the prefix prototype and extended to non-spatial uses of the prefix.[2]

One reason that transformations are important to Janda's description of prefixes is because most prefixes seem capable of applying to a variety of spatial contexts. For instance, we have noted that *от-* may indicate motion away from the vicinity of a landmark (*от-ойти от дерева* 'to move away from the tree'), or removal of an integral piece of a landmark (*от-резать кусок хлеба* 'to cut off a piece of bread'). In Janda's description, this requires an identity transformation such that an independent trajector becomes part of the landmark. This results in a network of two cognitive spatial configurations which represent all the *spatial* contexts in which a prefix may appear -- usually all the spatial contexts available to speakers in general. In this study (as in Janda's) the first model is assumed to be the basic spatial prototype (although Janda's prototype includes proximity and contact, and potentially even containment, relations between LM and TR, so long as they are not considered amalgamated into a single entity,

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[2] It might be argued that the proximity, contact, and containment distinctions are not lost in abstract uses, but that there is an underlying metaphor of proximity, contact, or containment which motivates prefix choice. Such a proposal is simply not viable. First of all, since proximity, contact, and containment may all metaphorically indicate the concept of *relationship*, it is impossible to prove that these specific spatial parameters have any relevance for prefixation. One can only assert it by looking at the proximity, contact, or containment status of the prefix and thus claiming that such a metaphor exists. One could, for instance, claim there is a general metaphor linking thought with the penetration of containers based on the existence of *про-думать план* 'to think through a plan (thoroughly)'. There is, however, a simpler explanation available. Ascribing the inference of *thoroughness* to the process of thinking explains prefix choice without suggesting that an abstract entity is conceptualized in terms of a spatial one. Furthermore, in most cases a variety of prefixes (Proximity, Contact, and Containment) can be used with a given predicate. If these are metaphoric, then we must accept that any abstract notion is sometimes interpreted as metaphoric proximity, sometimes as contact, and sometimes as containment. In all of these cases, however, the inferences associated with these prefixes provide the useful semantic content. This is most clearly seen where prefixes are applied to spatial contexts that differ from the spatial prototype of a prefix: *от-орвать кусок чего-нибудь* 'to tear off a piece of something' does not express a source proximity relation; *за-йти на мост* 'to go onto a bridge' does not express a goal proximity relation, etc. Even if metaphors of proximity, contact, or containment are deemed important in the language at large, the inferential semantic features which *derive* from the original spatial designation of the prefix are more informative in most cases. Thus, for the expression *про-думать план* 'to think through a plan (thoroughly),' the information that the action was thorough is useful, whereas the notion that a plan is conceptualized as a container is not. It might be argued that in this case only the entailments of the metaphor are mapped. I argue against this interpretation in Sections 6.8 and 6.12.

whereas the spatial prototype as defined here involves only the proximity relation). Rather than describing the relationship between the two spatial contexts by dimensional and identity transformations, however, the important relationship is identified as an entailment of the prototype context: the trajector becomes dissociated from the landmark. This entailment becomes an important semantic feature in the *от-* network: <+dissociation>. Once this feature is established in the network, it can be applied to any spatial context in which it is relevant, regardless of dimensionality or identity of trajectors and landmarks. In this way transformations become unnecessary. They merely describe the contextual realization of the feature <+dissociation>, something which speakers do quite effortlessly and automatically. The significance of this difference in approach will become clearer in Section 6.6.

6.5.3 Identifying the spatial prototype

The prototype configuration which represents a given prefix in Janda's work is (apparently) determined according to the spatial uses of the prefix which are the most common or intuitively basic. Transformations of the configuration then account for other basic spatial uses of a prefix. The family of configurations in cognitive space described by the prototype and its transformations is then expected to accommodate all uses of the prefix equally well. The research presented here suggests that many apparently basic spatial uses of prefixes are, in fact, already abstract in the sense that they are derived from a different original spatial schema. In such cases the prefixes contribute only the associated inferential content of the original spatial schema. The actual spatial relationship itself is identified by the verb, its complements, and greater linguistic context. For instance, *от-резать кусок хлеба* 'to cut off a piece of bread' does not suggest that there is a spatial schema for *от-* which inherently involves the removal of a piece of a two- or three- dimensional landmark. Rather, *от-* contributes the notion of *dissociation*, and knowledge concerning the action of cutting bread informs us that dissociation in this context indicates the removal of a piece from a three dimensional object, a loaf of bread.

If we must accommodate all uses of a prefix with schematic configurations without considering potential contextually relevant associations which might accompany them, it is impossible to identify either the source of the evaluative content of prefixes or the appropriate parameters for distinguishing among prefixes. As a result of this approach, Janda's cognitive spatial configurations frequently reflect the most common spatial contexts for use of a given prefix, not the spatial arrangements which generated the all-important experiential correlations and inferences associated with each prefix. Janda does an excellent job of identifying these associations independently of the configurations, but this most crucial aspect of prefix meaning is simply ascribed to various elements of the cognitive spatial configurations without any motivation. As a result, the fundamental link between the various submeanings of a prefix is lost.

According to the viewpoint expressed in the current study, it is necessary to determine the basic spatial prototype of a prefix by examining the simplest spatial contexts of use (usually with verbs of motion), and also by considering the semantics of prepositions, which represent the historical source of prefix morphemes. This spatial prototype, which may or may not represent the most common and/or synchronically

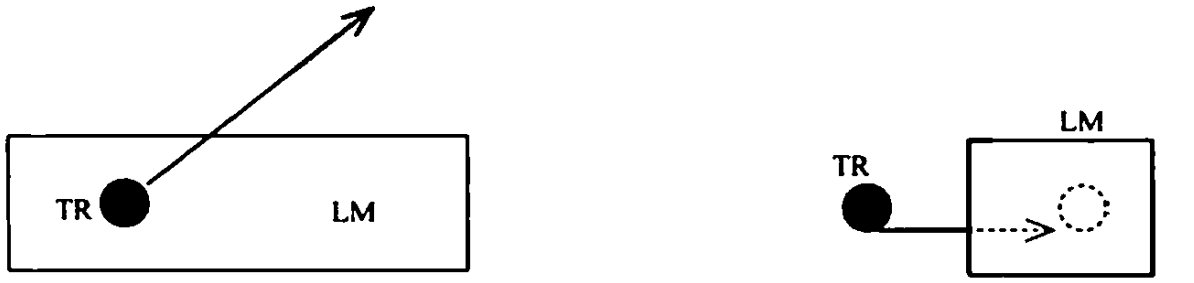
psychologically basic usage, is then used to explain the reference associations which map to abstract schematic structure. These associations may, in turn, be used in concrete spatial contexts which are fundamentally quite different from the spatial prototype.

An example of how this difference in approach affects analysis and interpretation of the spatial prototype of a prefix can be illustrated with the prefix *за-*. Janda states that in the basic configuration "the landmark is a closed figure which designates the normal or canonical environment from which the trajector deviates" (1986:79). The trajectory for this configuration is further described as having a diagonal orientation and transgressing a lateral boundary of the landmark. Because the landmark is defined as a normal or canonical environment, when the trajector departs from this environment, it is deviating or being deflected.

This configuration is clearly based on the common use of *за-* in spatial contexts to indicate making a side trip (e.g. *за-йти в магазин по пути домой* 'to stop by a store on the way home'), the submeaning which Janda refers to as *deflection*. The *deflection* submeaning is also, presumably, the motivation for the diagonal trajectory and the fact that it transgresses a lateral boundary of the landmark. Nevertheless, in a number of contexts, both spatial and abstract, the closed nature of the landmark, the orientation of the trajectory, and transgression of the lateral LM boundary are not meaningful. Therefore, although this configuration is taken as the basis for the submeanings *fix*, *change of state*, *excess*, and *inchoative*, in none of these cases are spatial elements such as the diagonal orientation of a trajectory, relevant (cf. *за-регистрировать* 'to register,' *за-солить* 'to pickle'). Rather, it is the association of deviance, or a noncanonical goal state, which is relevant.

More importantly, in the cognitive spatial configuration *за-* is associated with deviance or deflection from a canonical environment essentially by decree. This implies that the evaluative measure *deviant* is inherent even in the most basic spatial contexts, and that *за-* does not, in fact, ever reduce to a simple spatial configuration devoid of non-spatial content. Although the diagonal trajectory and the transgression of the lateral boundaries of the LM are meant to provide a spatial basis for deflection, these cannot properly represent deflection unless there is also a canonical horizontal reference trajectory or it is clear that transgressing terminal boundaries represents a canonical situation. In addition, there are many spatial uses of *за-* which do not manifest either of these properties which must be accounted for (*зайти в дом* 'enter the house,' *за-йти на мост* 'walk on to the bridge', etc.). Janda gives an insightful and thorough description of the semantic network for *за-* as a whole, but there is no way of knowing why *за-*, specifically, should have a landmark which represents a normal environment.

In the terminology used in this dissertation, Janda represents the landmark as a source container that associates the source state with normalcy (and therefore the goal state with deviance):



a. Janda's configuration: *за-* 'deflection' b. *за-* 'behind, beyond'

Figure 6.4. A comparison of proposed prototype schemata for the prefix *за-*.

The model given in Figure 6.4a, however, cannot easily account for the basic spatial sense of *за-*, 'behind, beyond', where there is no clear deflection involved:

(4) Мальчик за-шел за дом
The boy walked (to) behind the house

In contrast, this study begins with examples such as (4) and uses them to explain the reference associations (generated primarily by inference and experiential correlation) which apply to abstract uses of the prefix (including deflection). As we have seen, the deviance of the trajectory and/or the goal state associated with *за-* is the result of the experiential correlation of objects going behind/beyond landmarks with losing sight of, and access to, those objects, and hence with an undesirable or noncanonical state.[3] These spatial experiences are, in turn, experientially and metaphorically associated with deviance (including the deflection of a trajectory from some primary or canonical course), change of state (including hardening, fixing, thus also often making inaccessible), and so forth. Thus, the deviant character of the *за-* trajectory which Janda speaks of arises out of a spatial prototype for *за-* which is <+goal, +proximity, +behind>, plus generalized inferences (and perhaps metaphors), not from a semi-abstract schema represented by a (minimally) two dimensional landmark and a diagonal trajectory.

Janda accurately identifies and describes the reference associations (i.e. abstract semantic features) of the four prefixes she examines, but they are, by and large, not motivated descriptions. These associations are not explained as inferences or experiential correlations which arise out of the basic spatial usage and context. Thus, although Janda considers spatial uses basic, the nature of the spatial/abstract relation is lost.

[3] Recall from Chapter 2 that the preposition *за* 'behind' was significantly more common than the preposition *перед* 'in front of' in replacing the less specific preposition *мимо* 'by, past'. This is evidence for the marked, or noncanonical, status of location behind an object rather than in front of it relative to an observer and provides further evidence that spatial location behind an LM is the source of the association between *за-* and noncanonical states.

6.5.4 Differentiating among prefixes

Another difference between the current research project and Janda's approach lies in the assessment of the relationship between spatial and abstract prefixation. Janda treats non-spatial prefixes as straightforwardly metaphoric with respect to spatial prefixes, such that the trajectors, landmarks, and their spatial properties are expected to have metaphoric counterparts in abstract contexts. For this reason the cognitive spatial configurations are considered descriptive of all prefix usage (spatial and abstract) and can be considered, at best, only quasi-spatial. It has already been pointed out that for abstract prefixation there can be no schematic configuration which, in and of itself, identifies an individual prefix, since any abstract schema can map to any other schema (i.e. all of them can map to a diagram such as Figure 6.3 above, as well as to others). Consequently, the stance taken in this work is that no abstract schemata can, in fact, distinguish among prefixes. In order to differentiate prefixes, it is necessary to take into account the primary spatial prototypes and, in particular, the inferences and associations which are motivated by the structure of the spatial prototype. Note that although these associations are crucially dependent upon actual spatial experience, they are not inevitable aspects of the spatial prototype schema itself. Furthermore, different spatial prototypes can generate convergent inferences and associations, and a single prototype may generate conflicting inferences. To some extent, then, there must be conventionalization of the semantic features which become associated with each prefix.

This perspective contrasts with Janda's in that she distinguishes prefixes solely on the basis of their configurations in cognitive space. She suggests that the differences between the meanings of four prefixes which may all indicate *excess* can be explained because they arise from configurations of different dimensions and orientations in cognitive space. While these prefixes clearly have different structural profiles in space, all of them are fully equivalent in abstract structure. In the next section I will show how some differences among these prefixes are generated by the reference associations for each piece of the abstract schema (as well as how those associations interact with immediate context).

6.5.5 Excess

Using Janda's example of the submeaning *excess*, we see that *за-* highlights the deviance (of the trajector) at the goal state, thus implying an excess of activity. In other words, most of the base verbs with *за-* in this meaning denote normal activities that would only lead to an abnormal state through excessive engagement in the activity (*за-работаться* 'to overwork oneself,' *за-бегаться* 'to get tired from running'). *За-* appears to be typically associated with tiring oneself out from an activity, and other kinds of deviance must be stated explicitly: *за-лечить* 'to cure,' but *за-лечить до смерти* 'to (over)cure to death, to kill with too much medicine' (Janda, 1986:106-7).

Пере- highlights the crossing of a boundary which defines a norm in the domain of action denoted by the base verb, thus excess (*пере-сластить* 'to oversweeten'). Of the four *excess* prefixes, it gives the most direct expression of the concept of excess, rather than implying it via an undesirable result.

До- highlights attainment of a limit which is itself defined as an abnormal condition resulting from the verbal activity. In this regard it is strikingly similar to the

other Goal prefix here, *за-*, except that the abnormal state is typically defined as one of conflict with societal norms rather than overtiredness (*до-шутиться* 'to get into trouble by joking too much'). Otherwise, as with *за-*, this limit must be made explicit with a prepositional phrase, e.g. *до-играться до слез* 'to play oneself to tears' (Forsyth, 1970:23). Unlike *за-*, however, *до-* does not inherently carry a sense of deviance associated with its goal state in its semantic network. Rather, real world knowledge tells us that the actions denoted by the base verbs do not generally lead to any kind of natural limit, only those defined by human tolerance. Where another limit is imaginable, both interpretations will be possible (cf. *до-смеяться* 1) 'to finish laughing, laugh to the end or to some limit' and 2) 'to get oneself in trouble through extended laughter'). Thus the deviant state here is implied, as is the notion of excess.

От- 'excess' similarly associates the goal state with deviance, but does not possess a general mapping of the sort characterized by *за-*. Rather, as a Source Proximity prefix *от-* highlights <+separation> at the goal state as its primary feature. In non-spatial terms this can be summarized by a more general feature, <+dissociation>. Dissociation is not strictly abnormal, but it is certainly considered so for body parts, thus the interpretation of this prefix is one of abnormality specifically with body parts: *от-ходить ноги* 'to walk one's legs off.' This explains why *от-* is so limited in the *excess* submeaning.

