

Unifying Prepositions and Prefixes in Russian: Conceptual structure versus syntax

Inna Tolskaya
University of Tromsø/CASTL

Abstract

This paper is an attempt to unify the polysemous verbal prefixes and prepositions in Russian. At first glance, the variety of possible denotations of a given prefix might appear a chaotic set of idiomatic meanings, e.g., the prefix *za-* may refer to beginning of an action, movement to a position behind an object, a brief deviation from a path, completion of an action, while the corresponding preposition *za* can mean ‘behind,’ ‘after,’ ‘for,’ ‘in’ (like in ‘in an hour’), ‘at’ (like in ‘at the table’).

I will propose a unified analysis, where the differences in meaning are claimed to arise from different syntactic positions, while the lexical entry of a prefix remains the same. The main focus is on the verbs of motion due to the consistent duality displayed by the prefix meanings when added to directional and non-directional motion verbs. It will turn out that many prefixes appear to modify path when added onto a directional motion verb and to refer to movement in time with non-directional motion verbs. This semantic distinction corresponds to distinct sets of syntactic properties, specific for each set of prefixes. These two classes of prefixes correspond to the lexical versus superlexical distinction. However, a tripartite division will emerge in each set, corresponding to source, path, and goal of motion (FROM, VIA and TO) for lexical prefixes and to initiation, process and result for superlexical prefixes. This leads to the suggestion that the syntactic representation of a VP contains at least six distinct nodes for the Russian verbal prefixes, each characterized by predictable semantic and syntactic properties. The same prefix with a consistent meaning, shared with the corresponding preposition, will receive part of its denotation from the syntactic head it attaches to, thus allowing the polysemy to arise from position, rather than from arbitrary homophony. Thus, conceptual structure will be unified with syntax.

1. Introduction

The assumption in this paper is that Russian verbal prefixes fall into two classes: lexical and superlexical (Isačenko 1960, Romanova 2004, Svenonius 2004). According to Romanova (2004), the lexical prefixes attach *mostly*

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to perfective or telic stems (if the verb is supplied with both), allow the verb to form secondary imperfectives, cannot stack, do not measure over objects, and can change the argument structure of the verb. This behavior corresponds to a low prefix position inside VP. Superlexical prefixes attach to imperfective or atelic stems, do not allow the verb to form secondary imperfectives, can stack, can measure over events or objects, do not change the argument structure of the verb. Romanova (2004) defines two more classes of superlexical prefixes: cumulative *na-*, which measures over objects, and prefixes like *pri-* and *pod-*, which measure over events, describing degree of intensity of the action. I assume that these prefixes (*na-*, *pod-*, *pri-*) occupy a higher syntactic position, which will remain outside of the scope of this paper.

The superlexical prefixes may stack over lexical prefixes, as in the examples below; (1a) and (1b) are adopted from Beliakov (1997):

- (1) a. *Ot-pere-biral ty bumagi. ...Uvoljnajut tebjja.*
 OT-PERE-took^I you papers-ACC. ...Fire-3PL you-ACC
 ‘You are done with sorting papers. They are firing you’
- b. *Pro-vy-dergival morkovk-u poldnja.*
 PRO-VY-pulled^I carrot-ACC half.day
 ‘He spent half a day pulling out carrots’
- c. *A čto ne sjem, to po-nad-kušu!*
 and what not eat that PO-NAD-bite
 ‘And whatever I cannot eat, I will bite slightly one by one’

Here, the first, superlexical prefix, attached to the prefixed imperfective stem, refers to time of the event, without affecting the meaning of the main verb. *Ot-* refers to the permanent completion of the event, while *pro-* refers to duration. The lexical prefixes are closer to the root and change the lexical meaning of the verbal stem, rather than barely modifying the time. Crucially, the same prefix may act both as lexical and superlexical, with interpretations different enough to provoke a suspicion of homophony. E.g. the superlexical prefixes in the examples above may act as lexical prefixes with the same verbs, when adjacent to the root.

- (2) a. *ot-bira-tj bumagi*
 OT-take-INF papers-ACC
 ‘to take away (from smb., by force)/to select the papers’
- b. *pro-dergiva-tj nitku v igolk-u*
 PRO-pull-INF thread-ACC in needle-ACC
 ‘to pull the thread through the needle’

Not only can a prefix have two meanings depending on whether it is used as a lexical or superlexical prefix, but most of them also have corresponding prepositions. The table below lists some of the uses of prepositions, and lexical and superlexical prefixes with motion verbs.

(3) **Lexical and Superlexical Prefixes with Corresponding Prepositions.**

Prefix	Lexical Prefix	Superlexical Prefix	Meaning of Corresponding Preposition
<i>do-</i>	adlative	completive	'up.to'
<i>za-</i>	occlusive	inceptive	'behind'
<i>ot-</i>	ablative	completive	'from.near'
<i>s-</i>	superrelative	'there and back'	'from.on'
<i>pro-</i>	perdurative	duration	'about'
<i>po-</i>	limitative	limited duration	'along, according to'
<i>pere-</i>	translative	excessive duration	(corresponds to <i>čerez</i> 'across')

This list is limited to the uses of prefixes and prepositions possible with motion verbs. Yet, as I will show, the homophony is far from sporadic. The motion verbs display a directional versus non-directional distinction, where the directional verbs combine with lexical prefixes and the non-directional ones combine with the superlexical prefixes. Motion verbs are compatible with the corresponding spatial PPs, which makes this class a perfect candidate for exploring the semantics of the prefixes.

In the table below is the standard list (adopted from Janda 2006) of the motion verbs characterized by the presence of both directional and non-directional forms. The directional verbs involve a path and a goal, e.g., *bežatj* means 'to run in a certain direction.' The non-directional verbs describe sporadic or repetitive movement, e.g., *bégatj* means 'to run around, or to run back and forth, or to run regularly.'

