

Verbal Prefixes in Russian:
Conceptual structure versus syntax¹

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0. ABSTRACT

At a 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 the beginning of an action, movement to a position behind an object, a brief deviation from a path, or completion of an action. I propose a unified analysis of prefixes, 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 turns out that prefixes modify path when added onto a directional motion verb and refer to movement in time with non-directional motion verbs. This semantic distinction corresponds to distinct sets of syntactic properties, characteristic of the lexical and superlexical prefixes. Furthermore, a tripartite division emerges in each set of prefixes, corresponding to source, path, and goal of motion (TO, FROM, VIA) for lexical prefixes and to beginning, completion and duration for superlexical prefixes. This leads to the suggestion that the same prefix with a consistent conceptual meaning, shared with the corresponding preposition, receives part of its denotation from its position in the syntactic representation. The separation of conceptual meaning from the structural meaning allows the polysemy to arise from position, rather than from arbitrary homophony. Thus, conceptual structure is unified with syntax.

1. INTRODUCTION

This paper addresses the problem of widespread polysemy of Russian verbal prefixes, particularly when added to motion verbs. I argue that seemingly different uses of a prefix share a core lexical meaning, but differ in their syntactic position. When added to a directional motion verb, prefixes behave as lexical, i.e. generated inside VP (cf. Romanova 2007: ch.3). In this case the meaning refers to the spatial domain. When the same prefix is added to a non-directional motion verb, it behaves as a superlexical prefix, i.e. is generated in a syntactically higher position, above Aspect, and its meaning is associated with the temporal domain.

Furthermore, the prefixes in the spatial and temporal domain demonstrate an intriguing parallelism: in the spatial domain, the prefixes may refer to beginning, duration and end of the path (i.e. source, route and goal), while when applied to the temporal domain the prefixes are associated with beginning, duration and completion of the event in time. For example, consider the prefixes in (1). In (1a) *pro-* refers to the length of the path in space, while in (1b) the same prefix refers to duration of the activity; in (1c) the prefix *pere-* refers to crossing a boundary across the path in space, while in (1d) it refers to crossing a temporal boundary (e.g. after which swimming is inadvisable).

(1) (a) *Pro-jti* *pjatj kilometrov.*

PRO-walk^{dir} five kilometers.

‘to walk five kilometers.’²

(b) *Pro-xoditj* *pjatj chasov.*

²‘*dir*’ stands for directional, see appendix for the full list of abbreviations

PRO-walk^{non-dir} five hours

‘to walk for five hours.’

(c) Pere-plytj rek-u.

PERE-swim^{dir} river-ACC

‘to swim across the river.’

(d) pere-plavatj v bassejne

PERE-swim^{non-dir} in swimmingpool

‘to swim too much in a swimming pool’

The table below lists some of the uses of lexical and superlexical prefixes with motion verbs.³

Prefix	Meaning of Lexical Prefix	Meaning of Superlexical Prefix
do-	adlative	completive
za-	illative	inceptive
ot-	ablative	completive
s-	superlative	‘there and back’
pro-	perdurative	duration
po-	inceptive	limited duration
pere-	translative	excessive duration

Table 1
Lexical and Superlexical Prefixes

This list is limited to the uses of prefixes compatible with motion verbs. The motion verbs display a directional vs. non-directional distinction, where the directional verbs denote movement to a goal, while non-directional verbs denote sporadic goal-less moving around. The directional verbs combine with lexical prefixes and the non-directional ones combine with superlexical prefixes.

³As pointed out by an anonymous reviewer, ZA- can refer to a short side-trip with some of the verbs (e.g. *za-bežatj v magazin* ‘to run by the store on the way’). However, the meaning still involves briefly entering some space, so I treat them as a subclass of occlusive meaning. The briefness of the visit seems to arise from context and pragmatic knowledge, as it appears only with certain goal-complements, mostly stores and people visited, and is often explicitly stated by adding phrases like ‘on the way’ or ‘for a second’.

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 historically grounded, but synchronically irrelevant. An exhaustive list of all the uses is descriptively adequate, e.g. in the classic Ožegov (2001) dictionary, as well as in Švedova's (1980) grammar, the prefixes are listed with at least two meanings. Yet, these meanings are interrelated, and the relations between them are predictable. Treating the polysemy as homophony does not allow one to capture the synchronic generalizations about these relations.

Homophony would also present a problem for language acquisition, as the historical data cannot be available to a language learner. A child, encountering two identical morphemes, which have some overlap in meaning, should initially assume that it is the same lexeme, and try to establish rules for its distribution, rather than freely assume homophony. Thus, the preferable solution would unite the prefixes, so that each prefix would have one meaning, which would vary predictably depending on its function.