Notice that for all of these prefixes the interpretation of *excess* is itself an inference generated by the association of a "landmark" with either deviance or normalcy. If an activity exceeds a normal amount or is carried out to a point where an abnormal state is reached, one assumes that the activity has been performed excessively. In this sense, the apparent differences are effectively neutralized because they are schematically equivalent. All of these map to an image schematic structure which represents a linear scale, which is precisely a directed trajectory with a reference point on it somewhere. Again, theoretically any prefix can map to a linear scale since all prefixes involve a trajectory and a landmark. Those best suited to an interpretation of excess, however, will be those that incorporate goal-deviance features or source/boundary-norm features into their prototypes. Furthermore, *specific semantic features may be considered normal or deviant only in certain contexts* (e.g. as with <dissociation> in the context of body parts with *от-*).

Due to particular networks of associations (i.e. inferences and experiential associations arising from spatial uses, plus extensions of these), some prefixes will be more suited to expressing *excess* than others, but in theory any prefix may occasionally turn up with this meaning, given the right combination of prefix semantic features and base verb semantics, just as all prefixes are possible empty perfectivizers (cf. *из-бегаться* 'to exhaust oneself by running' = *за-бегаться; из-мокнуть* 'to get drenched'; *об-кормить* 'to overfeed' = *за-кормить/пере-кормить; об-ъесться* 'to overeat'; *о-питься* 'to drink to excess' etc. In Czech the prefix *pře-* is used to express excess in the vast majority of cases: *pře-pracovat se* 'to overwork oneself.' *U-* is also possible, however: *u-pracovat se* 'to be permanently damaged by overwork, to work oneself to death'; *u-běhat si* 'to exhaust oneself with running'; *u-chodit si nohy* 'to walk one's legs off', etc.)

Verbs of cooking provide another interesting example of how associated semantic features of prefixes come into play in determining prefix interpretation for the submeaning *excess*. Since *за-* associates the goal state with noncanonical/deviant states, one might assume it could easily mean *to overcook something*, but instead we find *пере-* in this role:

(5) a. пере-жарить рыбу	vs.	b. за-жарить рыбу
to overfry the fish		*to fry (up) the fish*

A cooked state, however, is noncanonical for the food item itself (which is raw in its naturally occurring state). Furthermore, the kind of deviance indicated by *за-* is often simply a change of state, particularly one which hardens or preserves the trajector in some way. For these reasons *за-* is quite appropriate for indicating simply a cooked state, which does not lead to an interpretation of the degree of the activity itself as excessive. *Пере-*, on the other hand, simply indicates that a boundary has been crossed by the cooking process. On the continuum from raw to burned, the only easily retrievable (anthropocentric) boundary is *properly cooked*. Thus, *пере-* is not suited to indicate *properly cooked*, but only *overcooked*. Its association with deviance here is secondary. We also see a correlation between *за-* and the state of the trajector itself, whereas *пере-* (also *до-*) involves limits defined externally to the trajector. This correlation cannot arise out of the cognitive spatial configurations alone.

As a Path prefix, one might say that *пере-* expresses a much more direct account of excess, by indicating that a particular activity exceeded a boundary, whereas *за-* (Goal prefix) implies an excessive amount of activity as judged by a clearly deviant resultant state of the trajector (cf. *пере-хвалить* 'to overpraise' vs. *за-хвалить* 'to make arrogant by excessive praise'). In many cases, however, both prefixes may indicate both excess of action and deviant end state, since the two concepts go hand in hand in some semantic fields. Thus, we can predict that *пере-* and *за-* will differ less in meaning where excessive activity and a particular deviant state are so closely linked that either one implies the other -- in other words, wherever the same inferences are generated by each model. For instance, feeding a creature too much generally tends to fatten it, and being plump, in turn, generally results from over-feeding (or over-eating), thus *за-* and *пере-* are much closer in meaning when combined with *кормить* 'to feed' (*за-кормить* = *пере-кормить* 'to overfeed'). *За-* and *пере-* will be most similar in meaning when the deviant goal state is defined specifically with respect to time, i.e. the amount of time spent engaged in an activity was deviant. Nevertheless, the goal state deviance focus of *за-* is usually recoverable:

(6) a. за-лежаться	vs.	пере-лежать
to lie too long		*to lie too long*
to lie idle for a long time		
to become stale		

b. за-стояться	vs.	пере-стоять
to stand too long		*to stand too long*
to become stagnant		

The claim made here, then, is that the various prefixes expressing a notion of *excess* cannot be differentiated on the basis of schematic structures. This claim does not, however, suggest that there are no recoverable differences between these prefixes in the submeaning of *excess*. The specific semantic features which are incorporated into the semantic network of a prefix influence its suitability for different submeanings, as well as suitability to combine with different base verbs. The differences are not always as significant or predictable as Janda has suggested, however. For instance, *до-* is not inherently associated with goal state deviance; nevertheless, it appears that a very particular kind of (perhaps deviant) situation -- social difficulty or unpleasantness -- has become associated with it. *За-*, on the other hand, is often linked specifically with unusual mental states. These specific associations may not be fully explainable in terms of prototype semantics but may simply cluster around a prefix by analogy. The interpretation of *excess* itself, however, is crucially dependent on the extended semantic networks of these prefixes, and these, in turn, are dependent on the spatial prototypes of the prefixes and their experiential correlates and consequences.

6.6 Trajectors, landmarks, and abstract prefixes

6.6.1 Abstract prefixes comment on the state of the world

In Section 6.5.2 we noted that inferential semantic features generated by the spatial prototype and incorporated into the semantic network of a prefix make transformations in trajectors and landmarks unnecessary in order to describe the semantic network of a prefix. This process suggests that a very small number of prefixes are actually used spatially. Most prefixes, even when used in clearly spatial contexts, do not directly reference the prototype spatial arrangement. Such prefixes are considered here to be abstract. Example (2) above, repeated below, demonstrates the contrast between a spatial and abstract use of a prefix in a fully spatial context:

(7) a. вы-мести сор из комнаты
to sweep garbage out of a room (i.e. to move physical entities out of a container)

b. вы-мести комнату
to sweep a room clean (i.e. to put the room into a canonical, preferred state)

In examples of spatial prefixation, the prefix trajector is that which moves with respect to a landmark entity. Examples (7)a and (7)b demonstrate how concrete versus abstract use of a single prefix allows an apparent reversal of trajector and landmark roles. The landmark in the first sentence, the room, is the prefix "trajector", or the entity which shifts in some relevant way, in the second sentence. In examples such as (7)b Janda identifies the landmark as an abstract entity, such as the cleanliness of the room. This is because the measure of change in this case is an inferentially generated, non-spatial

feature <+canonical>. In such cases it is preferable not to search for trajectors or landmarks at all. It is more informative simply to speak of shifts in world states which hold at (source or) goal points in time. Abstract prefixes, then, *describe a shift or change in world states in the manner indicated by the prefix semantic features.*

Because abstract prefixes do not usually have concrete trajectors and landmarks, attempts to identify a prefix trajector and landmark can be problematic and may lead to misinterpretation. Consider the following example:

(8) Лена у-видела Бориса†
Lena caught sight of Boris

Is the prefix trajector Boris, who has entered Lena's domain of visual perception (a somewhat more concrete interpretation), or is the trajector Lena's mental state, which has shifted from one of not-seeing-Boris to seeing-Boris (a much more abstract interpretation)? The only way to make such a distinction is to refer to prefix semantic features themselves. In order to do so, we must not only identify the spatial prototype of the prefix, but we must also have a good model of the extended semantic network of the prefix. For instance, in the expression *она за-читалась* 'she became engrossed in reading,' given the prefix feature <+noncanonical>, we can see that a noncanonical state has been achieved by reading. An attempt to identify the trajector referent could yield either the agent herself or the mental state of the agent. Instead of a landmark, however, we have only the evaluative measure *noncanonical* to assign to the resultant state -- in this case, *the (unusual) mental state attained by reading.* In concrete uses of prefixes, the landmark is located at a source, path, or goal point in space, depending on the Source, Path, or Goal designation of the prefix. In abstract uses, the "landmark" will be a condition which applies to the (start), middle, or end of an action; hence it may characterize either a state or a process. In practice, inferentially generated semantic features will sometimes describe the action itself, but usually describe a condition which obtains at the end of an action. Therefore, rather than identifying trajectors and landmarks for abstract prefixes, in the remainder of this dissertation I will speak of conditions or semantic features which characterize either the verbal process (PROCESS CONSTRUAL of the verb) or the resultant goal world state which obtains after the action has been completed (STATE CONSTRUAL of the verb).

Examples of abstract prefixation in spatial contexts also highlight a further difference between Janda's approach and the analysis presented here. Throughout her work Janda identifies the trajector and landmark for a prefix as equivalent to the trajector and landmark for the verbal construction as a whole (the constructional trajector or landmark). While this is usually true in spatial uses of prefixes, the prefix demonstrates a great deal of independence from the verb in abstract uses. Thus, the *prefix* trajector does not always follow the strict patterns Janda gives as either the subject or direct object of the verb. In a number of cases the reference relation for the prefix can not be correctly established precisely because of the focus on constructional TRs and LMs rather than taking prefix semantic features themselves as the starting point of analysis. For instance, for the submeaning *cover*, Janda gives the following example for the prefix *за-*:

(9) Облака все чаще за-волакивали небо[†]
Clouds covered the sky more and more frequently (Janda, 1986:122)

Janda states that the clouds are the trajector(s) which cover the sky, the landmark. Indeed this seems straightforward, given that this is a concrete spatial example involving motion. If, however, we consider the meaning of *за-* according to the features generated by the spatial prototype, we see that something has become <+inaccessible> at the goal state. In the original spatial examples the thing which becomes inaccessible (by going behind/beyond the LM) is the trajector. In this example, then, the prefix trajector must be the sky and the landmark the clouds. This is precisely the opposite of the constructional trajector and landmark (i.e. the TR and LM for the expression as a whole).

At first it might seem convoluted to posit the stationary entity as the trajector and the moving entity as the landmark, but it is important to keep in mind that these are the "trajector" and "landmark" only for the prefix, and that motion is only relevant if we assume that motion (change in location) always has primacy over other kinds of changes which might be commented upon. If, instead, we consider temporal shifts as equally basic, we can see that the prefix merely tells us that *something became inaccessible at the goal state*. It is not significant that that thing did not move, nor that it is not the trajector for the entire verbal expression. Furthermore, under this analysis we need not posit an additional submeaning *cover*. Instead, these examples are all normal instances of expression of the features <+inaccessible, +goal (state)>.

The interpretation of *cover* (and the concomitant determination that this constitutes a separate submeaning) arises purely from the interaction of the prefix features with verbal semantic features. We can now see that the *cover* submeaning always involves verbs that themselves either mean *cover*, or lead to the inference of covering by the constructional trajector, and that this drowns out the voice of the prefix. The prefix itself is used abstractly and simply indicates something becomes inaccessible as a result of this action. The fact that it is the landmark for the construction as a whole, not the trajector, which becomes inaccessible is of no consequence. This is analogous to the kind of shift in participant roles which occurs among verbs such as *give* and *receive*. When the lexical semantic features of a verb simply indicate change of some kind in a trajector, *за-* will elaborate on that change, saying that the trajector becomes inaccessible as a result. When lexical semantic features of a verb tell us that the change specifically involves a covering of a landmark, *за-* is forced to switch its allegiance, such that the constructional landmark acts as prefix trajector in order to maintain its own semantic integrity. *За-* in its <+inaccessible> usage will thus seem to have a completely different meaning when it is attached to verbs (or contexts) which mean *cover* than when it attaches to verbs which do not mean *cover*. Another example of this with problematic reference for the prefix trajector is *за-крыть дверь* 'to close the door.' Here the door is the concrete entity which changes its position, thus it is the trajector for the entire expression. Nevertheless, the resultant goal state is one in which some thing (or space) has become inaccessible through closure of a door. In this instance, that which has become inaccessible is entirely implicit, thus the prefix trajector is

ambiguous and context dependent, or perhaps nonexistent. Again, in such cases it is preferable not to search for trajectors and landmarks at all.

Of course, it is true that the interpretation of examples like (9) is quite different from examples where prefix and verbal trajector are equivalent (or at least not reversed) and that this might be perceived as a wholly new meaning, which is then incorporated into the prefix semantic net as a new feature, <+cover>. The point is not, however, to dispute (or determine) the status of the submeaning, but rather to show that <+inaccessible> and <+cover> are closely related, differing only in the alignment of prefix features with the constructional trajector and landmark.

The main points of this section, then, are to note 1) that one cannot simply and unproblematically assign trajector (and landmark) reference to a prefix as equivalent to those of the verbal construction as a whole, 2) that in abstract uses of prefixes it is preferable to speak of world states which hold at the conclusion of an action rather than attempting to identify trajector and landmark referents for a prefix, and 3) that submeanings of prefixes are sometimes the result of prefix features interacting with lexical semantic features of verbs (and/or broader context). This last point is perhaps obvious, but in particular we have seen an example of how such an interaction can appear to entirely reverse the role of the prefix relative to the verb and significantly change the interpretation of the whole expression relative to what is expected for the prefix.

The assumption throughout this work has been that determining the appropriate referents for a prefix trajector and landmark is a convenient tool for analysis of expressions concerning actual space, but it is not necessarily useful in examining abstract uses of prefixes; in fact, it may obscure the relationship among the various uses of a prefix. Instead, inferentially generated features of the prefix are typically associated with a process or a goal world state, and speakers use their extensive knowledge of language and the world to identify the way(s) in which the world has shifted or changed in accordance with these features. We now turn our attention to how this assignment of prefix features comes about.

6.6.2 Spatiotemporal features and abstract prefixes: state, process, and event construals

When the trajectors and landmarks are represented by nominal entities, concrete or abstract, whatever prototype features of the prefix are relevant may be straightforwardly ascribed to the relationship between those objects. In abstract uses of prefixes, however, the appropriate semantic feature ("landmark") must be interpreted as applying to either a process (named by the verb) or a state (attained by engaging in the verbal action). As noted in the previous section, process construal of the verb indicates that the prefix feature applies directly to the verbal action itself. State construal of the verb indicates that the verbal action leads to a particular state, which is then characterized according to prefix features.

In general, Source and Goal prefixes such as *вы-* and *за-* will tend to ascribe some feature to the goal world state rather than to the verbal process itself in abstract uses: *вы-служиться* 'to gain a promotion,' i.e. to attain a preferred state as a result of working. This is simply because Source/Goal prefixes focus on a relationship at an

initial or final location, while ignoring the internal structure of the shift between the two. Since we are no longer dealing with actual space, however, the results are not relevant at a goal location, but rather at a goal point in time, i.e. a goal world state. (We have already noted that inference effectively converts Source prefixes to Goal prefixes in abstract uses, since inference focuses attention on the results of an action.)