(4) Motion Verbs: Directional and Non-directional

Rus.	Directional	Non-directional
‘run’	<i>bežatj</i>	<i>begatj</i>
‘walk with difficulty’	<i>bresti</i>	<i>broditj</i>
‘carry’ (by vehicle)	<i>vezti</i>	<i>vozitj</i>
‘lead’	<i>vesti</i>	<i>voditj</i>
‘drive, chase’	<i>gnatj</i>	<i>gonjatj</i>
‘ride’	<i>exatj</i>	<i>ezditj</i>
‘walk’	<i>idti</i>	<i>xoditj</i>
‘roll’	<i>katitj</i>	<i>katatj</i>
‘climb’	<i>leztj</i>	<i>lazitj/lazatj</i>
‘fly’	<i>letetj</i>	<i>letatj</i>
‘carry’ (on foot)	<i>nesti</i>	<i>nositj</i>
‘swim, sail’	<i>plytj</i>	<i>plavatj</i>
‘crawl’	<i>polzti</i>	<i>polzatj</i>
‘drag’	<i>tasčitj</i>	<i>taskatj</i>

The prefixes with the directional verbs are lexical. They allow secondary imperfectivization, and modify path.

- (5) a. *pro-bežatj* *pjatj kilometrov*
through-run^{dir, perf} five kilometers
‘to run five kilometers’
- b. *pro-begátj* *pjatj kilometrov každoe utro*
through-run^{dir, imp} five kilometers every morning
‘to run five kilometers every morning’

With non-directional verbs, the prefixes are superlexical and are not susceptible to secondary imperfectivization. The non-directional verbs do not involve a path to be modified, so the prefix refers to time; e.g., *pro-*, which refers to the length of path when lexical, refers to the time duration when it is superlexical.

- (6) a. *pro-bégatj* *pjatj časov*
PRO-run^{non-dir, imp} five hours
‘to walk for five hours’
- b. **pro-haživatj* *pjatj časov každoe utro*
PRO-walk^{non-dir, sec.imp} five hours every morning
(‘to walk for five hours every morning’)

The following section gives examples of lexical and superlexical usage of each of the prefixes, arguing for a single meaning of each. The examples, unless otherwise stated, come from my native speaker intuition. Many examples were also obtained by searching through the National Corpus of Russian language (www.ruscorpora.ru).

2. Lexical and superlexical prefixes and their interpretation

In this section, the prepositional, lexical and superlexical uses are considered. A central meaning for each lexeme emerges, and it turns out that lexical usage corresponds to path modification, while the superlexical usage belongs to the time domain.

2.1. Perdurative *pro-* and *pere-*

The prefix *pere-* refers to crossing a boundary, which may be a boundary in space across path for directional verbs, or a temporal boundary (e.g., after which swimming is too tiring) for non-directional verbs. This usage is similar to the English preposition ‘over,’ which may also be used referring to crossing a boundary both in space (‘the bridge over the river’) and in time (‘to spend over an hour’).

- (7) a. pere-plytj rek-u
 PERE-swim^{dir} river-ACC
 ‘to swim across a river’
 b. pere-plavatj v bassejne
 PERE-swim^{non-dir} in swimming pool
 ‘to swim too much in the swimming pool’

The prefix *pro-* ‘about, through’ is a measure of distance with directional verbs, and a measure of time with non-directional verbs:

- (8) a. pro-jti pjatj kilometrov
 PRO-walk^{dir} five kilometers
 ‘to walk for five kilometers’
 b. pro-xoditj vesj denj
 PRO-walk^{non-dir} all day
 ‘to walk (around) all day’

As a preposition, however, it has a very different meaning: ‘about.’ Yet, in Russian there are two preposition with a rather close meaning ‘about,’ and the comparison of them might shed light on the similarity of the preposition *pro-* with the corresponding prefix.

- (9) a. govoritj pro lingvistik-u
 talk about linguistics-ACC
 b. govoritj o lingvistike
 talk about linguistics-LOC

The usage of the preposition *pro-* implies more penetration into the topic from inside, while the preposition *o-* would be used about a conversation of outsiders about linguistics as a whole. Compare English ‘a talk on linguistics’ and ‘a talk about linguistics.’ Thus, compared to *o-*, the preposition

pro- implies a more thorough penetration, so the uniting schema would be piercing of space, time, or a topic from beginning to end.

2.2. Completive *ot-* and *do-*

Do- ‘up to’ refers to movement or persistence at activity up to a certain point (usually the goal, or unpleasant consequences with reflexive verbs). The point reached can be a point in space for directional verbs, or a point in time for non-directional verbs. In both cases overcoming of some considerable distance, time, or difficulty is involved.

- (10) a. do-plytj do bereg-a
 DO-swim^{dir} up.to shore-GEN
 ‘to swim up to the shore’
- b. do-plavatj rejs
 DO-swim^{non-dir} trip-ACC
 ‘to sail up till the end of the trip (and then quit).’
- c. ‘do-umyvajsja’ – skazal Ia-ia.
 DO-washed – said Eeyore
 ‘(There came a sudden squeak from Roo, a splash, and a loud cry of alarm from Kanga.) ‘So much for washing’ – said Eeyore.’ (A. A. Milne ‘Winnie-the-Pooh,’ translation by B. Zakhoder)

For directional verbs, *ot-* ‘from near’ refers to movement away from, where the distance separating the figure from ground is increasing, while for non-directional verbs the time, separating the figure from the past event, is increasing.

- (11) a. Maljčik ot-skočil ot kostra.
 boy OT-jump^{dir} from fire
 ‘The boy jumped away from the fire’
- b. IL-76 svoe ot-letal.
 IL-76 its OT-fly^{non-dir}
 ‘(The plane) IL-76 has done its flying (and will never fly again)’

Thus, the lexical usage of these two prefixes is rather different: *do-* refers to reaching the goal, while *ot-* refers to moving away from it. In the superlexical usage, the domain is time, and the end of the event corresponds to the goal in space: thus, *do-* refers to reaching the completion, while *ot-* refers to moving away from it, after having reached it. Both prefixes refer to completing event, though from opposite angles: *do-* stresses the effort in reaching the end, while *ot-* stresses its permanent irreversible completeness.

2.3. *Za-*: occlusive and inceptive

The preposition *za-* means ‘behind,’ referring both to occlusion and sequences, in addition to other meanings ‘for’ and ‘after.’ The prefix *za-* is notoriously versatile, and the whole diversity of its meaning may hardly be discussed in the limited space here, yet there is the path-time parallel present as well. With directional verbs the prefix modifies path, so that the figure enters an occluded area. With non-directional verbs the subject enters a new state. As a lexical prefix, *za-* means occlusion, while as a superlexical prefix it gives rise to an inceptive meaning.