I assume that one part of the meaning comes from the lexicon and another part of the meaning comes from the syntactic structure (cf. Borer (2005), Ramchand (2008)). The 'neo-constructivist' view taken in Ramchand (2008) is that "the reason syntactic structures have meaning is that they are systematically constructed as part of a generative system (syntactic form) that has predictable meaning correlates".

The position which I adopt here is that there is a non-structural component of meaning of a prefix which comes from the lexicon, and that each position in a syntactic representation has a specific, independently motivated meaning. For example, the unique meaning of *pro-* ‘through’ would combine with the meaning contributed by the position either in the path domain or in the time domain, to result in the reading of overcoming a certain distance (if *pro-* is attached at the path level) or lasting a certain time (if *pro-* is attached at the time level).

I adopt a ‘neo-constructivist’ viewpoint, in particular ‘the first-phase syntax’ of Ramchand (2008) and a cartographic approach to syntax, where syntactic trees are built from individual atomic features. Furthermore, I rely crucially on the lexical/superlexical distinction in the first phase syntax framework (cf. Svenonius (2004)).

The lexical prefixes are grouped into three types with contrasting syntactic properties: ‘Route’, ‘Source’, and ‘Goal’ prefixes, respectively referring to the trajectory, source, or goal of movement (cf. Zwarts (2005), Pantcheva (2011), Gehrke (2008)).

The contrast between source and goal prefixes in Slavic languages has been widely discussed. In Czech, according to Filip (2003) and Součková (2004), the contrast between Source and Goal prefixes is evident from their compatibility with measurement phrases (e.g. ‘a little’, and prefix *po-* with a similar meaning), where Source prefixes, as open scale predicates, are compatible with measurement phrases, while Goal prefixes, as closed scale predicates, are not.⁴

⁴Note the similarity of such contrast to the compatibility of superlexical prefixes with the time measurement phrases, determined by the closed vs. open scale interpretation.

Furthermore, Pantcheva (2007) considers a tripartite division of Bulgarian prefixes into source, path and goal, based on the compatibility of prefixes with verbs with different subevental structure. Pantcheva (2007) divides the motion verbs into four classes, depending on which subevental heads (*initiationP*, *processP* and *resultP*) they instantiate. It turns out that Source prefixes appear to be available only for motion verbs that do not instantiate *init*, i.e. lack an external ‘Initiator’ argument (e.g. *padam* ‘I fall’, *butam se* ‘I push myself’). Similarly, the Goal prefix attaches only to motion verbs that have no *res* feature, i.e. do not lead to a particular result state (e.g. *tancuvam* ‘I dance’, *butam se* ‘I push myself’). Crucially, Pantcheva (2011) further argues for a decomposition of the Path head into goal, source, and route, based on cross-linguistic data showing that different types of paths are of different complexity and only syncretism of adjacent nodes is attested.

I argue for a parallel tripartite division of superlexical prefixes, into inception, completion and result (cf. the homomorphism between an event and a generalized path introduced by Krifka (1998)). Once the existence of the lexical and superlexical division, with a tripartite structure on each level, is established, I will show the meaning contribution of the structure, which will allow me to reduce ‘homophonous’ prefixes to a single lexical entry.

2. FRAMEWORK

2.1 *Lexical and Superlexical Prefixes*

The assumption in this paper is that Russian verbal prefixes fall into two classes, which correspond to the lexical vs. superlexical distinction (Isačenko (1960),

Schoorlemmer (1995), Babko-Malaya (1999), Romanova (2004), Svenonius (2004)). Lexical prefixes, as potential argument-structure modifiers, are generated in a position inside VP. Superlexical prefixes modify the event itself and do not change argument structure or the core meaning of the base verb and are therefore syntactically higher, above the aspect head (Pereltsvaig, 2006). According to Romanova (2004), the lexical prefixes attach mostly to perfective or telic stems (if the verb is supplied with the option), 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 (*pere-* in (2a), *vy-* in (2b), *nad-* in (2c)).

Superlexical prefixes attach to imperfective or atelic stems, do not allow the verb to form secondary imperfectives, can stack (though this is not a frequent phenomenon in Russian), can measure over events or objects, do not change the argument structure of the verb. The examples below ((2a,b) are adopted from Beliakov (1997)) illustrate the superlexical prefixes (*ot-*, *pro-*, *po-*) stacking over the lexical prefixes:⁵

(2) (a) *Ot-pere-biral ty bumagi. ...Uvoljnajut tebjja.*

COMPL-ACROSS-take.2IMPF you papers-ACC. ...Fire-3PL you-ACC

‘You are done with sorting papers. They are firing you’

(b) *Pro-vy-dergival morkovk-u poldnja.*

DUR-OUT-pull.2IMPF carrot-ACC half.day

⁵Romanova (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.