Path prefixes such as *по-* and *про-*, on the other hand, originally comment upon trajector/landmark relations during the course of action. As a result, prefix features often apply to the process named by the verb, including its duration: *про-греть* 'to warm thoroughly,' *по-курить* 'to smoke for a while.' The distinction between Source/Goal and Path prefixes thus appears to be detectable in abstract uses of prefixes. The inadequacy of such a generalization, however, follows from the previous observation that the Source/Path/Goal distinction is often neutralized for abstract prefixes (Section 6.2.1). Indeed, additional inferences may convert the focus of either Source/Goal prefixes to the process of the action, or of Path prefixes to the goal state which results from an action. In particular, for Path prefixes we have seen that the interpretation of a prefix may vary considerably depending on the telicity of the base verb. Thus, when *по-* indicates that a certain amount of an action has been completed (process construal), and that amount happens to be explicitly defined by a telic base verb (*по-строить дом* 'to build a house'), the result is indistinguishable from a plain change of state interpretation. In Czech we noted that the prefix *po-* may combine with the dative reflexive particle *si* to define the extent of the process by a state of trajector satisfaction (*po-číst si* 'to read for a while and obtain satisfaction'); this is indistinguishable in form from the usage of the Goal prefix *за-* plus reflexive *-ся* in the Russian example *за-читаться* 'to become engrossed in reading,' to indicate something about the goal world state.

Similarly, *за-* can shift from a state construal to a process construal when the final (deviant) state allows one to infer something about the process itself. We saw this with *за-* 'excess' above. If a normal action leads to a deviant state, one infers that the action was performed to excess. The state to process shift is effected in a slightly different manner when the new (i.e. deviant from previous) state happens to be a process with further temporal extent. In this case one can infer that the process itself is initiated (*за-говорить* 'to begin speaking'). We have seen this variation in base verb construal most clearly cross-linguistically between Czech and Russian, where Czech *za-* tends to indicate that the goal state has deviated in some way, whereas Russian *за-* tends to indicate that the goal process has been initiated (Cz *za-trást*^{P} 'to shake, shiver' vs. Russ *за-трястись*^{P} 'to begin to shake'; Cz *za-kopat* 'to bury' vs. Russ *за-копать* 'to begin to dig; to bury' etc.). The two conceptualizations are sometimes not clearly differentiated in Russian, however, such that some examples may be easily interpreted simultaneously in both ways (*за-гнить* 'to (begin to) rot,' where *гнить* 'to rot' may be interpreted either as characterizing a noncanonical state *or* a newly initiated process). Thus, although the ingressive use of *за-* seems to be a clear example of a separate, identifiable submeaning of *за-*, it derives directly from the deviant (i.e. changed, new) goal state usage and applies when the goal state is viewed as a process with temporal extent. (Of course, once such an interpretation arises, a new feature becomes associated with the prefix *за-* in Russian, namely <+initiate>. The feature is established in the

semantic net, and the link between deviant end state and initiation can, in theory, remain eternally opaque to speakers.)

Finally, it may also be worth distinguishing an EVENT CONSTRUAL of the base verb for the *repetition* submeaning of *пере-/ pře-*. In order to repeat an action, the action must have taken place to begin with. Thus, the base verb must not only be telic (see Chapter 4), but it must be interpreted as an event which has independent existence, i.e. has already occurred once. Event construal, then, is just a way of saying that the verbal trajectory is relevant, but prefix features do not apply to the unfolding of the original process (see Chapter 5 Section 5.5.8.)

Notice that various prefixes combining with a single verb, and even a single prefix with a single verb, may invoke completely different construals of the verbal action (see example (10), below). Thus, one might say that the interpretation of a given prefix may vary depending on the conceptualization of the role of the verbal activity, but this conceptualization is in turn dependent on the original features of the prefix itself and resultant inferences. In other words, the only way to explain why the same base verb may be construed in different ways (i.e. has a different role in combination with various prefixes) is to refer to the original semantic features of the prefixes and the inferences they generate. This apparent paradox is examined in more detail in Section 6.9.2.

(10) State, process and event construals of a single base verb: *читать* 'to read'

a. по-читать (книгу)
to read a book for a little while
The prefix feature <+some amount of action> applies to an **atelic process** (unlimited duration), which is therefore interpreted as temporally limited.

b. про-читать книгу
to read (and finish) a book
The prefix feature <+some amount of (thorough) action> applies to a **telic process** (limited duration), which is therefore interpreted as extending (all the way) to the specified limit.

c. за-читать (книгу)
to begin reading a book
(i) The prefix feature <+deviant/changed> (i.e. deviant from previous condition) applies to the goal **state** achieved by reading (i.e. a change to the state-of-reading from the state-of-not-reading); the state is also a **process** with temporal extent; therefore, the process is interpreted as initiated. (ii) Alternative analysis: The prefix feature <+initiate> applies to an **atelic process**; therefore, the process is interpreted as initiated.

d. за-читаться
to become absorbed in reading
The prefix feature <+deviant> applies to the goal **state** achieved by reading, which is therefore interpreted as an unusual degree of involvement in the action.

e. пере-читать книгу
to re-read a book
The prefix feature <+span> applies to the temporal extent of the **telic process**, which is therefore interpreted as completed. The prefix feature <+individuated> applies to the **telic process**, which is therefore interpreted as having an independent prior existence (**event**), and the action is interpreted as carried to completion a second time.

6.7 Semantic networks

6.7.1 A sample semantic network for the prefix *za-*

A major claim of this dissertation is that in order to construct a semantic network for Russian and Czech prefixes, one must make reference to distinctions which are relevant in the spatial prototype. While spatial semantic features themselves lose their import outside the realm of actual space, the inferences or experiential correlations which are generated by spatial features are often retained in the semantic network for a given prefix. Some of these associations are so basic that they deserve to be included in the prototype as well. Thus we have seen for the prefix *вы-/vy-* that a shift from <-accessible> to <+accessible> is an important feature in most spatial uses of the prefix, as well as in abstract uses. In non-spatial contexts we cannot claim that the containment relationship is any longer of true significance, but the shift in accessibility remains a recoverable semantic feature:

(11) a. vy-hlasit
to announce publicly, publicize
(to make accessible to the public by speaking)

b. вы-смотреть
to spy out, locate (by eye)
(to make accessible to consciousness, etc. by looking/vision)

Thus, spatial uses of prefixes may be considered primary because they figure into prefix semantics in a privileged way. Explicit spatial features themselves, however, are not relevant in abstract uses of prefixes. The spatial prototype features of a prefix are necessary to generate other semantic features which characterize the extended semantic network of a prefix, but spatial uses do not directly structure abstract uses of prefixes. The spatial prototypes are one possible instantiation of an abstract schema (the source-path-goal schema) which can apply to any action. The spatial prototype, however, is

comparatively rich in structure and occupies a privileged position within the semantic network of a prefix.

A sample semantic network for the prefix *за-* (not meant to be exhaustive) is given in Figure 6.5, below, to demonstrate the relationship between the spatial prototype and other features in the network. The prefix *за-* was chosen, admittedly, because it is relatively amenable to analysis and possesses an unusually rich semantic structure. I do not wish to claim that we can now unproblematically subject all prefixes to this kind of analysis. Many prefixes generate only a single very abstract inference which may be indistinguishable from inferences available from other prefixes as well. In such cases we are often left with the unsatisfying result that the prefix simply indicates there has been some kind of change. Furthermore, it is not clear why some prefixes generate inferences and others do not (cf. the Goal Containment prefix *в-/v-* does not generate the inference of <+inaccessible> which might be expected, since it is the spatial inverse of *вы-/vy-*).

Simplified semantic network for the Russian prefix *за-*

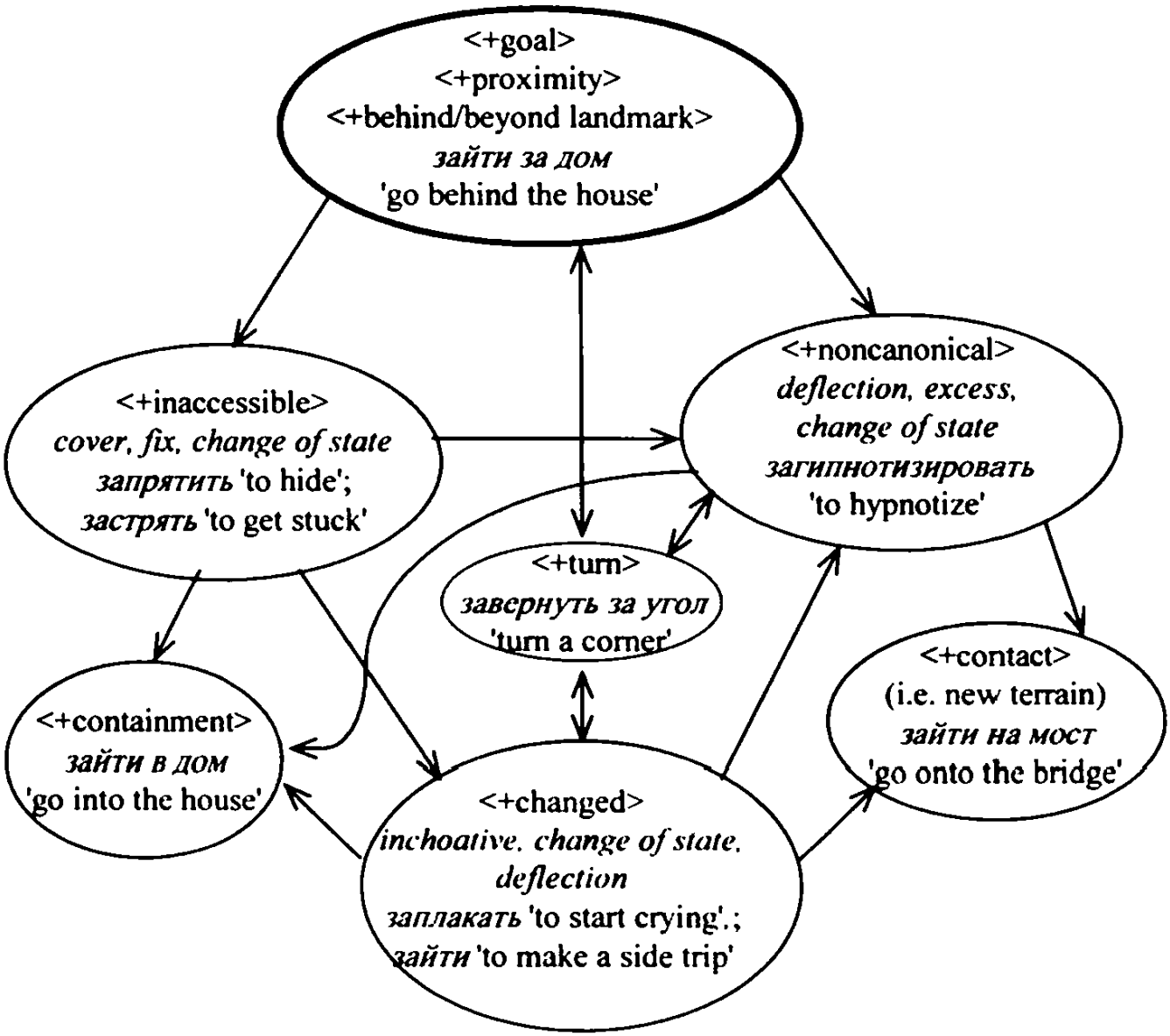
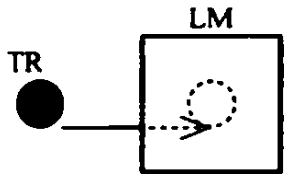
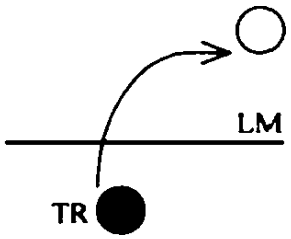


Figure 6.5. Bold oval indicates prototype, which does not necessarily represent the most common use of the prefix in spatial contexts. Terms in italics indicate names of submeanings identified by Janda (1986) which are associated with those features. Arrows indicate the direction of semantic motivation. Features apply to the goal world state. The length of arrows does not indicate the degree of association among submeanings but is simply a result of diagram layout. The submeaning *exchange* has been omitted, since it is motivated by a different basic spatial model (see Figure 6.6).

Figure 6.6 presents two spatial models of the preposition *за* which are the source of the spatial prototype. One model represents an absolute spatial relation, and the other represents a spatial relation which is relative to an observer. Figure 6.7 presents a more complex associative network of experiential associations, inferences, and possibly metaphors, generated by the spatial models given in Figure 6.6. The associative network presumably motivates the (less specific) features given in the *за*- semantic network in Figure 6.5, above.

Two spatial models of *за*



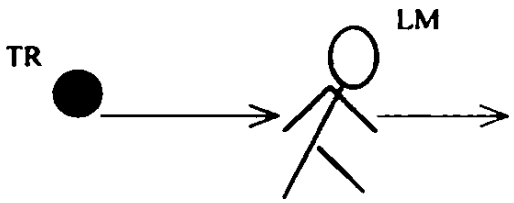


'behind'
зайти за дом
behind the house

'beyond'
жить за рекой
live beyond the river

go

Figure 6.6. a. Spatial relation is relative to observer.



'after'
бежать за мальчиком
run after the boy

Figure 6.6. b. Spatial relation is absolute.