- (12) a. *za-jti* v magazin; *za-jti* *za* magazin / pod
ZA-walk^{dir} in store *ZA-walk^{dir}* behind store / under
naves.
cover
‘to pop by the store; to walk to behind the store/under the cover’
- b. *Časy za-xodili.*
clock ZA-walked^{non-dir}
‘The clock started to work’
- c. *Djadja za-prygal ot radosti.*
uncle ZA-jumped from joy
‘The uncle started jumping from joy’
- d. *za dom-om*
za house-INS
‘behind the house’
- e. *Gosti odin za drugim razošlisj.*
guests one behind one left
‘The guests left one by one.’

The inceptive use of the prefix *za-* displays an interesting contrast, pointed out in Dobrushina (2001): with verbs like ‘work,’ the inceptive meaning is only possible with inanimate subjects:

- (13) a. *Motor za-rabotal.*
motor ZA-worked
‘The motor started to work’
- b. **Petja za-rabotal.*
Petja ZA-worked
intended: ‘Petja began working’ (but grammatical under idiomatic reading: ‘Petya earned some money’)

Dobrushina (2001) explains this contrast as arising from the interpretation of *za-* as a deviation from a previous state. Thus, a motor or a clock has two states: either working or not, while such a simple opposition is not salient for human subjects. This contrast provides support to the view of inception as a figure entering a new state. Predictably, the inceptive prefix

is incompatible with transitive verbs such as *krasitj* ‘to paint,’ where the change of the subject is not as radical as the change inflicted upon the object.

- (14) a. *za-krasitj zabor
 ZA-*paint* fence
 (‘to begin painting the fence’)
 (ungrammatical with superlexical meaning, ok under the reading in (b), where the prefix is lexical.)
 b. za-krasitj nadpisj na zabore
 ZA-*paint* inscription on fence
 ‘to cover with paint the graffiti on the fence’

Dobrushina does not explain how human subjects are possible with such verbs as *zapetj* ‘start singing,’ *zagovoritj* ‘start talking,’ *zabegatj* ‘start running around.’ Yet, the idea that the change of state inflicted upon the subject is decisive for grammaticality may help to understand this contrast. The verbs possible with human subjects are intransitive, thus the subject enters a new state, as opposed to inflicting changes upon the patient.

2.4. Superrelative *s-*

The prefix *s-* (with the corresponding preposition ‘from on’) involves a slight deviation from the normal path or location in case of directional verbs, and a brief deviation from one’s regular and expected location, with subsequent return, in case of non-directional verbs.

- (15) a. Platok s-polz s ee golovy.
 shawl s-crawled^{dir} from.on her head
 ‘The shawl displaced from her head’
 b. Sumasšedšij s-bežal iz lečebnicy.
 insane s-ran^{dir} from hospital
 ‘The insane man ran off from the hospital’
 c. S-begaj za pivom!
 s-run^{non-dir} for beer
 ‘Run get some beer (quickly, and then return)’
 d. poezd so-shel s reljs.
 train s-walked from rails
 ‘The train derailed’

Two components are common for *s-* with directional verbs of motion:

1. There is a sense in which the figure is expected to stay at the origin (the shawl is supposed to stay on a head, the insane man is supposed to be in the hospital, the train has an expected path, which coincides with the rails...)

2. Short distance: the shawl did not even fall to the ground, the distance does not matter in escaping as long as one manages to get out, the train could not go very far without the rails.

With non-directional motion verbs, what is relevant is that the trip does not take a long time, parallel to short path with directional verbs, and the figure returns to the starting point, i.e., the normal location.

2.5. Limitative *po-*

The preposition *po* means ‘along’ (16c), ‘according to’ (16d), ‘after’ (16e) and also reason, specialization, domain and distribution. The prefix *po-* produces an inceptive reading with directional verbs, and delimitative reading with non-directional verbs. There are also ‘super-superlexical’ prefixes, one of which scopes over plural undergoers (16f), the other one scoping over the degree of intensity of the event. These fall with the interpretation of *po-* as limitative, as in the first case the event is limited by the number of participants, and in the second case the degree of intensity is limited.

- (16) a. *po-bežatj*
PO-run^{dir}
 ‘to start running’
- b. *po-bégatj*
PO-run^{non-dir}
 ‘to run for a little bit’
- c. *bežatj po doroge*
run along path
 ‘to run along the path’
- d. *My dialektiku učili ne po Gegelju.*
we dialectics learned not according.to Hegel
 ‘We learned dialectics not according to Hegel’ (Majakovsky)
- e. *Zapiski, ostavšiesja po smert-i knjagin-i, opublikovali*
notes remaining PO death-LOC princess-GEN published
nasledniki.
heirs
 ‘The heirs published notes, which remained after the death of the princess’
- f. *Vse starushki v derevne po-vy-merli.*
all old.women in village PO-VY-die
 ‘All the old women in the village have died out one by one’

Crucially, both *po*’s pattern more with superlexical prefixes, thus breaking away from the general pattern where the lexical prefix appears with the directional motion verbs and the super-lexical prefix appears with non-directional verbs. Like a lexical prefix, the inceptive *po-* attaches to the telic stem and cannot stack, but like a superlexical prefix does not allow secondary imperfectives. The delimitative *po-* attaches to the atelic stem,

does not allow secondary imperfectives, and can stack — like a typical superlexical prefix. There is also a super-superlexical *po-*, which scopes over the plural undergoers.

2.6. Summary

Thus, a clear distribution emerges of lexical and superlexical prefixes, where the lexical prefixes, occurring with directional motion verbs, belong to the spatial domain, modifying the movement of figure in space with respect to a certain ground. The superlexical prefixes, occurring with non-directional motion verbs, shift the central prefix meaning into the time domain, describing the movement of figure in time with respect to the event.

3. Analysis

There are several logically possible directions of analysis. The least desirable alternative is homophony, where there are several idiomatic meanings per prefix, and the fact that they sound the same is a mere coincidence. An exhaustive list of all the uses is descriptively adequate and often used. In the classic Ožegov (2001) dictionary, as well as in Švedova (1980) grammar, all the prefixes and prepositions have at least two meanings. Yet, these meanings are interrelated, and the relations between them are predictable. Treating the polysemy as homophony does not capture any generalizations about these relations. Yet, it seems that these generalizations are too omnipresent to be attributed to mere coincidence.

An ideal solution, on the other hand, would unite prepositions and prefixes, so that each prefix would have one meaning, which would vary predictably depending on its function. Thus, I assume that part of the meaning comes from the lexicon, but part of the meaning comes from structure (cf. Borer 2005, Ramchand in press).