‘He spent half a day pulling out carrots’

(c) A što ne sjem, to po-nad-kušu!

and what not eat that DISTR-SLIGHT-bite

‘And whatever I cannot eat, I will bite slightly one by one’

In (2a) and (2b) the first, superlexical prefix, attached to the prefixed imperfective stem, refers to the time of the event, without affecting the meaning of the main verb. *Ot-* in (2a) refers to the permanent completion of the event, while *pro-* in (2b) refers to duration. *Po-* in (2c) is an example of the distributive reading. The lexical prefixes are closer to the root and change the lexical meaning of the verbal stem, rather than simply 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 (2) (*ot-*, *pro-*) may act as lexical prefixes with the same verbs, when adjacent to the root:

(3) (a) *ot-bira-tj bumagi*

AWAY-take-INF papers-ACC

‘to take away (from smb., by force) / to select the papers’

(b) *pro-dergiva-tj nitku v igolku*

THROUGH-pull-INF thread-ACC in needle-ACC

‘to pull the thread through the needle’

While the position of the lexical prefixes in the result projection of the verb, i.e. as the verb complement and its derivation by movement, is relatively clear, both the position and the derivation of the superlexical prefixes is a matter of controversy.

Babko-Malaya (1999) suggested that the ‘superlexical prefixes are prefixes that are adjoined to Asp and incorporate into the verb as the result of head movement’. Pereltsveig (2006), on the contrary, uses combinatorics of the superlexical prefixes with aspect suffixes to show that the superlexical prefixes must attach higher than IMPF2 (the aspect head, containing secondary imperfective), which makes it impossible for secondary imperfection to scope outside of a superlexical prefix. Following Pereltsveig, I will assume a position between Tense and Aspect, based on the interplay of aspect with prefixes.

The second question is whether the superlexical prefixes originate in this position or are derived by movement. Julien (2002) suggests two possibilities of prefix derivation: ‘either the prefix originates in the complement of the lexical element and moves to the left of the lexical element (by head movement or XP movement) or the prefix originates to the left of the lexical element and there is no subsequent movement operation that alters the relative order of the two items.’ I suggest that both of these possibilities are used by the Russian verbs: the first - by the lexical prefixes, while the latter - by the superlexical prefixes.

The origin of the lexical prefixes inside the verb phrase explains the fact that the lexical prefixes can be idiosyncratic; whereas the origin of superlexical prefixes above aspect explains that the meaning of superlexical prefixes is stable and does not differ from one verb to another. Furthermore, the difference in the syntactic position explains the stress patterns, where the lexical prefixes are capable of changing the stress of the verb, while the superlexical prefixes do not affect the stress on the main verb.

To sum up this discussion, I assume that the superlexical prefixes are base-generated in a functional projection between aspect and tense, while the lexical prefixes are base generated inside VP, and I will discuss the structure in detail in section 3.

2.2 Directional vs. non-directional verbs

In the table below is a nearly exhaustive 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’.

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

Table 2
Motion Verbs: Directional and Non-directional

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

(4) (a) *pro-bežatj* *pjatj kilometrov.*

THROUGH-run^{dir.P} five kilometers.

‘to run five kilometers’

(b) *pro-begátj* *pjatj kilometrov každoe utro.*

THROUGH-rundir.2IMPF 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 (5b). 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 the path when lexical, refers to the time duration when it is superlexical.

(5) (a) *pro-xoditj* *pjatj časov*

PRO-walk^{non-dir.I} five hours

‘to walk for five hours’

(b) **pro-xaživatj* *pjatj časov každoe utro*

PRO-walk^{non-dir.SI} five hours every morning

‘to walk for five hours every morning’⁶

The following section provides an analysis of the directional/non-directional verb distinction and lexical/superlexical prefix distinction in the first phase syntax framework.