Associative network for *за-* 'behind, beyond'

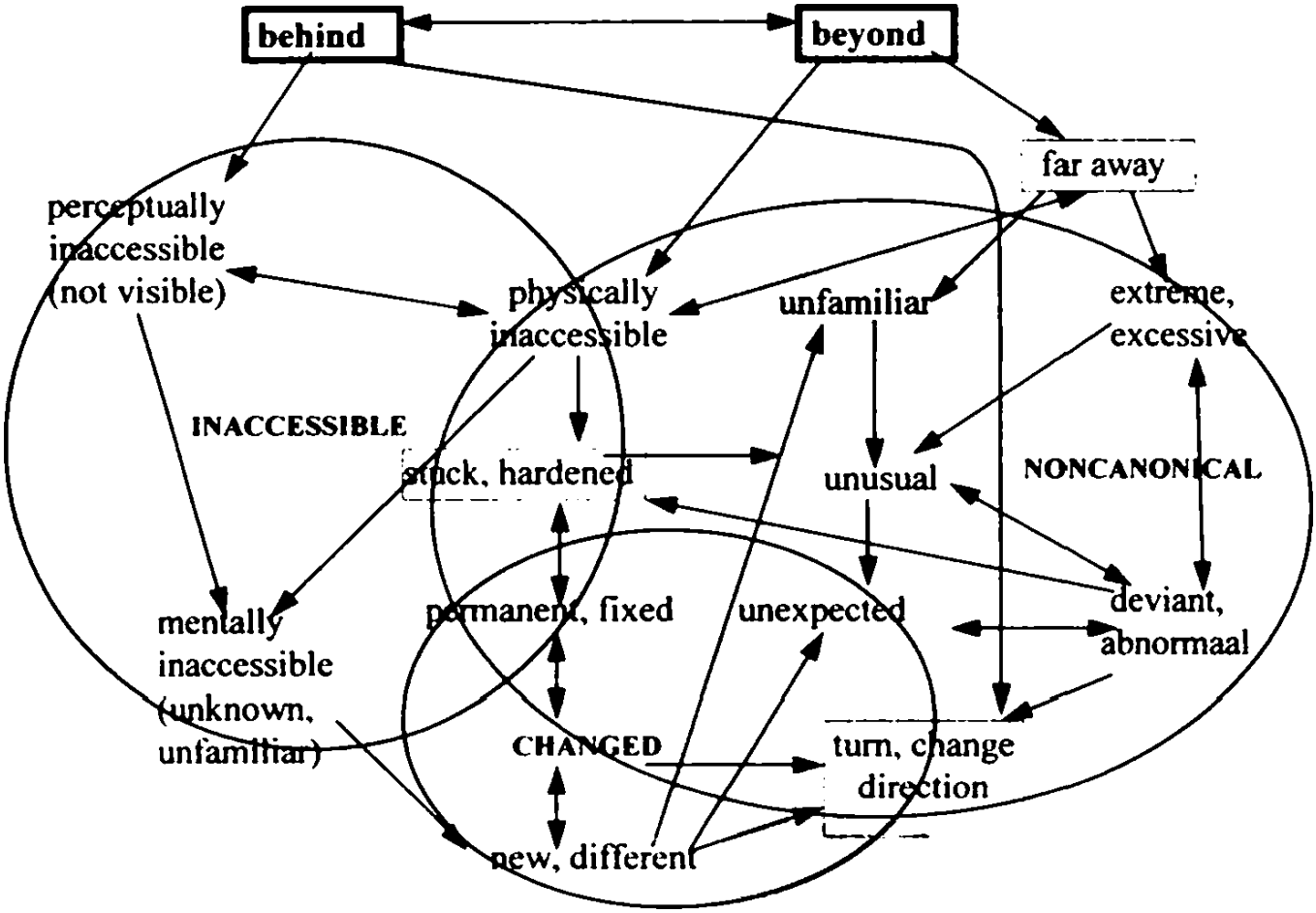


Figure 6.7. a. Words in bold boxes at top represent the spatial origin of the associative network. Light boxes represent secondary (derived) associations which are also concrete or spatial in nature. Circled areas indicate subnetworks which were identified as separate (abstract) semantic features (small caps) in the semantic network for *за-* in Figure 6.5. Notice that there is overlap among the subnetworks, indicating that the features are not fully distinct. Arrows represent putative direction of semantic extension, but arrow length is arbitrary (i.e. the length of the arrows does *not* represent the degree of relationship among associations, but is merely a result of diagram layout.)

Associative Network for *за* 'follow behind, after'

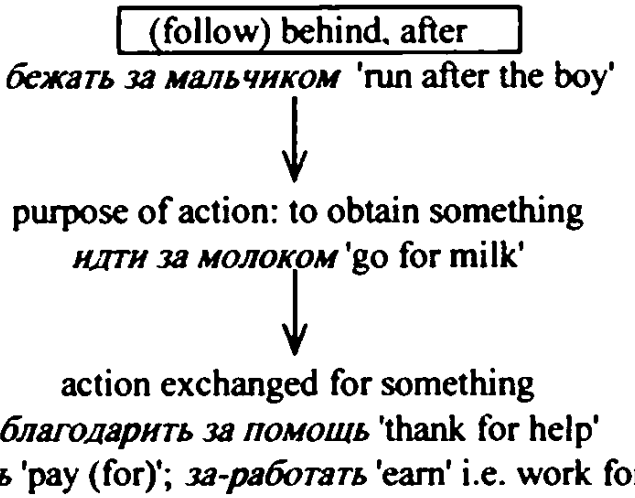


Figure 6.7. b. Words in box at top represent the spatial origin of the associative network. Arrows represent putative direction of semantic extension.

The two spatial models in Figure 6.6 presumably motivate all of the various submeanings of *за-*. (The second spatial model of *за* motivates only the *exchange* submeaning of the prefix, which was not included in Figure 6.5.) The associative networks in figures 6.7a and 6.7b are not meant to be taken as an actual representation of the relationships among semantic features of the prefix, but as merely conjectural regarding how such features might be associated in cognition. Only historical research can illuminate the actual connections among prefix uses.

6.7.2 Comments on the associative network 'behind, beyond'

The bold boxes in Figure 6.7a represent the basic spatial notions which motivate the entire associative network for *за* 'behind, beyond'. Three general realms have been identified (circled regions in Figure 6.7a) and named *inaccessible*, *noncanonical*, and *changed*. It should, nevertheless, be clear that the three subnets are not readily distinguishable from one another. Any given example of the prefix *за-* may be classified under two, or even all three, of these subnets.

The direction of arrows in the associative network is meant to represent the direction of motivation. Thus, things which are *behind* a landmark may be perceptually, and more generally physically, *inaccessible* to an observer; things which are *inaccessible*, however, are not necessarily *behind* a landmark, thus the arrow is one-way. Things which are physically *inaccessible* may be *stuck* or *hardened* in some state. Things which are *stuck* or *hardened* may be in some way *unusual*. It is not often the case, however, that *unusual* things are *stuck*, therefore this arrow is also one-way, and so on. The direction of arrows in the associative network suggests that semantic extension typically occurs by generalization, or by associations which are more or less equally general, and which commonly co-occur in experience. Generic concepts do not usually motivate much more specific ones, but there are some notable exceptions to this indicated by the features enclosed in lighter boxers.

The features in light boxes (*stuck, hardened; turn, change direction; far away*) represent concrete, physical notions. These may be characterized as special cases of the more generic associations. For instance, *turning* is a special case of *change* or *deviation* in which the change is specifically in direction of motion. Alternatively, *turning* may be considered a special case of going behind something (a corner: *идти за угол* 'to go around the corner'), one which involves directional change in addition to being behind or beyond some landmark. Similarly, being *stuck* or *hardened* is a special case of *change* or *deviation* (a change in physical form), of attaining a *permanent* or *fixed* status (having a permanent solid shape, being fixed to another object or a location), or of becoming *noncanonical* or *inaccessible* (for instance, by being physically immobile or hardened).

In these cases, more general associations of trajector inaccessibility, noncanonical status, and/or change have converged to generate a salient subcategory of concrete, physical noncanonical or inaccessible status. Where several general associations have convergent application in the physical realm, they will act to reinforce a subcase. The concrete subcase may then be prominent enough to attain a separate psychological status for speakers as a prefix submeaning. Although it appears that these are shifts from more general concepts to more specific cases, they are simply realizations of the generic concept in a concrete arena.

Since *stuck* and *turn* are concrete realizations of the more general features associated with the prefix *за-*, perhaps they should not be accorded the status of independent features or submeanings. The question of how many features or submeanings to recognize, however, is less important than understanding the mechanisms of the semantic network. One justification for including these salient subcategories is precisely because most semantic extension seems to move from the specific to the general. Thus, when a generic feature is realized in a concrete, physical context, this special case may become a new focus for generating more abstract associations. Indeed, the notion *turn* seems to have a central status in the semantic network for *за-* synchronically. As noted in section 6.5.3, *за-* is commonly used with motion verbs to indicate a side trip -- a turn off of the primary trajectory. As a spatial concept, turning is involved in a number of metaphors which serve to reinforce the semantic network:

(12) CHANGING IS TURNING:

a. погода повернула†
the weather turned (changed)

b. повернуть речь на другое
to turn conversation to something else (to change the subject)

c. повернуть жизнь
to turn (change) one's life

(13) DEVIATING FROM A NORM IS TURNING:

a. совратить с пути (истинного)
to turn (someone) off the path of righteousness (to lead astray)

b. вернутся в обычное/привычное русло; вернуться в прежнюю колею
to re-turn to the usual course (to get back on course, return to normal); to re-turn to the previous track (to get back on track)

It is easy to see how a prominent spatial concept such as *turning* might be taken as the basic spatial model which motivates the entire network. This is an unlikely prototype for several reasons, however. First, the prefix *за-* rarely indicates a change in direction independently of other contextual information, but occurs frequently in spatial contexts where there is no change of direction (cf. *за-ехать за угол* 'to go around a corner' (therefore turn); *за-вернуть* 'to turn' where 'turn' is the basic meaning of the base verb; but *за-идти за дом* 'to go behind the house'; *за-идти в дом* 'to enter the house' etc.). The preposition *за* does not indicate a change of direction at all. Second, without the additional sense *behind*, changing direction does not motivate one of the most important associations in the network -- becoming *inaccessible*. In addition, the landmark for a prefix which specifically means *turn, change direction* (in space) would be a noncanonical trajectory or direction -- an abstract entity:

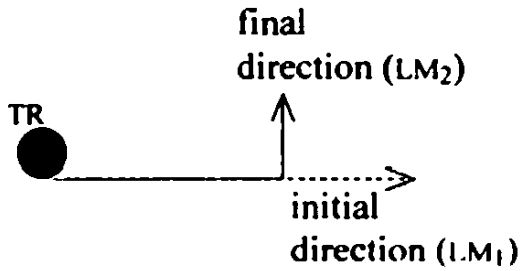


Figure 6.8. Alternative spatial model for *за-* 'turn, change direction'[4]

Given that the LM is not concrete, it is unclear whether the initial or final trajectory should be considered the primary LM. A much more efficient explanation of the semantic network is achieved by assuming that the spatial use of the preposition is also the prototype for the prefix. Then, as described above, *turning* is a prominent case of the *noncanonical* or *changed* submeanings where the canonical source state and noncanonical goal state are realized as canonical and noncanonical trajectories respectively.

[4] Note the similarity to Janda's cognitive spatial diagram for *за-* (Figure 6.4a). The associative feature *turn*, however, is distinct from Janda's submeaning *deflect*, which is more directly related to the associative features termed here *deviant* and *changed*. *Deflection*, as defined by Janda, is not limited to a shift in direction of motion, but applies equally to cases where no canonical motion/trajectory is involved, i.e. *deflection* may be relative to a canonical position or state as well. Thus, *turn* might be considered a subcase of *deflection*, but the two terms are not equivalent.

The synchronic centrality of the submeaning which Janda characterizes as *deflection* (realized in space as a change in the direction of motion) suggests a distinction between a historical spatial prototype which is the progenitor of the semantic network and a synchronic prototype which is psychologically central for the prefix. The graphic layout of Figure 6.5 acknowledges the centrality of the *turn* sense for the prefix *за-* in modern Russian.

The submeanings *stuck, hardened* and *turn, change direction* are interesting because they suggest that when several associations converge on a specific case, there can be semantic shifts from more general to more specific cases or experiences. This should not surprise us, since a concept which is very general will be meaningful in both concrete and abstract realms. A spatial concept such as *behind* can generate correlations to more abstract associations (*inaccessible, noncanonical*). These, in turn, may map back to very specific, concrete situations (*fixed, hardened*) which are quite unrelated to the original spatial concept of location behind. Thus, the logic of experiential associations does not appear to be entirely unidirectional. Although the trend is for specific features to motivate more general ones, where many general to specific associations reinforce each other, cognition does not worry about the direction of association from specific to generic or vice versa.

Finally, once a feature acquires a certain psychological status for speakers, some of its uses may readily conflict with the associations which presumably helped to generate it. Thus, something can become *fixed* in memory, by virtue of which it is always accessible (*за-пасть в память* 'to become ingrained in memory', thus accessible to thought vs. *за-быть* 'to forget' i.e. to be *inaccessible* to thought).

6.8 Semantic extension: inference, experiential correlation, metaphor and metonymy

Throughout this work I have described semantic extensions of prefixes as inferences, experiential associations[5], or metaphors, as if there is a clear-cut distinction among them. In fact, it can be quite difficult to disentangle the concept of experiential correlation from either inference or metaphor. For instance, it was stated that if a trajector goes behind a landmark, we can infer that the trajector is no longer accessible to the observer. This is not always the case, however. A trajector can go behind a small, nearby landmark and still be quite accessible, visually and otherwise. Thus, the inference of inaccessibility is only true in some situations; it is an experiential correlation with the spatial notion of *behind*, but it is not a consistent inference across all possible cases. Nevertheless, this correlation of *behind* with *inaccessible* has taken on an identity of its own as a submeaning of the prefix and thus acts as if it is a consistent inference across all cases.

We have seen several instances where metaphors appear to provide a link between semantic features. For instance *turning* is used metaphorically to indicate

[5] Experiential association might be considered inclusive of Johnson's (1999) term CONFLATION, which refers to conflation of a child's sensorimotor and subjective experiences into a single, undifferentiated experience. Conflation then motivates primary metaphors (Grady, 1997). I use experiential association in a broader sense, however, to include associations which may not be so basic to human experience.

deviance (*совратить с пути (истинного)* 'to turn (someone) off the path of righteousness, to lead astray') and non-spatial changes (*повернуть речь на другое* 'to turn conversation to something else, i.e. to change the subject'; *повернуть жизнь* 'to change one's life'). As we saw in section 6.7.2, however, *turning* is also classified as a type of change (a specific case), namely, a change in direction. A change in direction from an initial course of motion is also a very basic and visually salient form of change or deviance from an expected pattern for humans. These metaphors, then, are experientially motivated (see Grady, 1997), and it is perhaps more likely that the associative network is motivated by these correlations, not by the metaphors themselves. It remains a possibility that well defined conceptual metaphoric mappings help to motivate the semantic extensions of the prefix, but the experiential correlations which motivate the metaphors themselves would seem to provide the primary impetus behind such shifts.

What I have called experiential correlation bears resemblance to some examples of Lakoff's (1987) metonymic models, in particular TYPICAL EXAMPLES and SALIENT EXAMPLES. Thus, inaccessibility may not always be associated with going behind an object, but it is a typical or common result. Similarly, being hardened or stuck is not the only form inaccessibility may take, but it is a salient type of inaccessibility. Metonymy also accounts for the substitution of the purpose of an action for the goal of action (Figure 6.7b) in the exchange version of *за-*. Thus, one might choose to consider these extensions metonymic, since a typical or salient subcategory of the experience of *going/being behind* has been isolated and conventionalized as part of the meaning of *за-*. Nevertheless, it is not clear that all of the extensions diagrammed in the associative network can be described as metonymy; *при-клеить* 'to glue, affix'; *при-стать к группе туристов* 'to join/attach oneself to a group of tourists'; I have, therefore, preferred the more inclusive term experiential correlation. Furthermore, the majority of prefixes do not have semantic networks of the same level of complexity as *за-*. Thus, metonymy does not appear to be useful for the description of semantic network extension in all cases. For instance, we could succinctly describe the primary network for *по-* as follows:

(14)

<+path, +contact, +contour>	*implies*	TR moves some distance on the ground
		TR spends some time engaged in action
	therefore	some amount of action occurs

In certain contexts this amount of action will be explicit (perfective meaning), in others it will not (delimitative meaning), and in others it will indicate the initiation of action, but in any case we have required nothing more than a very simple inference to account for the basic uses of *по-*.

Although there is certainly much more to be said about this topic, the main point for our purposes is simply that, in attempting to reconstruct the semantic links which unify the various senses of a prefix, the boundaries between inference, experiential correlation, metonymy, and metaphor are not so clear. I have generally preferred the

first two terms, but this is not meant to indicate that metonymy and metaphor never play a role in the semantic extension of prefixes.