The ‘generative-constructivist’ view taken in Ramchand (in press) is that the reason that syntactic structures have meaning is because they are “systematically constructed as part of a generative system (syntactic form) that has predictable meaning correlates.” Numerous arguments for syntactic and argument structure information arising from the structure, rather than from a lexical entry, are given in Borer (2005). Thus, overly complicated mechanisms are required by a lexicalist approach to account for coercion and type-shifting, as the syntactic properties that are associated with some lexemes can be systematically overridden by syntax. These problems do not arise if these properties are not claimed to be associated with the lexemes, but rather with the structure.

- (17)
- a. The alien stared at Kim.
 - b. The alien stared Kim out of the room.
 - c. This is too little carpet for the money.
 - d. There are three wines in the cellar.

- e. Cat came. (proper name interpretation)
- f. The three Kims I met yesterday were all tall. (common name interpretation)

The following range of examples is offered for the English verb ‘siren,’ which significantly is also compatible with nominal syntactic structure (from Borer 2005:p.8).

- (18)
- a. The fire stations sired throughout the raid.
 - b. The factory sired midday and everyone stopped for lunch.
 - c. The police sired the Porsche to a stop.
 - d. The police car sired up to the accident.
 - e. The police car sired the daylights out of me.

A parallel example from Russian is brought up in Rakhilina (1998), where practically any imperfective verb denoting manner of motion or sound may substitute for ‘move’:

- (19)
- a. Diližans exal /plyl /skoljzil /pilil /česal čerez
vehicle drove /floated /glided /sawed /brushed through
derevnju.
village
‘The vehicle drove/floated/glided/sawed/brushed through the village’
 - b. Diližans molotil /uxal /xljupal /uljuljukač čerez
vehicle hammered /hooted /sloshed /screamed through
derevnju.
village
‘The vehicle hammered/hooted/sloshed/screamed through the village’

However, the ‘making noise along the way’ interpretation is not available with potentially addressed noise production such as:

- (20)
- a. *Maljčik pel /kričal /uljuljukač čerez derevnju.
boy sang /shouted /screamed through village
‘The boy sang/shouted/screamed (while walking) through the village,’ but available interpretation: ‘The boy sang/shouted/screamed (to somebody) across the village’

Thus, what determines whether a certain lexeme is compatible with a certain construction under these approaches is encyclopedic knowledge.

Having two sources of meaning also makes it possible to avoid ascribing polysemy to homophony without overgenerating. If all of the meaning were generated by the lexicon, there would be no alternative source of polysemy, thus the only alternatives would be either homophony or an overgenerating abstract meaning, incapable of being adapted to structure. The opposite

direction, where all of the meaning comes from structure, is not satisfactory either, as it leaves aside the question why the particular lexemes may function in a particular structure, thus failing to capture systematicity of the usage of particular prefixes in particular structural positions.

The intermediate position, which I adopt here, claims that both the lexicon and structure give rise to meaning. Thus, there is a central meaning of a preposition/prefix, and each node has a specific, independently motivated meaning: e.g., there would be a node with the meaning of beginning, which would combine with the unique meaning of *za-* to result in inceptive reading.

Thus, the question arises if multiple levels may be independently motivated. First of all, there is an established distinction between lexical versus superlexical prefixes (see introduction for references). As discussed in the introduction, the lexical prefixes allow secondary imperfectivization and some of them may change the argument structure of the verb. E.g. *ekzamen* ‘exam’ is not a possible argument of *spatj* ‘sleep,’ but it is possible to ‘oversleep an exam’: *pro-spatj ekzamen*. The superlexical prefixes neither allow secondary imperfectivization nor change the argument structure, but they may be stacked on top of lexical prefixes. E.g. in *pro-vy-dergivatj* ‘spend some time pulling out something,’ *vy-*, corresponding to ‘out,’ is the lexical prefix, and *pro-*, referring to duration, is the superlexical prefix. The lexical prefixes add a spatial modification to motion verbs, while the superlexical prefixes add a temporal modification. Thus, at least two levels are well motivated. Yet, after closer examination, both lexical and superlexical prefixes seem to fall into three separate classes.

3.1. Superlexical Prefixes

Once the existence of two classes of prefixes is established, lexical and superlexical, it turns out that each class should be subjected to a tripartite division, on the basis of syntactic behavior. The lexical prefixes, referring to path, are grouped into ‘FROM,’ ‘VIA’ and ‘TO’ prefixes, respectively precisizing the origin, path, or goal of movement. The superlexical prefixes mirror the division in the temporal domain, falling into ‘imitation,’ ‘process’ and ‘result.’ Crucially, however, the distribution of prefixes among these groups is not identical for lexical and superlexical prefixes, but appears rather arbitrary (cf. Filip 2003 also arguing against Slavic prefixes constituting a homogeneous class).

The superlexical prefixes may be divided into three groups on the basis of the ‘in an hour’ and ‘for an hour’ tests. It turns out that the inceptive *po-* and *za-* pattern together as disallowing both modifications; *pro-*, *po-*, and *pere-*, which all refer to duration, pattern together allowing only modification of ‘for an hour’ type. *Do-*, *ot-*, and *s-*, all of which refer to completion, also pattern together, allowing ‘in an hour’ modification.

	COMPLETION			PROCESS			INITIATION	
	<i>do-</i>	<i>ot-</i>	<i>s-</i>	<i>pro-</i>	<i>po-</i>	<i>pere-</i>	<i>po-</i>	<i>za-</i>
dva časa (for two hours)	yes	yes	*	yes	yes	yes	*	*
za dva časa (in two hours)	yes	yes	yes	*	*	*	*	*

The examples below present all the felicitous combinations. The completive prefixes *do-* and *ot-* allow ‘for an hour’ modification, where the time duration is an argument of the verb, along with ‘in an hour’ modification, where the temporal PP is a modifier with a freer syntactic position. The prefix *s-* allows only ‘in an hour’ modification, thus occupying an intermediate position. This could be explained by the fact that lack of duration is a part of the meaning of the prefix. In (21a) and (21b) ‘for an hour’ modification is illustrated.