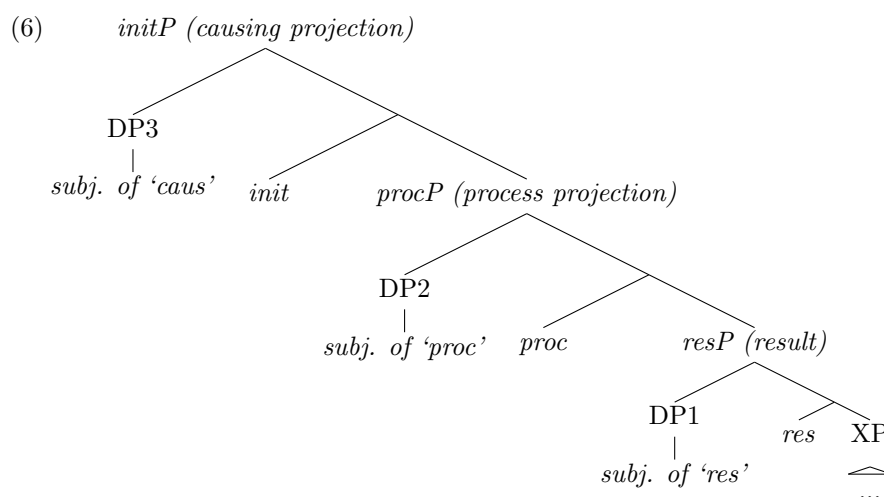
2.3 *Prefixes in First Phase Syntax*

On the basis of a cross-linguistic study of verb semantics and argument structure, Ramchand (2008) proposed a tripartite division of eventualities into initiation,

⁶*Xaživatj* is the irregular secondary imperfective of the verb *xoditj* ‘to walk’.

process and result. Such decomposition is governed by the Principle of Event Composition (Ramchand, 2008), where initiation leads to process and process potentially leads to a result state.

Res and *init* projections are optional, e.g. unaccusative verbs lack the *init* projection, and unergative verbs lack the *res* projection. Each of these subevents, when present, is represented as its own projection, ordered in the hierarchical embedding relation as shown below in (Ramchand, 2008: 46).



Each subevental head enters into a predicational relation with the specifier position. Thus, the three core projections suggested by Ramchand (2008: 48) are:

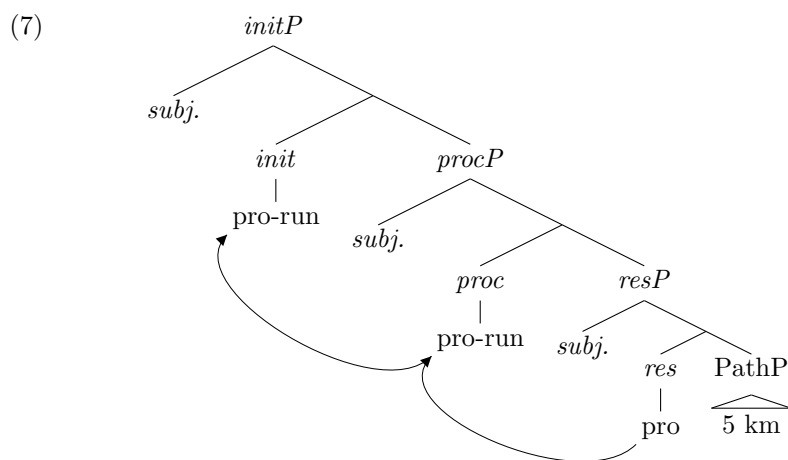
- *initP* introduces the causation event and licenses the external argument ('subject' of cause = INITIATOR)
- *procP* specifies the nature of the change or process and licenses the entity undergoing change or process ('subject' of process = UNDERGOER)
- *resP* gives the 'telos' or 'result state' of the event and licenses the entity that comes to hold the result state ('subject' of result = RESULTEE)

Since verb meanings are compositional, there is no requirement that ‘first-phase predications’ be monomorphemic (Ramchand 2008:138), which predicts productive processes of result augmentation. Therefore, lexical prefixes are treated as a morphological consequence of such result augmentation. Ramchand shows that the verbs with lexical prefixes contain a *res* projection, as evidenced by the changed semantic participation of the object, idiosyncratic interpretations and cooccurrence restrictions, and incompatibility with ‘for an hour’ adverbials. Since the natural result of directional motion verbs is change in location, the domain of lexical prefixes is space.

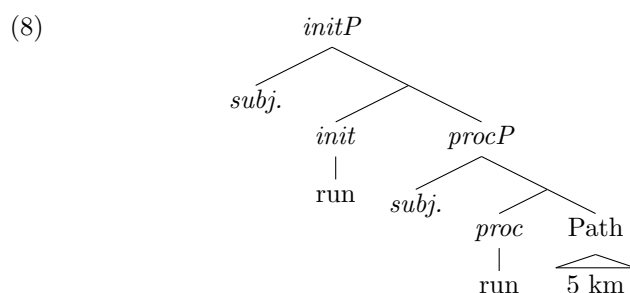
Babko-Malaya (1999) argues that the path is actually the argument of a motion verb, parallel to the patient of a real transitive verb, which further supports the tight connection of the *res* projection with the path.