6.9 What is a submeaning?

6.9.1 Submeanings as contextual variants of a prototype

In previous sections and chapters we have considered a number of mechanisms which give rise to different submeanings from original prefix features. One reason it has been so difficult to capture the unity among so-called submeanings is precisely because they are generated by a variety of interactions with landmarks, base verbs, and other contextual factors, all of which obscure the contribution of the original prefix semantic features. Submeanings, then, are ultimately rich contextual interpretations of prefix semantic features which potentially involve interactions between prefix and context on several levels.

Prefix submeanings are thus contextual variants after all, but they are contextual variants of a prototype, not of an invariant. The significance of this distinction has been noted before; when a prototype is extended by conventionalization of a contextual variant (i.e. a contextually relevant inference) the original features of the prototype need not come along for the ride. This has the effect of greatly increasing the possibilities for extension (to the point that it may be difficult to identify the original connection between features). Once a new feature is added to the network, it may itself give birth to its own extensions, and these extensions to their own extensions, and so on. In this way the semantic extension of a morpheme bears more resemblance to random sprawl than to an orderly, predictable process. This is not to say that the extensions are unprincipled, but inference and/or experiential association allow speakers a significant degree of freedom for creative language use.

6.9.2 Interplay between prefix, landmark, and verb in the generation of a submeaning

We have already examined a number of ways in which submeanings may be generated for individual prefixes in this and previous chapters. At this point the process of prefix interpretation in general will be summarized, and an attempt will be made to systematize at least some of the factors which contribute to prefix interpretation.

The first layer of interaction between prefix linguistic features and landmark instantiations occurs at the concrete spatial level. *The prefix determines which aspects of a landmark are relevant.* In other words, semantic features of a prefix profile the landmark's domain or vicinity, its surface, or its capacity as a container, whether it is spanned or the trajector traces its contours, etc. at a source, path or goal point along a trajectory. However, properties of the landmark itself interact with prefix features to generate inferences, which are also incorporated into the semantic network of the prefix. *Thus, the landmark contributes back to the prefix semantic network.* For instance the size, shape, function, etc. of concrete landmarks generate inferences concerning the nature of trajector/landmark relations. We are familiar with this in the form of the inference of *thoroughness* of action (*пере-/pře-, про-/pro-*), *inaccessibility* of trajector (*за-/za-*), or *accessibility* of trajector (*вы-/vy-*) etc.

In concrete spatial uses of prefixes, verbal semantics may also contribute to interpretation of the prefix, since certain base verbs will generate quite specific inferences. Thus, verbs which mean to *cut, chop*, etc. combined with the <+span> prefix *пере-* will lead to the specific inference that the landmark has been divided in two: *пере-резать хлеб* 'to cut a loaf of bread in two.' This use of *пере-* to indicate *division* is not particularly common, however, as it applies to only a small group of verbs; thus, it probably does not deserve the status of a submeaning (or feature) but should remain merely an inference which significantly affects the interpretation of the given expression. In a similar vein, we have seen that when *за-*, <+inaccessible>, combines with verbs meaning *cover*, the entire expression will also mean *cover*, and the prefix will appear to have a new sense or feature. Once again, however, this usage is not productive with other verbs and might best be considered a contextually obscured realization of the feature <+inaccessible>.

A recurrent theme in the contribution of context to prefix interpretation has been the critical role of perspective. In many cases the inferences which are conventionalized depend on a particular observer perspective. Thus, for instance, the inference of *inaccessibility* associated with *за-/za-* can only be generated by a relative notion of location behind an object which presupposes an observer on the opposite side of the landmark from the trajector. Similarly, the notion of *accessibility* associated with *вы-/ vy-* is dependent on a perspective which places the observer outside of the container LM. Thus we see that certain perspectives are privileged with regard to generating abstract senses of a prefix. In addition, assumptions regarding trajector intention can be central to prefix interpretation and semantic extension as well. We saw this in Chapter 4 with the prefix *о(б)-/o(b)-*, where different inferences arise depending on whether the trajector intended to interact with a landmark (and thus explores it thoroughly) or did not intend to interact with a landmark (and thus expends effort to avoid it). Notice that these perspectives cannot simply be generated from the spatial relationships given by the prototype schema, but crucially involve a subjective interpretation of a spatial scene.

At the next level of interaction, when the prefix is used abstractly, these new features generated by inferences in the spatial domain are available as a possible interpretation of the prefix. Thus, *the prefix now has a new feature for determining how to construe a situation (landmark)* (*вы-думать* 'to invent; to fabricate' i.e. to think something into existence, make something accessible by thinking of it). In addition, at this level the spatiotemporal features, <source>, <path>, and <goal>, will determine whether the prefix feature is relevant to the verbal process (process construal), or to the state which results from, or is described by, the verb (state construal). If the verbal process itself is relevant, different interpretations, or submeanings, may arise depending on the status of the base verb as atelic or telic. Thus, *по-* indicates that some amount of action has occurred, leading to a temporal delimitative interpretation with atelic base verbs. With telic base verbs, however, the predicate itself provides the appropriate limit for the amount of action, and the prefix is interpreted as an empty perfective.

Finally, the new combination of prefix and verb may generate its own inferences (cf. *за-работаться* 'to overwork oneself': a trajector attains a deviant state by engaging in a normal activity, therefore s/he has performed this activity to *excess*.) *This secondary interpretation may itself become fixed in the semantic network of the prefix.*

generating yet another new semantic feature. Thus, the *excess* interpretation appears to be reasonably common with the prefix *за-* and is a good candidate for a submeaning. Inferences at this stage may also convert a prefix which construes the verb as a process to a prefix which construes the verb as a state or vice versa. In other words, although we expect the Goal prefix *за-* to indicate that a noncanonical state holds at the end of an action, in the case just mentioned (*за-работаться* 'to overwork oneself') the inference turns the focus to the verbal process. We can describe this as the (new) feature <+excess> being applied to the verbal process of working (*работать* 'to work').

This interactive interpretative process can theoretically continue to chain off in various ways and eventually lose all (obvious) contact with the original spatial prototype. We have also seen how this process can lead to contradictory inferences for a single prefix and coincident inferences for different prefixes. In Chapter 3 we saw that inferences from the source containment schema give rise to a <+unconfined> and a <+accessible> feature for the goal state, and that these features occasionally come into conflict. In Section 6.5.5, above, we saw how at least four different prefixes could generate the *excess* interpretation in Russian. Conflicting or coincident features may arise from the same or different levels of this interactive process (i.e. landmarks at the spatial level may generate inferences which conflict with one another, or they may conflict with inferences generated at the abstract level, as in the example in Section 6.2.2, above: *за-пасть в память* 'to become ingrained in memory' vs. *за-быть* 'to forget'). Given the fact that many of the inferences or associations which are conventionalized and included in the semantic network of a prefix inherently entail a particular perspective or subjective interpretation of a spatial schema, certain perspectives are clearly privileged as regards semantic extension. Which perspectives and corresponding inferences are conventionalized and included within the semantic network of a prefix cannot be predicted from the spatial prototype itself.

6.9.3 Submeanings and convention

One question which arises in the discussion of prefix submeanings is how a derived semantic feature achieves the status of a submeaning. Some of the links between submeanings are more accessible to metalinguistic analysis than others, leading to potential for dispute concerning the number of submeanings. By examining the types of mechanisms themselves, one might claim to distinguish the appropriate number of submeanings, but even so, it is impossible to determine when a new usage has become so firmly established that it should simply be considered an additional semantic feature of the prefix. For instance, the inchoative meaning of *за-* apparently arises from a deviant end state or change-of-state submeaning, yet the inchoative usage is extremely common and is probably psychologically divorced from the *deviance* or *change-of-state* usages in the minds of speakers. Thus, it is preferable to supply a new feature, <+initiate>, in the extended semantic network, indicating the mechanism of extension, but also indicating that the usage has the status of an independent feature.

Attaining the status of a submeaning, then, may be considered dependent on the degree to which speakers themselves recognize the relationship among the uses of a prefix. In other words, when a prefix is used with an inferential meaning in a context which does not itself generate that inference, the inference has become fixed as a new

feature in the semantic network of the prefix. At this point the feature is already conventionalized in the speech community and in the minds of individual speakers; the relationship between the original context and the new semantic feature generated by that context is essentially lost. The research of Bybee, Perkins, and Pagliuca (1994) suggests that the semantic extension of grammatical morphemes by contextually generated inferences occurs by gradual creep from context to context until the inference is finally generalized to contexts which could not have originally generated such an inference. Presumably, then, conventionalization of a particular prefix usage in the greater speech community itself will be gradual, although for any given speaker conventionalization of that usage may or may not have been realized.

6.10 Types of prefixation

6.10.1 Standard classification

In the previous section we saw how interactions among prototypic prefix spatial semantic features and (concrete) landmarks, the semantics of the base verb, perspective, and other contextual factors influence the interpretation of the prefix itself and account for many submeanings associated with a prefix. In this section we will briefly examine how these semantic processes affect the interpretation of a prefix as derivational vs. grammatical in its various realizations. Prefixes in Russian have typically been assigned to three categories, depending on the degree of semantic content they contribute to the newly derived verb form. Thus, lexical prefixes significantly change the meaning of the base verb in some way, resulting in the creation of a new verb altogether (with accompanying secondary imperfectives formed from this new verb). Aktionsart prefixes alter the characteristics of the verbal process itself in some way, but do not create wholly new verbs. Often these will not form secondary imperfectives. The third category is the so-called empty or perfectivizing prefix which was discussed in the previous chapter. Perfectivizing prefixes do not change the meaning of the base verb in any observable way other than to create a perfective (and thus such perfectives do not form secondary imperfectives -- at least not in Russian[6]). Given the fact that this classification of prefixes along a derivational-grammatical axis is widely utilized, it seems worth considering whether the specific semantic mechanisms for generating prefix submeanings which have been documented in this study are linked in any systematic way to the status of the prefix as lexical, grammatical or Aktionsart.

6.10.2 Space and prefix classification

In spatial uses, in which prefixes typically retain their spatial features <source>, <path>, or <goal>, and <proximity>, <contact>, or <contain>, newly derived prefixed verbs will usually have the status of new words and prefixes will be considered lexical. This is because the prefixes contribute this additional spatial information to the basic

[6] In Czech such verbs do, in fact, appear to form secondary imperfectives on occasion, cf. *půjčit/vy-půjčit → vy-půjčovat* 'to lend.' One could argue that there must be some subtle, semantic difference between the unprefixed imperfective and the prefixed secondary imperfective. While this is perhaps true, it is difficult to imagine why both forms would readily coexist. One possible solution to this will be suggested in Section 6.15.2.1 in this chapter.

content of the verb. The simplest and most obvious case of this is with verbs of motion themselves, where, for instance, the prefix *вы-* adds the prototype structural information that the source point of motion is a container: *вы-йти* (out-walk) 'to exit.' In actual space, outside the realm of motion verbs proper, this type of lexical derivation is common also, cf. *мыть* 'to wash' vs. *вы-мыть* 'to wash out,' *с-мыть* 'to wash off,' *от-мыть* 'to wash away,' etc.[7]

Despite the fact that this type of prefixation is usually lexical, semantic overlap between the prefix and the base verb can and does occur in spatial uses of prefixes. In these cases the prefix does not appear to contribute any additional meaning to the verb. This type of prefixation then appears to be empty and must be classified as grammatical, despite the fact that the motivation for choosing that particular prefix may be quite clear. An example of this type of prefixation is *по-крыть* 'to cover,' where *по-* perhaps retains its spatial meaning, indicating a <+contact, +contour> relation between concrete trajectors and landmarks. One could also imagine a spatial motivation for *вы-пить* 'to drink up,' such that *вы-* indicates that the liquid has come completely out of a vessel due to drinking. Drinking, however, appears to always have this effect on liquids in vessels. Thus, there is no new information added by the prefix itself concerning the containment relationship. In spatial uses of prefixes, then, the addition of the (spatial) semantic content of the prefix to a base verb can generate lexical prefixation and grammatical prefixation, but does not produce Aktionsart prefixation.

6.10.3 Abstraction and Aktionsart

The fact that spatial prefixation does not produce Aktionsart prefixation is not particularly surprising. As long as the prefix semantic features apply only to concrete spatial landmarks, prefixes will not alter the interpretation of the base verb itself. In order to produce Aktionsart prefixation, the prefix features must apply to the verbal process itself, thereby altering the process in some way (*по-читать* 'to read for a while'). An Aktionsart interpretation thus requires abstract prefixation, where prefix features may be relevant to either the verbal process itself, or to the state which obtains as a result of that process. Nevertheless, as with spatial uses of prefixes, semantic overlap between prefix features and the verbal process itself may also produce empty or grammatical prefixation (*про-читать* 'to read through'). When prefix features are applied to the final state which results from the process (*за-писать* 'to record,' i.e. to fix by writing; *vy-hlasit* 'to announce publicly,' i.e. to make accessible by speaking), lexical prefixation is likely, although once again semantic overlap may produce grammatical prefixation (*за-жарить* 'to roast, fry (up)'; *vy-půjčit* 'to lend (out)').

From this picture we can suggest that Path prefixes are more likely to produce Aktionsart prefixation and Source/Goal prefixes are more likely to produce lexical prefixation. Once again, however, this cannot be treated as more than a tendency, as we

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[7] In some uses the source status of these prefixes is recognizable, such that this is not just washing, but rather a washing (of dirt, etc.) *away from* some source-landmark. Furthermore, the containment and contact status are occasionally viable for *вы-мыть* and *с-мыть*. More commonly, however, other (inferential) associations account for the lexical distinctions. *От-мыть*, for instance, does *not* mean 'to wash away from the vicinity of'. In this case the proximity designation of the spatial prototype is no longer relevant, but the more general feature <+dissociation> is.

have clearly seen that contextually generated inferences can shift a process construal to a state construal or vice versa (*пере-думать* 'rethink' > 'to change one's mind as a result of thinking through again'; *за-смеяться* 'to enter a new state due to laughing' > 'to start laughing'). This is simply another way of saying that inference can induce lexical or Aktionsart prefixation where the Source, Path, or Goal status of the prefix might lead us to expect something else. It also suggests that the distinction between lexical, Aktionsart, and grammatical will always remain fuzzy. For instance *за-читаться* 'to become engrossed in reading,' seems to retain more of a deviant goal state interpretation, whereas *за-работаться* 'to overwork oneself' seems to shift focus back to the process, implying that it was carried out to excess. Thus, the former might be classified as lexical prefixation and the latter as Aktionsart. Similarly, *по-* indicates that some amount of action occurred, and is therefore apparently an Aktionsart prefix par excellence. Telic base verbs, however, provide semantic overlap in terms of the definition of *some amount*, thus giving the empty perfective interpretation. This last example suggests another general tendency -- Aktionsart prefixation will typically be correlated with an atelic or weakly telic interpretation of the base verb. Once again, however, the correlation is not absolute (cf. *по-йти на работу* 'to set out for work,' where *идти на работу* 'to go to work' is clearly telic).