- (21) a. Okazalosj tak tjaželo do-plavatj lišnie dvadcatj minut.
turned.out so hard DO-swim extra twenty minutes
 ‘It turned out so hard to finish swimming the extra twenty minutes.’
- b. Matrosy ot-plavali rejs.
sailors OT-swam trip.
 ‘The sailors completed sailing the trip (and will not sail again)’

All the completive prefixes *do-*, *ot-* and *s-* are compatible with ‘in an hour’ type of modification:

- (22) a. Za tri goda on do-plaval do kandidat-a v mastera
in three years he DO-swam till candidate-GEN in masters
sporta.
sports
 ‘In three years he swam enough to be a candidate to masters of sports’
- b. Devočka ot-plavala propuschennye zanjatija za dva časa.
girl OT-swam missed sessions in two hours
 ‘The girl finished swimming (what she was supposed to) for the missed sessions in two hours’
- c. Napugannaja gostj-a s-begala v apteku za pjatj
scared guest-FEM S-ran in pharmacy in five
minut.
minutes
 ‘The scared guest ran to the pharmacy (and back) in five minutes’

The duration prefixes are only compatible with ‘for an hour’ modification.

- (23) a. Čertko pro-plaval dva časa.
 Čertko PRO-swam two hours
 ‘Čertko swam for two hours’
 b. Čertko po-plaval dva časa.
 Čertko PO-swam two hours
 ‘Čertko swam (briefly) for two hours’

With *pere-*, ‘for an hour’ time modification is rather marginal, sampled by one example on Ruscorporea, and the ‘extra ten minutes’ measures the duration of the excess compared to norm, rather than duration of the whole event:

- (24) Pora vyxoditj, a Čertko vse esche net, desjatj linix minut
 time.to go.out but Čertko still more no ten extra minutes
 pereplaval.
 PERE-swam
 ‘It is time to get out, but Čertko is still not here, he swam for ten extra minutes’

Thus, three groups of superlexical prefixes emerge with distinct semantic and syntactic behavior: inceptive, durational and completive.

3.2. Lexical Prefixes

The lexical prefixes mirror the superlexical system in the tripartite division. The dividing criteria for lexical prefixes are the ability to introduce a direct object which is not an argument of the verb, and the case used with corresponding prepositions. Only the *pro-* and *pere-* prefixes, which involve movement through or across, introduce direct objects. E.g. the bus may drive past the bus stop, which is the direct object of driving past. Yet, a bus stop is not an eligible argument of the verb ‘to drive.’ Similarly, a river is not a possible direct object of the verb ‘swim,’ yet, with the prefix *pere-* it becomes possible, as can be seen in the example (26a). The prefixes grouped under TO correspond to the prepositions ambiguous between static place and dynamic place-to-which. The prefixes grouped under FROM are compatible with arguments in PPs in genitive. The prefix *do-*, then, patterns with FROM prefixes. As its meaning ‘up to a certain point’ involves overcoming a certain distance, rather than arriving, it may be argued to occupy two nodes.

	TO			VIA			FROM		
	<i>v-</i>	<i>za-</i>	<i>pod-</i>	<i>pro-</i>	<i>pere-</i>	<i>do-</i>	<i>s-</i>	<i>vy-</i>	<i>ot-</i>
Dir. obj.	*	*	*	yes	yes	yes	*	*	*
Case	ACC LOC	ACC INS	ACC INS	ACC	ACC	GEN	GEN	GEN	GEN

In (25a) and (26a) the ability of the VIA prefixes to license a direct

object is illustrated.

- (25) a. Avtobus pro-exal moju ostanovk-u.
bus PRO-drove my.ACC bus.stop-ACC
 ‘The bus drove past my stop’
 b. *exatj ostanovk-u
drive-INF bus.stop-ACC
 intended reading ‘to drive a bus stop,’ grammatical if bus stop
 is interpreted as a measure of distance.
- (26) a. Devočka pere-plyla rek-u.
girl PERE-swam river-ACC
 ‘The girl swam across the river.’
 b. *plytj rek-u
swim-INF river-ACC
 (‘to swim a river’)

The examples below illustrate the cases used with the prepositions corresponding to the prefixes discussed.

- (27) a. Koška za-lezla v škař /za škař
cat ZA-climbed in wardrobe.ACC /behind wardrobe-ACC
 /pod stol.
/under table.ACC
 ‘The cat climbed into the wardrobe/behind the wardrobe/under
 the table’
 b. Koška sidit v škařu /za škař-om /pod
cat sits in wardrobe-LOC /behind wardrobe-INS /under
stol-om
table-INS
 ‘The cat sits in the wardrobe/behind the wardrobe/under the
 table’
- (28) Malyš do-polz **do** stol-a
child DO-crawled DO table-GEN
 ‘The child crawled (all the way) to the table’
- (29) Malyš s-valilsja s divan-a.
child s-fell S couch-GEN
 ‘The child fell off the couch’
- (30) Malyš vy-lez **iz** krovatk-i.
child VY-climbed from.in bed-GEN
 ‘The child climbed out of the bed’

Thus, three groups of lexical prefixes emerge: FROM, VIA and TO, corresponding to source, route and destination, but are distinct from the three groupings identified for superlexical prefixes.

3.3. First Phase Syntax and Principle of Event Decomposition

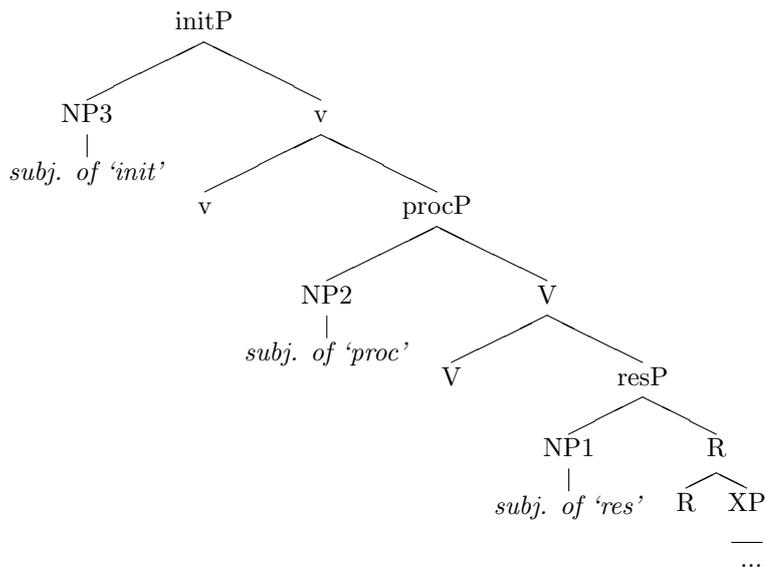
Allowing the three levels in the order of initiation, duration, and completion would fall nicely under the Principle of Event Composition (Ramchand 2004).