The analysis presented here thus basically agrees with the viewpoint that prefixation is primarily a process of word derivation and that grammatical (empty) prefixation can always be treated as a kind of semantic overlap between prefixes and base verbs. Perhaps the main point of interest in this analysis for the purposes of prefix classification is simply that Aktionsart prefixation is possible only in abstract uses of prefixes.

6.11 Prefixes as verbal classifiers

Janda has suggested that prefixes act something like verbal classifiers, giving an abstract outline to the action, where the verb and complements fill in the specific details. The research presented here has shown that the prefix has considerably more freedom from the verb than is suggested by this notion. The prefix-as-classifier notion works fine for actual spatial uses and metaphorical uses of verbs, where the metaphor creates a direct relation between prefix, verb and complements:

(15) a. пере-водить ребенка с одной стороны улицы на другую
to lead a child from one side of the street to the other

b. пере-водить статью с одного языка на другой
to translate an article from one language to another

Thus, one could argue that a kind of classificatory operation has occurred, such that the two actions are perceived as being of a similar structural type. As we have seen, however, depending on the identity and construal of the landmark and/or verb, the results of combining a prefix and a verb may be quite diverse. Thus *пере-* 'repeat' in expressions like *пере-писать письмо* 'to rewrite the letter' is structurally quite different

from either of the expressions given above. It might be reasonable to suggest that individual submeanings of a prefix represent classificatory-style operations on a verb plus its complements. Nevertheless, prefixes clearly do not simply assign verbs to classes. In fact, submeanings of different prefixes may classify actions in the same way. This is precisely what we see in the case of the submeaning *excess*. Although the four prefixes described by Janda originate with different spatial prototypes, they all (via different routes of extension) come to classify verbs in a similar manner, with the resultant interpretation that an excess of action relative to some standard has occurred. This is equivalent to the observation that all prefixes indicating *excess* may be represented by the same schematic diagram, and there is no basis for distinguishing them according to the dimensionality, numerosity, or identity relations of landmark and trajector, etc. There is a basis for distinguishing them hidden within the nuances of the extended semantic network for each prefix, and probably also within the systemic pressures of prefixes bumping up against each other in semantic space, but this does not constitute a classificatory operation with respect to the verb.

Prefixes also allow ambiguous and/or multiple reference. We have seen that for some examples of *за-* it is difficult to distinguish between a noncanonical goal state vs. a deviance by virtue of initiating a new action (*за-болеть* 'to fall ill'). Similarly, *по-* may simultaneously indicate that a surface contour is covered in space and that a telic action has been carried to its logical endpoint (*по-крыть* 'to cover'). The fact that trajectors and landmarks for prefixes are not the same as those for verbs, that the reference, as well as construal, of the prefix trajectors and landmarks is quite variable, and the potential for multiple motivation for prefixes which rely on slightly different construals of the same content all point to the conclusion that prefixes do not act as verbal classifiers; they have considerable independence from the verb and interact with base verbs in a number of different ways.

6.12 Abstract prefixes: literal or metaphoric?

The aim of the research presented here, as stated in Chapter 1, was to establish the spatial semantic prototypes for several common prefixes in Czech and Russian. The primary motivation for engaging in this research is the frequent claim that all abstract uses of prefixes are metaphorically based on spatial uses. It is now time to consider this claim in light of the analysis presented in this study.

In the simplest cases of apparent metaphor, the landmark may be an abstract nominal acting as a verbal complement. In these cases the entire expression is generally metaphoric:

(16) Эти слова за-пали мне в память[†]
These words *za*-fell into my memory
These words are ingrained in my memory

In such clear-cut cases of metaphor, the prefix itself need not be considered metaphoric, as it carries one of its ordinary senses, namely that something has become fixed or preserved in form. The fact that this condition is non-spatial, involving the fixing of

words, a concept, etc. in memory does not make the prefix metaphoric. Rather the prefix+verb complex as a whole is metaphoric. A similar argument applies to expressions which are not metaphoric as a whole. For instance, Janda presents the following example as a metaphoric use of the *cover* submeaning of the prefix *за-*, since sounds are being masked as if they were physical objects:

(17) Звуки леса за-глушались ревом двигателя и болтовней сотрудников†
*The sounds **were drowned out** by the roar of the engine and the chatter of the workers* (Janda, 1986:124)

According to the analysis given here, however, this is a regular instantiation of the prefix feature <inaccessible>. In this case sounds are made inaccessible to theoretical observer audition by louder sounds, and there is no reason to assume that the concept of auditory inaccessibility must be metaphorically based on the concept of visual inaccessibility. One might argue that the use of a generalized sense of a concept such as *inaccessibility* is metaphorically based on simple physical inaccessibility, such that the metaphor is the means of semantic extension for a polysemie prefix morpheme. While this is certainly possible, the associative network presented in Section 6.7.1 is not particularly suggestive of metaphoric extension in most respects; rather, the links among the various uses of the prefix seem to be at the level of the experiential correlations which motivate metaphors themselves. Furthermore, *за-* is, in fact, atypical in comparison to other prefixes with regard to the complexity of its associations and polysemy. While it is possible to imagine that some of the extensions of meaning for *за-* are metaphorically motivated, most prefixes do not appear to extend by metaphor at all.

It should be pointed out that to a large extent the validity of the interpretation of a prefix as literal or metaphoric simply depends on the definition of metaphor itself. If any kind of unidirectional mapping from one domain to another may be considered metaphor, it is perhaps valid to treat all abstract uses of prefixes as metaphoric. I would like to suggest, however, that the relationship between the spatial uses and abstract uses of prefixes is better served by the notion of inference plus generalization as it is presented by Bybee, Perkins and Pagliuca (1994). The term *metaphor* can then be reserved for mappings between more specific source and target domains, rather than from various spatial realizations of a prototype to all other domains in which a prefix is used. In the model of semantic extension presented by Bybee et al, inferences generated in concrete situations are gradually generalized due to overlap with situations in which more abstract inferences are also relevant. Although verification of this suggestion ultimately requires an evaluation of the historical development of prefix usage in various contexts, the associative network presented in Figure 6.7 is more suggestive of this kind of development than of extension by metaphoric "leaps".

6.12.1 The lexical-grammatical continuum and the metaphor question

Bybee (1985) presents lexical meaning and inflectional meaning as positions on a continuum, such that lexical meaning is more basic or material (in Sapir's terms) and idiosyncratic, whereas inflectional meaning is highly abstract, or relational, and

generally affects entire word classes (e.g. all nouns or all verbs). In order to affect such large, variegated word classes in a regular way, the semantic content of inflectional morphemes must be extremely abstract indeed. Derivational processes fall somewhere in between these two extremes; derivational meaning is somewhat abstract and applies to a restricted set of lexical items which share features appropriate for modification by the derivational morpheme in question.

Slavic verbal prefixation is often given as an example of a process which is both derivational and inflectional in character. It is derivational because it frequently derives new words, inflectional because it creates perfective verb forms from imperfective simplex verbs. All prefixes in Czech and Russian (with the exception of Czech *po-* with determinate verbs of motion) perfectivize, but as we saw in the discussion of types of prefixation in Section 6.9.1 above, not all prefixes derive new words, i.e. create verbs which can be semantically distinguished from the unprefixed simplex verb, aside from being perfective.

It has been suggested here that Czech and Russian prefixes all share an extremely abstract structure, which may be described alternatively as a source-path-goal schema plus a landmark, or as the feature <+telic> (and ultimately <+perfective>). This is the inflectional content of prefixes, which is applicable to the entire category of verbs precisely because it is spatio*temporal* and not simply spatial. The derivational content of prefixes must be attributed to the greater semantic network of each individual prefix, which is filled in by a number of concrete spatial features, resultant inferences or experiential associations and, perhaps, metonymic and metaphoric extensions. Some prefixes have rather extensive semantic networks, others rather impoverished ones, and all prefixes may, in effect, be stripped of their content down to the bare bones of the invariant inflectional capacity that they all share.

I would like to point out a correlation between these derivational/inflectional properties of prefixes and the interpretation I have chosen concerning the literal vs. metaphoric character of prefixes. Metaphors are generally considered a kind of semantic leap in which one (usually more concrete/highly structured) domain is used to characterize or structure another domain. One kind of metaphoric mapping which is relevant for our purposes is precisely a mapping of inferences across domains. Nevertheless, as mappings extend to larger and larger sets of lexical items, as is the case for derivational and inflectional morphemes like prefixes, the semantic content must become correspondingly more abstract. Abstract meaning, in turn, is readily interpreted as literally shared by all of the lexical items for which it is potentially relevant. Thus, what looks like metaphor at the lexical level looks less and less like metaphor at derivational and inflectional levels. In other words, what is called metaphor at the lexical level is generally perceived as a literal classificatory judgment for inflectional morphemes.

This is related to Rumelhart's (1993) observation that literal and metaphoric language are not distinct modes of expression; rather, they form a continuum. Similarly, approaching the topic from a historical perspective, Mac Cormac (1985) points out that expressions which begin as metaphors may often evolve into (literal) statements of classification. This process is commonly reflected in the semantic range of polysemic lexemes. Thus, I consider the question concerning the metaphoric status of prefixes to

be primarily one of degree, not of kind. Because prefixes are derivational and inflectional morphemes which apply to a very large word class (collectively, in essence, to all verbs), it seems likely that prefix meaning is felt to be of a more literal, classificatory kind rather than a metaphorical structuring of, say, mental inaccessibility on the basis of physical inaccessibility.

There is additional support for this in the fact that things like mental states are just as experientially basic for humans as space. Furthermore, even though the spatial model of *за* 'behind' immediately seems to imply only visual inaccessibility, the 'beyond' version easily implies auditory and more general physical inaccessibility, and these together largely overlap in many cases with mental inaccessibility, and so forth. The basic point is simply that the interpretation of prefixes as literal or metaphoric is not clear-cut, and perhaps not even of great significance. Literal semantic processes and metaphoric ones are extremes of one and the same kind of thing, in the same way that lexical and inflectional processes may be considered as such. The distinction between literal language and metaphor is valid for the same reasons that one considers the lexical/inflectional distinction valid: not because they are inherently different kinds of processes, but because they may have recognizably different effects within language which are psychologically real for speakers. Since prefixes are primarily derivational morphemes, the interpretation of prefixes as literal or metaphoric may appear somewhat ambiguous. I prefer to consider prefixes as primarily literal in the interest of presenting a psychologically real perspective from the point of view of native speakers.

6.12.2 Non-spatial experience can also structure meaning

The decision to consider abstract uses of prefixes as literal rather than metaphoric may not have major implications for understanding prefix meaning. It amounts to saying that spatial uses of prefixes structure abstract uses only indirectly, via an extension of the prefix semantic network that is not usually metaphoric in nature. Nevertheless, there may be good reason not to consider spatial uses as directly structuring abstract uses. Instead, we may view spatial prefixes as a privileged subcase of a more abstract multi-modal schema shared by all prefixes. One reason is simply that many abstract uses of prefixes involve such things as the shifting of mental states over time, which are no less basic to human experience than is motion. Thus, there is no reason to assume that a change from an initial mental state to another one over time is metaphorically structured by motion from a source point to a goal point in space. Rather, the two experiences are equal participants in an analogical mapping that acknowledges a minimal shared abstract structural organization in human experience, namely, a temporal one. In other words, both motion and shifting mental states involve a change over time. (In some cases the change may simply be the passage of time itself.)

A further reason for avoiding the claim that actual spatial uses simply and directly structure abstract uses is that inferentially generated features can map back to space. It seems preferable to avoid the claim that space is metaphorically structuring itself. For example, the use of *за-* to indicate entry into a container or onto new terrain may be related to the original spatial prototype (as a Goal Proximity prefix which is also <+behind LM>) through a series of associations, but the goal containment or goal

contact relation in these cases is not best characterized as a metaphoric goal proximity relation. Finally, at times non-spatial elements appear directly in spatial prototypes of prefixes. For instance, we have seen that the prefixes *при-* and *у-* involve the concept of domain, which may have an experientially basic interpretation as accessibility within a sphere of influence (domain), but this is not a simple spatial construct. Nevertheless, domain entry also represents the establishment of a relationship (i.e. generates the feature <+association>), thus in spatial contexts it may map to proximity, contact or containment (*при-паять* 'to solder, braze onto'). In abstract contexts *при-* often indicates primarily <+accessible>, such that it overlaps with *вы-* considerably (which is not unexpected given the analysis presented in Chapter 3: cf. *при-думать* 'to think up, invent', i.e. to make accessible by thinking; *при-помнить* 'to recollect, recall', i.e. to make accessible to thought). This reminds us that basic experiences other than spatial relations can structure both concrete and abstract phenomena.

6.13 Summary: A comparison to previous work

To recapitulate the viewpoint presented here, I suggest that all prefixes make reference to a highly abstract (embodied, multi-modal) schema (source-path-goal schema/trajectory) which may map to all verbal actions. Actual spatial uses of prefixes are subcases of this more general schema, but they possess a richer structure and thus occupy a privileged position as the prototype for the semantic network of individual prefixes. This privileged position does not, however, constitute one of direct metaphoric structuring of abstract domains. Rather, inferences or associations arising from the spatial uses have been generalized and incorporated into the semantic net of each prefix. These associations may then become the primary semantic content of the prefixes in abstract uses. They may also generate their own contextually relevant inferences, which may in turn become part of the extended semantic network. Since prototypes do not specify necessary or sufficient conditions for inclusion in a category, features from the prototype may be selected and/or dropped at will. Thus, in abstract uses, spatial features such as <proximity>, <contact>, and <contain> will vanish. Inferentially generated features, however, will have relevance in non-spatial domains. <Path> and <goal> designations may be preserved, since these concepts apply to temporal domains as well as spatial ones and thus are relevant to any verbal construction. Nevertheless, inference will tend to obscure the original Source, Path, or Goal status of the prefix as well.

The approach and some of the conclusions presented here bear some resemblance not only to Janda's work on Russian prefixes, but also to Lindner's (1981) and Brugman's (1981) analysis of verb particles in English. Although a detailed comparison to Janda's work has already been made, some of the differences between conclusions reached in this work and in previous works should be recapitulated and clarified. First, although I have demonstrated that context is often crucially relevant in generating the semantic network of a prefix, it is relevant in a significantly different way than presented in previous cognitive approaches. Specifically, there is little support for the notion that dimensional or orientational transformations performed on landmarks or trajectors, identity relations of landmarks and trajectors, or mass/count distinctions as abstractions should be considered as part of a prefix semantic network.

This is information which is provided by context and may affect prefix interpretation in any given case, but remains outside the semantic network of the prefix itself. Such information typically does not structure further uses of prefixes.

The manner in which context does appear to enter directly into the semantic network of a prefix, and alter the shape of that network, is in the form of inferences or experiential correlations generated by salient or typical subcases of the prefix prototype. Such subcases may be tangentially related to things like landmark dimensions, but this does not justify inclusion of an abstract image schema of a particular dimension in a prefix semantic network. For instance, it is difficult to imagine that the inference of *inaccessibility* arises from a one-dimensional landmark in actual space, since such a landmark would not be likely to make something inaccessible to a human being. Nevertheless, this does not warrant the conclusion that the appropriate image schema for the prefix *за-* involves a two-dimensional landmark. Any number of *actual* two or three dimensional landmarks might generate the inference of inaccessibility, and any number of actual two or three dimensional landmarks may, in fact, not generate such an inference (cf. when a store clerk goes behind a three-dimensional counter in a store in order to access the cash register, the clerk becomes accessible in precisely the manner necessary to achieve one's goals in a store context, i.e. to make a purchase).

The point is that it is not sufficient (or efficient) to speak of abstract schematic structure in describing the semantic network of a prefix. Abstract schemata cannot differentiate among prefixes, and such a description results in a proliferation of presumed metaphoric uses of prefixes which can be described more succinctly by generalized inferences. In fact, it seems that the schematic structures presented by Janda, Lindner, and Brugman as responsible for the semantic network of a prefix or verb particle actually describe the *effect* of combining a prefix with specific trajectors and landmarks (i.e. contextual uses of a prefix) and do not represent part of prefix meaning. Clearly certain aspects of common contextual realizations of a prefix do become conventionalized as part of prefix meaning, but these aspects are not represented efficiently or realistically by image schematic transformations.

For instance, the example *У-2...пере-вернулся в воздухе* 'the U-2...flipped over in the air' (Janda, 1986:171) is described by a cognitive spatial configuration in which the trajector is identified with one end of a (solid) landmark, such that when the trajector moves, it rotates on its axis and thus turns over. Instead of positing a special schema to handle this usage, if one assumes that the prefix simply contributes the notion of movement from side to side, given the linguistic context of a reflexive base verb meaning 'to turn', we can see that the trajector must have turned from one of its own sides to the other. Exact interpretation of this will depend on both the spatial and functional properties of a given trajector. An airplane will be expected to move from an upright position to upside-down, whereas a piece of paper will turn from one flat side to the other, etc. Thus, the image schema itself is generated by application of prefix features to precise contexts and not the other way around.

The primary significance of this distinction is in determining the role of metaphor. The assumption that networks of specific image schemata can, in and of themselves, generate the semantic network of a prefix tempts one to view all non-spatial uses of a morpheme as metaphorically based on the spatial properties of

schemata. I have already argued in some depth against the notion that non-spatial concepts are actually understood as one versus two dimensional, or as surfaces or containers, etc. Although I do not question the existence and relevance of abstract schematic structure in reasoning processes, I do not think such abstract structures are sufficient for distinguishing among the various prefixes in either Russian or Czech.

6.14 Prefixation and Aspect

In Section 6.12.1 above it was proposed that all prefixes share one common feature: they impose a telos on a verb (regardless of the base verb's original status as regards telicity). This telos comes about by the association of the spatial and spatially derived semantic features of a prefix with the more abstract spatiotemporal features of <source>, <path>, and <goal>. A mapping relation which associates some condition with a goal point automatically creates telicity. Telicity in and of itself does not necessitate a perfective interpretation of an action and cannot explain why prefixes perfectivize simplex verbs in Russian and Czech. There is certainly nothing incompatible about telicity and imperfective status. Nevertheless, many verbs are already telic without a telicizing morpheme. Thus, whenever unprefixed and prefixed telic forms are present side by side without an appreciable semantic difference, one form is available to indicate not merely a telos, but its achievement. In fact, Bermel (1997) has shown that in the rise of aspect prefixed telics are the first forms to receive a perfective interpretation. Once this opposition was established for telic verbs, it slowly spread to the remainder of the lexicon, such that the invariant property of prefixes, originally simply a telos, shifted to a perfectivizing property (i.e. an indication that the telos has been achieved).

Thus, while telicity often tends to suggest perfectivity, in Slavic languages the presence of a telicizing morpheme in the form of verbal prefixes has (in part) allowed for the development of an imperfective/perfective distinction to arise. (As mentioned previously, the perspective presented here generally agrees with the viewpoint that perfectivization is primarily a by-product of the word derivation process. Nevertheless, it involves a secondary step in its own right -- a shift from a telic interpretation of a prefix to a perfective one.)

It is important to note, however, that prefixes were not always inherently telicizing. Bermel (1997:250) states that there are two basic types of prefixation in Old Russian: spatial and telicizing. Spatial prefixes "comment on the location or configuration of the theme" (i.e. trajector), whereas telicizing prefixes "comment on the unfolding of the act itself". Telicizing prefixes thus correspond to what I have called *abstract prefixation*. The observation that only abstract prefixes are telicizing is important, because in order for the feature <+telic> to be generalized to all prefixes, abstract uses of prefixes must become quite common. Spatial uses of prefixes cannot account for the significance of the <+telic> (and later <+perfective>) feature associated with prefixes. This fact is obscured in Modern Russian, since prefixes have taken on primarily abstract meanings, even with statives: *пере-лежать* 'to lie too long,' but *not* 'to lie across.' It is precisely for this reason that the spatial prototypes of prefixes are difficult to discern in Modern Russian, and that verbs of motion are particularly useful

in assessing them. Because determinate verbs of motion are inherently telic, spatial prefixation is preserved in most cases. Thus, the notion that prefixes always confer a telos on a verb reflects a purely synchronic evaluation of prefixes.

6.15 Czech vs. Russian

The comparison of narrative use of motion verbs by native speakers of Czech and Russian has revealed a number of ways in which Czech and Russian verbal prefixation differ, at least in this particular context. Russian speakers tend to use more prefixed verbs of motion in general (76% prefixed verbs in Russian database; 60% prefixed verbs in Czech database). Among prefixed verbs, however, Czech speakers used a wider variety of prefixes with less semantic specificity, whereas Russian speakers used a smaller inventory of prefixes with much greater semantic specificity (as measured by the number and kinds of prepositional phrases which appeared with each prefix.) In general, prepositional phrases and adverbial modification were also more common in Czech.

Although Russian exhibits a significantly greater percentage of prefixation overall, it is important to note that this finding holds only in the past tense. In the present tense there is slightly more prefixation in Czech (55% of present tense verb tokens are prefixed in Czech, 50% in Russian). This suggests that the higher rate of prefixation in Russian is due largely to the necessity of making an aspectual distinction. In motion contexts in particular, where the prepositions bear the greater burden for making spatial distinctions in both languages, prefixes are somewhat redundant and may be important primarily for distinguishing aspect. In Czech, however, unprefixed verbs of motion in the past tense may be either imperfective or perfective, whereas in Russian the imperfective/perfective distinction is obligatory. Thus, Czech speakers need not choose a prefixed form in order to express the perfective aspect. In contrast, we will see shortly that Czech speakers have the option of distinguishing aspect in the present tense, where the imperfective is the only choice in Russian. The propensity for abstract prefixation in Russian even in spatial contexts (see next section) also means that Russian prefixes are less likely to be redundant with prepositional phrases used spatially. In particular, the prefix *по-* is used abstractly in the past tense in Russian, but does not even exist in the past tense in Czech. For these reasons, less prefixation among verbs of motion in the past tense in Czech is not unexpected. It might also be predicted that this finding will hold only for verbs of motion, where Czech has aspectually neutral unprefixed verb forms.

6.15.1 Czech space vs. Russian abstraction

One of the primary cross-linguistic findings of this study is that Czech favors a spatial interpretation of prefixes where possible (i.e. prefixes have concrete entities as trajectors and landmarks), whereas Russian is much more likely to generate abstract interpretations of prefixes (i.e. prefix features apply to the verbal process or to the world state which results from a process, rather than to a concrete entity). For instance, Czech *pro-* is almost always used in conjunction with a concrete LM which serves as a passageway or medium of motion, whereas Russian *про-* is most often used abstractly,

even with verbs of motion, to indicate traversal of the entire trajectory. Similarly, Czech *od-* and *při-* are more common with concrete landmarks than Russian *у-* and *при-*, since the Czech prefixes do not indicate an obligatory shift in domain, as the Russian prefixes do. Czech *pod-* has fully retained its spatial meaning of *motion under* with verbs of motion, whereas Russian *под-* is fully abstract, not admitting this usage at all. The prefix *na-* appears occasionally in the meaning of motion onto a surface (*na-jet na most* 'to drive onto the bridge'), whereas Russian *на-* cannot be used in this sense at all. Czech *před-* (but not Russian *пред-*) is also marginally available as a spatial prefix with verbs of motion. Although Czech *za-* may be used in the (abstract) goal containment context (*za-šel do domu* 'he entered the house') it was rare, whereas this usage was common for Russian *за-*. Czech *za-* did not appear in goal contact contexts at all (*зашел на мост* 'he stepped onto the bridge'). Czech *po-* almost entirely vanishes with verbs of motion, where it would be spatially redundant, whereas Russian *по-* takes on an altogether abstract function. Aside from the data presented here, it is not difficult to find examples of Czech prefixes used spatially with non-motion verbs, whereas Russian prefixes tend to be abstract in other spatial contexts as well: *po-klást* (*po-*'lay, put') 'to cover with'; *po-šít* (*po-*'sew') 'to sew all over with, to face'; *po-tahnout* (*po-*'pull, haul') 'to cover, coat; upholster' vs. Russian *по-тащить* (*по-*'pull, drag') 'to start pulling'; *pře-lít* (*pře-*'pour') 'to pour over (a surface)'[8] vs. Russian *пере-лить* (*пере-*'pour') to overflow, to transfer liquid'; *pře-třít* (*pře-*'rub') 'to rub over (a surface) vs. Russian *перетереть* (*пере-*'rub') 'to wear out'; *pod-malovat* (*pod-*'paint') 'to prime, put on a first undercoat of paint' vs. Russian *под-красить* (*под-*'paint') 'to tint, touch up'; *pod-mest (židli)* (*pod-*'sweep (a chair-ACC)') 'to sweep under (a chair)' vs. Russian *под-мести* (*под-*'sweep') 'to sweep,' etc.

This finding regarding the rather more spatial character of Czech prefixes vs. the primarily abstract character of Russian prefixes may seem at odds with the relative semantic specificity of Russian and Czech verbal prefixes. Spatial vs. abstract prefixation as defined here, however, cannot be correlated with semantic specificity. Abstract prefixation simply indicates that a prefix is not used in its original spatial meaning; it may, nevertheless, involve highly specific semantic features derived from the original spatial features. Thus, an abstract prefix may still possess a high degree of semantic specificity.

The fact that spatial prefixation was more common in Old Russian, before the rise of a grammatical aspectual opposition, as described by Bermel, suggests that spatial prefixation in Czech may reflect a retention of an older state of affairs. Modern Czech maintains a distinction between spatial and abstract prefixation (although both types are generally perfectivizing), whereas the distinction is, at best, blurred in Modern Russian. In abstract prefixation, rather than indicating the path of a trajector in space, the prefix meaning has generalized to indicate the "path" of the verbal action itself. In Russian this abstract interpretation of prefixes has spread into most spatial contexts as well,

[8] *Pře-lít* 'to pour over (a surface)' also admits abstract meanings (cf. 'to overfill, overflow; to recast'). The point, however, is that Czech preserves spatial uses side by side with abstract uses, whereas Russian simply does not allow spatial uses.

whereas in Czech the spread has been less complete. Thus, in this particular instance. Russian may be more innovative than Czech.

It is not clear why Czech should have more spatial prefixation or why Russian should favor abstract prefixation. It is also uncertain what relation this bears to the rest of the verbal system, if any. Serious answers to these questions will require further research. Here I can only present some possibilities. Before considering the potential causes and effects of spatial and abstract prefixation, however, we should consider some features of the Czech aspectual system and how it differs from Russian.

6.15.2 Czech aspect: the role of the imperfectivizing suffix

6.15.2.1 Redundant secondary imperfectives

One unusual characteristic of Czech is the tendency for Czech perfectives with empty prefixes to form derived imperfectives. In Czech it is quite common to find prefixed secondary imperfectives formed and maintained alongside unprefixed imperfectives, even when there is no significant difference in meaning:

(18) půjčit → vy-půjčit → vy-půjčovat	*to lend*
rovnat → urovnat → urovnávat	*to level off, straighten, smooth out*
nořit → po-nořit → po-nořovat	*to plunge, dive*
nutit → do-nutit → do-nucovat	*to force, compel*
chystat → při-chystat → při-chystávat	*to prepare, set up, arrange*
tazat se → dotazat se → dotazovat se	*to ask, enquire*
plést → uplést → uplétat	*to knit, weave, plait*
plnit → vyplnit → vyplňovat	*to fill, fulfill*
zlatit → pozlatit → pozlacovat	*to gold-plate*
blížit se → přiblížit se → přibližovat se	*to approach*

In these examples there is little or no observable lexical semantic contribution made by the prefixes, and secondary imperfectives are not expected. Nevertheless, they are formed and used interchangeably with the unprefixed forms. Such secondary imperfectives are expected only when there is some detectable difference in meaning between the unprefixed and prefixed verb forms *or when the prefix is no longer perceived as having a separate identity from the base verb*. This suggests that the prefix has fused with the verbal root in Czech, such that the prefix is losing its status as an independent morpheme. It also indicates that the imperfectivizing suffix is felt to be significant for indicating that the form is imperfective rather more than the prefix is significant for conveying that a form is perfective.

The link between prefixes and perfectivization, then, may be somewhat weakened in Czech, perhaps as a result of fusion. It is thus possible that while in Russian the link between prefix and perfective is felt quite strongly (and is only overcome by an explicitly imperfectivizing suffix), in Czech the distinction between perfective and imperfective is maintained primarily by the imperfectivizing suffix.

6.15.2.2 Czech verbs of motion and aspect

The relative strength of the imperfectivizing suffix as a marker of aspect in Czech suggests a possible explanation as to why unprefixed determinate verbs of motion in the past tense (*šel*$^{I/P}$ 'he went') and *po-* prefixed determinate verbs of motion in the future tense (*pů-jde*$^{I/P}$'s/he will go') are quite acceptable as both imperfectives and perfectives. Neither of these forms carries the primary morphological marker of aspect in Czech -- the imperfectivizing suffix. The fact that Czech *po-* prefixed determinate forms can be used as imperfectives appears to violate the association between prefixed simplex forms and perfectives, but it is consistent with the observation that in Czech the aspectual distinction is maintained primarily by the imperfectivizing suffix. The existence of a prefix alone does not necessitate the perfective interpretation of the verb in Czech, and this has marginally extended to non-motion verbs as well (cf. *po-roste* 'will grow', *po-kvete* 'will bloom', etc. where *po-* is only a future tense marker, not a marker of aspect. Horálek (1955) considers this usage to be somewhat productive in colloquial Czech.) For unprefixed determinate verbs of motion there is an absence of explicit imperfectivizing morphology, thus the simplex determinate form is unhindered in generating a perfective interpretation, even without the presence of a prefix.