- (31) If a head X which introduces an eventuality variable e_x , embeds a projection YP where Y introduces the eventuality variable e_y , then the structure is interpreted as $e_x \rightarrow e_y$ (e_x ‘leads to’ e_y).

Thus, if the head X is beginning, and the head Y is the process, the beginning leads to process. And the process, similarly, leads to completion. For lexical prefixes the same schema works, so that departing FROM the source leads to traveling VIA a certain path, which leads to arrival TO the destination point.

This is close to the proposal of the First Phase Syntax (Ramchand in press):

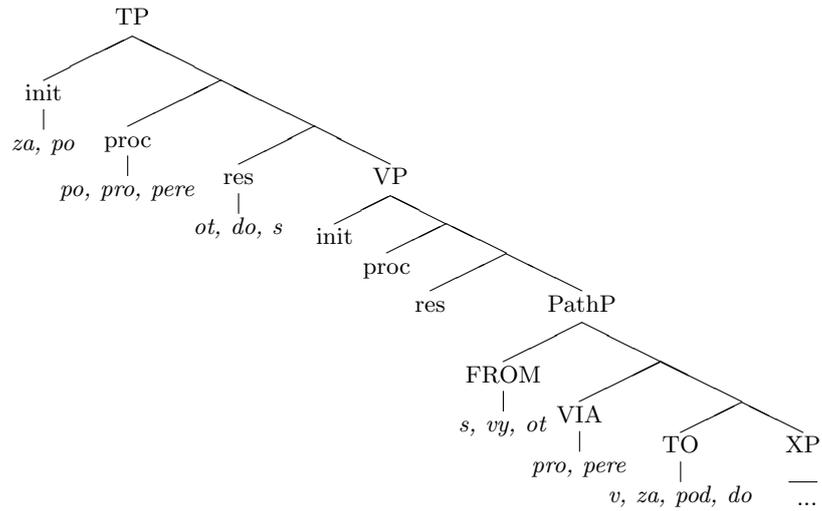
- (32)



To sum up, the structure proposed below unites all the prefixes discussed. The superlexical prefixes are located in T, which mirrors V with *init*, *proc* and *res*, while the lexical prefixes are located below V in a PATH phrase. Yet, there must be higher positions for distributive prefixes, for prefixes

that measure the extent of the event, and there may be some others, so the picture is far from complete, reflecting only the Russian motion verbs (cf. Pantcheva (this volume) for related discussion of Bulgarian).

(33)



4. Prefixes united

This section is dedicated to the task of unifying the prefix meanings in such a way that their appearance in the relevant structural position derives the real prefix meanings.

In order to unify the meaning in time and space, imagine a figure moving in time, and encountering an event, of which the figure is the initiator, as shown below. This is in line with the widely used ‘TIME is SPACE’ metaphor (Lakoff and Johnson 1980) where space is seen as the source domain for time.

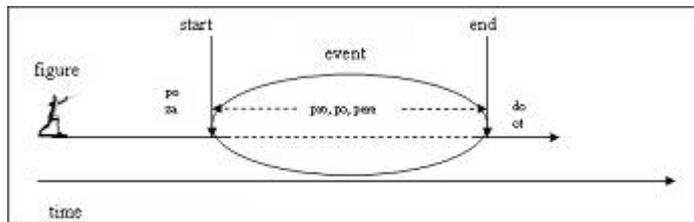
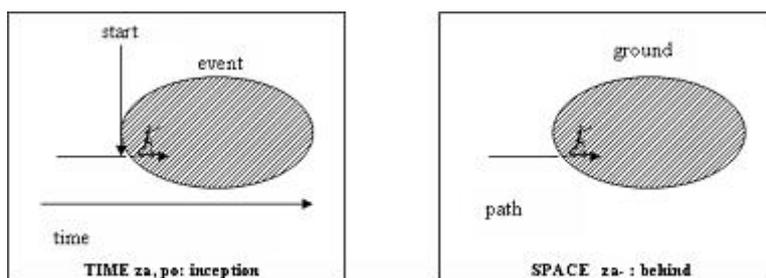


Figure 1: Superlexical *po, za, pro, po, pere, do* and *ot*

4.1. Initiation

The figure crosses the beginning edge of the boundary, thus starting the activity. Since the verbs is either past, or future perfective, the viewer is imagined to look back. Even in the future, the verbs are perfective, thus the reference point is a time in future after the beginning of the activity. Now the figure is behind the beginning, from the retrospective point of view, just like it is behind the ground when we are talking about the spatial *za-*. *Za-* is used with non-directional verbs, as well as other monotonous atelic activities, e.g., *telefon za-zvonil* ‘the phone started ringing,’ or *motor za-rabotal* ‘the motor started working.’ *Po-* is used with directed verbs of motion, and psych verbs such as to *po-kazatjsja* ‘seem,’ *po-čuvstvovatj* ‘feel’ or *po-ljubutj* ‘to fall in love.’ It denotes both the beginning of the activity and the fact that it took place. Now, recall that the preposition *po* means ‘along a path,’ ‘according to an author,’ or ‘after.’ Thus, the figure proceeds along the telic activity, according to its beginning, and most likely reaching the goal.

Figure 2: Superlexical *za-* and *po-*, lexical *za-*

Immediately, two questions arise. First, how can such diverse meanings be united, and a second, tightly connected, what is the reason for the distribution of *po-* and *za-*.

The central meaning of *po* is limitation: the activity is limited by time duration, or by the number of undergoers, where each undergoer is in turn affected by the event. In (16d) and (16e) the preposition *po* can also be argued to have a limitation meaning. In (16d) the PP limits the means of learning, and in (16e) the limitation is temporal sequence, which corresponds to the ingressive meaning of the prefix *po-*. The constructions where the preposition *po* means ‘after’ are rather limited and mostly archaic, and in all cases they delimit a transition to a point of no return: *po smerti* ‘after death,’ *po pribytii* ‘upon arrival,’ *po zaveršenii* ‘upon completion,’ *po vozvraschenii* ‘upon returning,’ *po predjavenii dokumenta* ‘upon showing the document.’

But how does the inceptive meaning fit in? Recall that there are two

inceptive prefixes in Russian: ingressive *po-* with telic motion verbs and psych verbs such as ‘fall in love,’ ‘get to know,’ and inchoative *za-*, used with atelic motion verbs and monotonous intransitive verbs where the subject goes through a considerable change of state.

According to Zaliznyak (2005). *za-* is used with verbs denoting homogenous situations, without distinct beginning, process and end. The inchoative phase is described as cutting out the beginning phase which allows to expect the whole process to look similarly. Most of the verbs denote perceptible events such as *za-šumetj* ‘to start making noise,’ *za-bégatj* ‘to start running around,’ *za-bespokoitjsja* ‘to start worrying,’ *za-vonjatj* ‘to start smelling badly,’ *za-beletj* ‘to become visible as white.’ Zaliznyak (2005) uses this property to explain the grammaticality contrast of two uses of *za-zvonitj* ‘to ring’ below.

- (34) a. Telefon *za-zvonil*.
phone ZA-rang
 ‘The phone started ringing’
 b. **Ona za-zvonila po telefonu*.
she ZA-rang on phone
 ‘(She started calling (somebody) on the phone)’

According to Zaliznyak (2005), the phone ringing is a homogenous event, while a person calling goes through a sequence of different actions. This analysis could be, perhaps stretched to the example discussed in the previous section:

- (35) **Tom za-krasil zabor*.
Tom ZA-painted fence
 intended meaning ‘Tom started painting the fence’

It could be argued that painting a fence is not a homogenous event either. However, the same contrast may be explained, as mentioned above, in line with Dobrushina et al. (2001) analysis by the fact that the phone enters a new state when ringing, while the subject of calling does not go through any radical change of state while performing the act of calling. Thus, *za-* denotes the beginning of a monotonous action at the beginning of which the subject appears to enter a new state.

The ingressive *po-*, on the other hand, is described by Zaliznyak (2005) as pointing to the fact that the action started, with an implication that it will finish. Thus, these verbs are used both to denote the beginning of an action and the fact that it took place. The prefix is compatible with the telic motion verbs *po-jti* ‘walk/go,’ *po-letetj* ‘fly,’ and with psych verbs *po-kazatjsja* ‘to appear/to seem,’ *po-dumatj* ‘to think,’ *po-ljubitj* ‘fall in love,’ where the beginning of the process and the fact of it taking place are hard to pull apart.

Crucially, the motion verbs with *po-*, often imply completion. Compare

(36a), where the speaker did not get to the destination due to illness, and thus the verb refers to the beginning of walking, and (36b), where the speaker clearly arrived at the destination, to be caught by illness there, and thus the verb refers to the fact of both beginning and completion of the trip taking place.

- (36) a. Včera po-šla na lekciju; mne po doroge stalo
Yesterday PO-went on class me.DAT on.the way became
 ploxo.
bad
 ‘Yesterday I started walking to class, but felt sick on the way’
- b. Včera po-šla na lekciju; mne tam stalo ploxo.
Yesterday PO-went on class me.DAT there became bad
 ‘Yesterday I went to class, but felt sick there’

Also, either the beginning of the process or just the arrival point may fall under the scope of negation. Ivan in (37a) stayed home, and never even started walking, while in (37b) he went in the direction of work, so the beginning portion did take place in spite of the negation, though he turned before getting to the destination.

- (37) a. Ivan za-bolel i na rabotu ne po-šel.
Ivan ZA-fell.sick and to work not PO-walk
 ‘Ivan fell sick and did not go to work’
- b. Ivan na rabotu ne po-šel, a svernul v kabak.
Ivan to work NOT PO-walked but turned in pub
 ‘Ivan did not go to work, but turned into a pub’

So, in a sense, limitation is also present in the ingressive meaning, where the beginning of the telic journey limits the figure to a certain path determined by the directional verb, and produces an implication of reaching the goal, thus simply resulting in a perfective meaning. With psych verbs, as well, the fact of beginning to love/seem/think makes loving/seeming/thinking inevitable.

Thus, *po-* in Russian is special in violating the consistent two-fold picture of lexical and super-lexical prefixes, where directional verbs combine with lexical prefixes with spatial meaning and non-directional verbs combine with super-lexical prefixes with a temporal meaning. *Po*, on the contrary, refers to time with both directional and non-directional verbs, and seems to be superlexical in both cases.

The general picture would lead one to expect *po-* to refer to a short distance with directional verbs, parallel to short time with non-directional verbs. Indeed, according to Součková (2004), in Czech, the opposition is as predicted by the path versus time opposition: with directional verbs *po-* modifies path and derives ‘move a short distance,’ while with non-directional verbs *po-* modifies time and derives ‘walk for a short while.’

She then unifies the meanings of *po-* as ‘a little,’ allowing it to contain a measure function, which fits ideally with the time versus space dichotomy as presented for Russian.

Thus, while both prefixes *po-* and *za-* refer to initiation of an activity, their usage is rather different, and tightly connected to their basic spatial meaning, which comes up with the directional motion verbs. Thus, a combination of the structural meaning of ‘initiation’ with the prefix meaning derives the special variety of initiation: either beginning of a homogeneous activity, or of a directed motion.

4.2. Process and Completion

Figure 3 shows how the same *pro-* that measures the distance as a lexical prefix, measures the duration, when it is a superlexical prefix combined with the idiomatic DP ‘duration.’ The *pere-*, which takes a boundary crossed as a complement when it is a lexical prefix, means crossing a normal duration, or the normal end boundary, when it is a superlexical prefix.

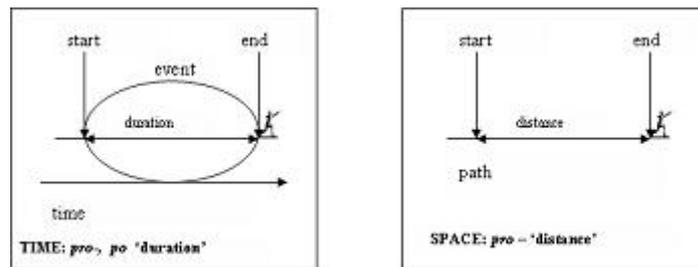


Figure 3: Superlexical *pro-*, *po-*, and lexical *pro-*

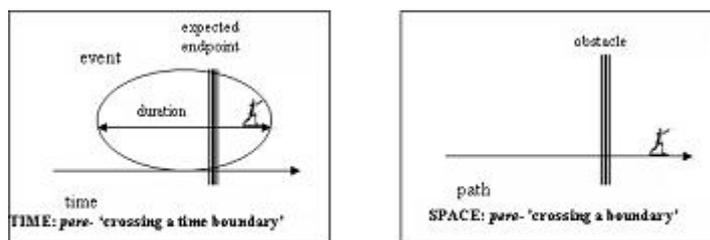


Figure 4: Superlexical and lexical *pere-*

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In Figure 5, *do-* is shown as the figure approaching the end point of the event, parallel to the figure approaching the ground in space, while *ot-* involves the figure moving on the timeline away from the endpoint of the event, parallel to moving away from the ground.