Another potential piece of evidence for the greater significance of the imperfectivizing suffix is the intolerance for unsuffixed imperfectives with verbs of motion in Czech. Whereas Russian tolerates prefixed indeterminate verbs of motion as imperfectives side by side with perfectives formed from the same indeterminate verb (cf. *с-ходить*^{I} 'to walk (down) off,' but *с-ходить*^{P} 'to make a quick round trip'), the base verbs for Czech prefixed imperfectives are distinct from indeterminate verbs of motion for all verbs except *létat* 'to fly':

(19) jít / chodit *to walk*	but	při-jít / při-**cházet** *to arrive*
běžet / běhat *to run*	but	vy-běhnout / vy-**bíhat** *to run out*
letět / létat *to fly*	but	od-lětet / od-létat *to fly away*

It seems, however, that prefixed forms of *létat* are also frequently treated as perfectives in Czech, necessitating the formation of a suffixed imperfective form. This secondary imperfective form of prefixed *létat* verbs was extremely common in narration by Czech speakers in this study and occurs with a variety of prefixes:

(20) a. Takže motýlek **pře-letává** přes most
*So a little butterfly **is flying across** a bridge*

b. Papoušek **pro-lítává** bránou
*A parrot **is flying through** a gate*

c. Ptáček **při-lítává** ke svému hnízdu, které má na stromě
*A little bird **is flying up** to its nest in a tree*

d. Ptáček letí, blíží se k domu, teď si sedá, ne, v-**lítává** do dveří, a usedá vevnitř
A little bird is flying, approaching a house, now its landing, no, it ***is flying in*** *the door, and it alights inside*

6.15.2.3 Czech iteratives and the perfective present

Two other observations regarding the Czech aspectual system are potentially relevant here. Czech readily derives iterative imperfectives (*dělávat* 'to do (repeatedly),' *brávat* 'to take (regularly),' *kupovávat* 'to buy (regularly),' *slýchávat/slyšívat* 'to hear (repeatedly),' etc.) which are quite common in the spoken language. While iteratives may be formed in Russian as well, they are significantly less common and less productive than the Czech iterative (Kopečný, 1948).

Another unusual feature of Czech is the existence of a perfective present. Kopečný claims that the perfective present is not used to describe concrete, actual situations directly, but is typically transposed in some way, usually to denote general, atemporal action (cf. *ráno vyjedou*^{P} *a večer se vrátí*^{P} 'they go out in the morning and return in the evening' (1948:155)). In this study, however, Czech speakers use the perfective present quite readily in real-time narration (12% of all verb tokens in the present tense and 26% of present tense prefixed verbs), whereas Russian speakers never used the perfective present in the current task. The perfective present is not limited to motion verbs, occurring regularly with other verbs as well, as the following examples demonstrate:

(21) a. Zpoza domečku **vy-jde**^{P} chlapeček, **pro-jde**^{P} brankou a **od-ejde**^{P} pryč
A little boy ***comes out*** *from behind a house,* ***walks through*** *a gate and* ***walks away***

b. Holčička **vy-běhne**^{P} zpoza domečku, **pře-běhne**^{P} silnici a **od-běhne**^{P} pryč
A little girl ***runs out*** *from behind a house,* ***runs*** *across the street and* ***runs away***

c. Holčička **běží**^{I} s míčem, hraje si s ním, ale **do-běhne**^{P} jí chlapeček, míč jí **vezme**^{P} a **vy-leze**^{P} s ním na strom a holčička ho od něj nemůže vzít
A little girl is running with a ball, playing with it, but a little boy ***runs up*** *to her,* ***takes the ball from her and climbs up*** *a tree with it, and the little girl can't get the ball from him*

d. Tak na povrch planety **při-letí**^{P} létající talíř, **za-parkuje**^{P}, po žebříku z něj **vy-leze**^{P} kosmonaut, pořádně **se** po planetě **roz-hlídne**^{P}, **po-dívá se**^{P} do jednoho z komínků, pak zase **na-stoupí**^{P} a **od-letí**^{P}
A flying saucer ***lands*** *on the surface of a planet,* ***parks****, an astronaut* ***climbs out*** *on a ladder,* ***takes a good look around****,* ***looks*** *into one of the smoke-stacks, then* ***gets back in*** *(to the flying saucer) and* ***flies away***

e. Rybka **při-pluje**^{P} k podvodní jeskyni, chvíli u ní váhá^{I}, pak v-**plave**^{P} dovnitř, za chvíli zase **vy-plave**^{P} ven a **od-plave**^{P} pryč
*A little fish **swims up** to an underwater cave, it hesitates near by for a little while, **then swims in**, after a little while **swims out** again and **swims away***

The following example, in particular, highlights the distinction between the prefixed imperfective present and the perfective present:

(22) Auto jede^{I} mimo silnici, **pře-jede**^{P} cestu a **za-jede**^{P} za dům a ještě je vidět skrz vokna když za něj **za-jíždí**^{I}
*A car is driving wide of the road, **drives across** the road and **goes behind** a house and you can still see it through the windows as it **is going behind** it (the house)*

The perfective present tense forms in Czech would seem to be functioning here as a historic or narrative present, such that real time actions occurring in front of the speaker are immediately summarized as punctual events. (That is to say, the events themselves are not punctual, but the speaker is not interested in the temporal extent of the action.) The presence of a productive and common iterative form and a perfective present tense has the effect of reserving the basic imperfective forms primarily for a progressive function in Czech. This division of labor hints at the possibility that the aspectual system in Czech is much less focused on the prefix.

6.15.2.4 Czech aspect: summary

We have seen some evidence to suggest that the imperfectivizing suffix plays a larger role in maintaining the aspectual distinctions in Czech than, perhaps, in Russian. The formation of redundant secondary imperfectives in Czech, the intolerance for (unsuffixed) imperfectives formed from indeterminate motion verbs, and the existence of a prefixed simplex (determinate) verb which may function as an imperfective all point in this direction. The claim is not that either the prefix or the suffix alone maintains the distinction in either language, since this is obviously not the case; the expression of aspect in Russian and Czech is morphologically heterogeneous, and a number of factors have been ignored here (e.g. the suffix *-ну-/-nou-*). One possibility, however, is that Czech prefixes are no longer readily perceived as independent morphemes. Although at present it is highly conjectural at best to suggest that prefixes are felt to be more integral to the verb in Czech versus Russian, it is possible that a greater degree of fusion between the prefix and the base verb accounts for the tendencies of the Czech aspectual system described above. The relatively greater role of the imperfectivizing suffix in Czech might also be related to the presence of spatial prefixation. In Section 6.14 it was pointed out that spatial prefixes themselves are not inherently telicizing. Given that Czech has retained spatial prefixation to some degree, it may be that Czech prefixes were never as strongly associated with the <+telic> and/or <+perfective> feature.

6.15.3 Space, abstraction, and semantic integrity: some hypotheses

6.15.3.1 Abstract prefixes as change-of-state indicators in Czech

Although prefixes are used spatially more often in Czech than in Russian, abstract prefixation is still common. When used abstractly, Czech prefixes are inclined to become simple change-of-state indicators, i.e. empty perfectivizers. While it is often possible to detect semantic overlap between the base verb and the prefix in Russian, and thus discern a motivation for choosing a given prefix to perfectivize a simplex verb, in Czech this overlap often reduces precisely to the notion of change of state or limit attainment without any additional inferential nuance. Thus a wider variety of prefixes appear as empty perfectivizers in Czech. Almost all Czech prefixes are common in this role, including prefixes such as *při-*, *pře-*, *do-*, *o(b)-*, *u-*, *vy-*, *od-* and *za-*, which are rare as empty prefixes in Russian (e.g. *vítat/přivítat* 'to welcome'; *chystat/přichystat* 'to prepare'; *číst/pře-číst* 'to read'; *kazit/překazit* 'to thwart, foil'; *tlumočit/pře-tlumočit* 'to interpret'; *nutit/donutit* 'to force'; *svědčit/dosvědčit* 'to testify'; *klamat/oklamat* 'to deceive'; *holit/oholit* 'to shave'; *vařit/uvařit* 'to cook'; *věřit/uvěřit* 'to believe'; *mlít/umlít* 'to grind'; *dělat/udělat* 'to do'; *pěstovat/vypěstovat* 'to grow, raise'; *želit/vyželit* 'to iron'; *startovat/odstartovat* 'to start'; *pykat/odpykat* 'to pay, suffer'; *klepat/za-klepat* 'to knock', *šněrovat/zašněrovat* 'to lace up', etc.). Often several prefixes may perfectivize a single base verb without an appreciable difference in meaning between perfectives (cf. *vítat/při-vítat, u-vítat* 'to welcome'; *chystat/na-chystat, při-chystat, u-chystat, z-chystat* 'to prepare, set up, be about to'; *u-mřít, ze-mřít* 'to die'; *vy-řídit, za-řídit* 'to arrange (something), take care of, see to'; *čistit/o-čistit, vy-čistit* 'to clean'; *do-svědčit, při-svědčit* 'to agree'; *nutit/do-nutit, při-nutit* 'to force, compel'; *včšet/po-věsit, za-věsit* 'to suspend, hang'; *na-barvit, o-barvit* 'to color, dye'; *do-hodnout se, s-hodnout se* 'to agree on something'; *po-čít, za-čít* 'to begin'; *za-čadit, o-čadit* 'to blacken with smoke,' etc.).[9] Paradoxically, then, while Czech prefixes seem to exhibit greater fidelity to the spatial prototypes than Russian prefixes, they show less fidelity to unique semantic extensions of the prototype in abstract uses, often converging simply to indicate completion of an action.

6.15.3.2 Abstraction may maintain the semantic integrity of a prefix

Although it is not clear why Czech should favor either spatial uses or empty prefixation, it is possible that these facts are related. When prefixes favor actual spatial landmarks, they are more likely to seem redundant with the verb and its complements. This occurs because in spatial uses the prefix landmark and the constructional landmark (the complement of the verb or preposition) are the same and the prefix+verb complex acts as a unit in relation to it (e.g. *pro-jet tunnelem* 'to drive through the tunnel' vs. *jet tunnelem* 'to drive through the tunnel'). Abstract prefixes, in contrast, are not redundant in spatial contexts, and the semantic content of the prefix should remain discernible from that of the verb. This redundancy in spatial contexts obscures the semantic value of the prefix, such that it loses its identity independent of the verb when it is used

[9] In some cases these synonymous perfectives apply to different semantic fields or reflect stylistic differences, but such differences are difficult to correlate with prefix choice and are most likely established through conventional use. In other words, although the prefixes theoretically produce interchangeable perfectives, in practice they may be restricted to specific contexts or expressions.

spatially. Furthermore, when prefixes are used spatially, and thus directly generate a variety of inferences and associations, one inference is perhaps less likely to be conventionalized at the expense of others. This could explain the wider semantic range of Czech prefixes with verbs of motion, as well as the tendency towards empty prefixation when prefixes are used abstractly. We have already seen that a single prefix can generate conflicting inferences and different prefixes can generate convergent inferences. If there is no pressure to associate a few core inferences with a single prefix, prefix choice may indeed seem idiosyncratic, and prefixes will often be perceived as empty perfectivizers in non-spatial contexts.

We have seen this idiosyncratic use of Czech prefixes even with verbs of motion. The Czech prefix *vy-*, for instance, was used for both screen entry and screen exit, whereas in Russian *вы-* was only appropriate in screen entry contexts. Screen entry usage was consistent with expectations based on a prominent inferential feature of the prefix (<+accessible> at goal state), but use of *vy-* for screen exit must be explained by changing the perspective of the observer to the off-screen space rather than on-screen space. In this study, there is a shift from a deictic use to a non-deictic use of the prefix which allows it to be used in precisely opposite contexts. Presumably this shift in observer perspective of the spatial schema is more acceptable in Czech, as evidenced by the use of *vy-jít* 'to set out on a journey, on one's way', etc. This meaning of *vy-jít* is generally not in conflict with *vy-jít* 'to exit (and thus become accessible)'; an apparent conflict arises only when the journey begins in the presence of an observer. In this context, *vy-jít* may be used to describe directly opposing spatial scenes. Thus, the Czech prefix is not limited to the deictic use over the non-deictic use to the same extent that Russian *вы-* is. Such conflicting uses of prefixes will be tolerated more readily under conditions where there is fusion between the prefix and the base verb, since such conflicts will not be perceived at all; the prefix+verb complexes are simply treated as separate lexical items.

Thus, one potential result of the redundancy of spatial prefixes in spatial contexts is a loss of the semantic integrity of the prefix morpheme itself in favor of the semantic integrity of the prefix plus verb combination. In other words, speakers might not readily perceive the semantic contribution of the prefix independently of the prefixed verb as a whole. This sets the stage for fusion of prefixes to base verbs, or lexicalization. As we have seen, there is some support for the fusion of prefixes and base verbs in Czech from the Czech aspectual system as well.

Fusion, in turn, allows idiosyncratic uses of a prefix to flourish, since potential semantic conflicts among uses are obscured by the meaning of the whole unit. In other words, new, independent lexical items consisting of prefixes plus base verbs proliferate at the expense of prefix semantic unity. This may also appear to extend the semantic range of the prefix. In contrast, Russian prefixes retain more of an independent identity from the verb, so there will be some pressure to maintain the semantic unity of the prefix morpheme. As a result, one or two prominent perspectives and/or inferences will tend to predominate at the expense of other potential prefix meanings in order to minimize semantic conflicts. It is important to stress, however, that these would be merely tendencies in Czech and Russian. Prefixes in the two languages are similar in a great many respects.

6.15.3.3 Space, abstraction, and semantic integrity: summary

Fusion of base verb and prefix is thus one way to explain the proliferation of prefix meanings in Czech. Conflicting or idiosyncratic usages are lexicalized, and the prefixed verb form is not felt to be analyzable. In Russian, prefix usage remains more apparently systematic. Thus, Czech prefixes are more bound to the verb form and retain less independent identity as semantically unified morphemes themselves. Without this identity, there is nothing to limit a proliferation of meanings that do not relate as coherently to one spatial prototype over another, especially since the prefixes may overlap considerably in meaning regardless. Due to the fact that the semantic content of Czech prefixes is less readily recoverable, at first glance it may seem that Czech prefixes are more grammaticalized than Russian prefixes. In fact, however, this is more likely to be the result of a loss of unity in the shared semantic content of individual prefixes in favor of a gain in the semantic unity of the prefixed verb, and represents a step in the direction of lexicalization.

In this section I have presented some possible correlations between spatial and abstract prefixation and characteristics of the Russian and Czech verbal systems in general. It is, however, very difficult to prove such claims, particularly because they represent, at best, merely tendencies in two very similar languages. It remains a possibility, of course, that there is no connection between the spatial/abstract character of prefixation and other differences between Czech and Russian. In this case one must conclude simply that Czech is slightly more focused on the spatial details of concrete situations, whereas Russian is slightly more focused on the nature of the action itself. Similarly, there may be no relation between the spatial character of Czech prefixes and the tendency for Czech prefixes to allow more conflicting and idiosyncratic uses. If this is true we must be satisfied simply to state that Czech seems more willing to include a wider range of perspectives and inferences in the semantic network of a prefix and is less concerned with potential semantic conflict for a single prefix, or semantic convergence among many prefixes.

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