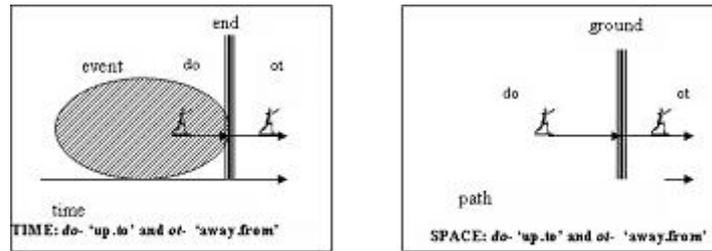


Figure 5: Superlexical and lexical *do-* and *ot-*

In Figure 6, the challenging prefix *s-* is considered. The figure displaces from the normal location either for a short period of time, with subsequent return for superlexical prefixes, or for a short distance for lexical prefixes.

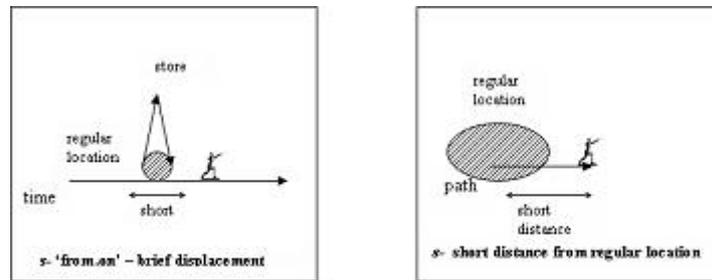


Figure 6: Superlexical and lexical *s-*

Thus, the uniting schema for the prefix *s-* is short distance (paralleled by brief time on the superlexical level) and presence of a basic location.

4.3. Summary

Below is a summary of the structural meanings combined with the preposition meanings deriving the verb interpretation. Each prefix is compatible with certain nodes, e.g., *za-* can appear as specifier of *init* or 'TO,' while

po- is compatible with *init* and *proc*. This is supposedly achieved by formal syntactic properties which can only be ‘checked’ in the given syntactic position. This is possible along the lines of Borer (2005), who suggested the existence of robust syntactic properties resistant to coercion to rule out such constructions as **too much carpets*; and such properties contrast to lack thereof in the lexical entries of coercible cases such as *three wines*.

- ‘init’ refers to the start boundary of the activity.
 - ZA- (behind) + ‘init’ = the figure is behind the beginning edge of the activity, i.e., started the activity.
 - PO- (boundedness, delimitation, according to) + ‘init’ = the figure is limited by the beginning edge of the activity, i.e., has started the (telic) activity, and proceeds accordingly, and there is an implication that the activity will be finished.
- ‘proc’ may be modified with a ‘for an hour’ phrase, obligatorily with PRO-, optionally with PO- (where it denotes a small time when empty), and rarely with PERE- (where it denotes excessive duration).
 - PRO- (through) + ‘proc’ = the figure goes through a certain duration of an activity (which must be specified) from beginning to end.
 - PO- (limitation) + ‘proc’ = the figure goes through a limited duration of an activity.
 - PERE- (crossing) + ‘proc’ = the figure crosses the normal duration of the activity.
- ‘result’ may be modified with ‘in an hour’ phrase, combined with ‘duration,’ which is modified with ‘for an hour’ phrase, hence possibility of both modifications.
 - OT- (away from) + ‘result’ = the figure, having completed the activity, is moving in time away from the activity (which leads to the implication of never repeating the activity).
 - DO- (untill) + ‘result’ = the figure is moving towards the completion (and has reached it, if the verbs is in the past).
 - PERE- (across) + ‘result’ = the figure has crossed the expected completion point, and yet continued with the activity.
 - S- (from.on, a short deviation): the prefix patterns with completion prefixes, as allowing ‘in an hour’ modification, but disallows ‘for an hour’ modification as it involves no duration. The figure begins and finishes the activity in no time, and ends up at the starting point.

5. Conclusion

Though there is no direct evidence for this particular order of the nodes occupied by the prefixes, there is a range of data with a suspiciously familiar hierarchy, including related Slavic languages with stacking prefixes, case stacking, and Cinque's (1999) adverb hierarchy. Milićević (2004) talks about two distinct *iz-* prefixes in Serbian, a lexical and a superlexical one, and the ability of suffixes to stack in between the two leads to the conclusion that a more elaborate event structure would be necessary for a complete analysis. Istratkova (2004) discusses a similar case of prefix stacking in Bulgarian, and arrives to the conclusion that the fixed order of superlexical prefixes is reminiscent of Cinque's (1999) adverb hierarchy. More evidence from Bulgarian is presented in Pantcheva (this volume), where the compatibility of verb sub-events with the prefixes containing various path sub-parts is explored.

The order of lexical prefixes is reminiscent of a common phenomenon (in Altaic languages) where 'place to which' interpretation is achieved by stacking of a location suffix onto a direction suffix. Indeed, the role of the prefixes is taken by the multitude of cases in such languages, where allative, ablative, illative, prolative etc. appear on the noun rather than on the verbs.

Though these parallels demand much deeper investigation, it is clear that an elaborate structure is necessary to account for the usage of the Russian verbal prefixes.

The 'time is space' metaphor was shown to play a crucial role in interpretation of the prefixes. The contrast of the prefix meanings between the telic and atelic verbs of motion gave an opportunity to describe a systematic variation of Russian prefixes from their prototypical meaning. For directional motion verbs the domain, modified by the prefix, is path, and movement is described in reference to a physical ground in space. The non-directional verbs lack path, and refer, rather, to movement of a figure in time, in reference to an event that acts as ground. This interpretation is derived by the combination of the prototypical preposition meaning with the idiomatic temporal DPs at a higher syntactic level, which leads to the differences in the syntactic behavior of these prefixes.

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