With directional motion verbs, the subject is simultaneously the initiator, the undergoer and the holder of the result state (i.e. the new location, in the case of motion verbs). The ‘result’ of the directional verb is the location of the subject at the final point of the path specified (e.g. 5 km from the initial location in (4a)), after having travelled that path.

Below I give an example of the composition of a directional verb with a lexical prefix and path in (4a):

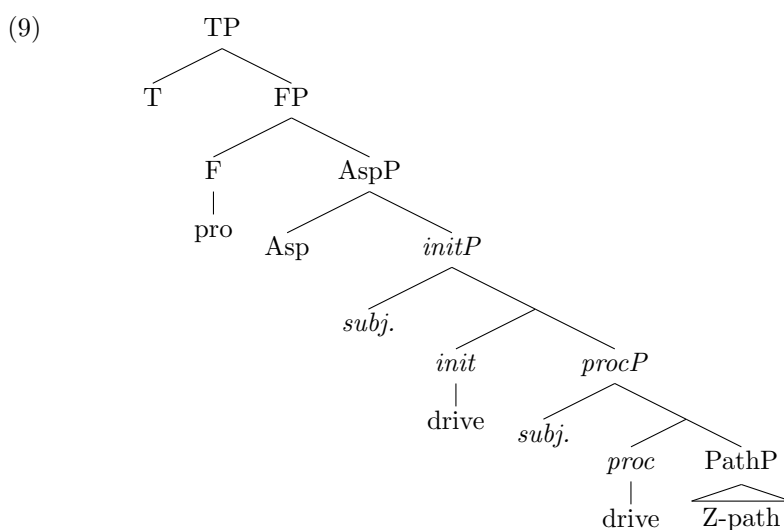


This contrasts with the unprefixated imperfective counterpart *bežatj pjatj kilometrov* ‘to run.DIR. five kilometers’, which lacks the result projection and path is the complement of the *proc* head.



Romanova (2007) suggests that the non-directed motion verbs incorporate a silent Z-path, introduced in Rheme, in the complement of process. The Z-path stands for Zwartsian path, that is paths that overlap, cross and go back, which describes the sporadic movement without a goal, denoted by non-directional motion verbs. Thus, while both directional and nondirectional motion verbs have *init* and *proc* heads, the incorporated path projection, which occupies the *proc* complement position, makes it impossible for overt paths, and hence lexical prefixes, to merge.

The presence of an incorporated element, furthermore, accounts for the morphological complexity of the non-directional motion verbs, compared to the less complex directional verbs. The structure of a non-directional motion verb (*ezditj*, ‘to drive around’) with a superlexical prefix (*pro-*) is illustrated below:



At this point it is important to clarify the distinction between telicity and perfectivity (cf. Borik (2006)). An imperfective verb may be telic under habitual and episodic readings, thus telicity does not entail perfectivity:

(10) Petja (uže) pere-sek-a-l etot kanal za polčasa

Petja already PERE-cross-IMPF-PAST this channel in half.hour

‘Petja used to cross this channel in half an hour’

‘Petja has already once crossed this channel in half an hour’

The presence of the result projection with a lexical prefix in its specifier makes the verb in (10) telic. The secondary imperfective ensures that it is not perfective.

Similarly, Borik (2006: 78) shows that perfective verbs with superlexical *po-* and *pro-* prefixes are atelic, by adverbial modification, progressive entailment and conjunction tests, but confirms that they are perfective because they are ruled out in the complement position of the phase verbs, like regular perfectives. This is a typical situation for superlexical prefixes. Thus, telicity and perfectivity are distinct categories and do not entail each other.

Richardson (2007) defines telicity in terms of cumulativity and divisiveness: "if a predicate can be divided into parts and sums and those parts and sums are not equivalent, the predicate is telic." Perfective eventualities are limited in time and packaged as single unitary actions.

If the complement selected by *proc* is a path (or any scale of change in terms of Rappaport-Hovav (2008)), this path makes the verb, so to speak, *potentially* telic and selects for a lexical prefix to measure it, and then the *res* projection can be the complement of *proc*, in which case the path becomes the complement of *res*.

If the complement of the *proc* contains conflated material, such as Z-path, the *res* projection cannot be attached, as the *proc* complement position is occupied by material that is inseparable from the verb root in *proc*.

Superlexical prefixes are incompatible with verbs that select for a directed path (which is a subcase of a scale of change), because these verbs cannot be divided into parts and cannot be packaged as unitary action by perfective aspect.

This operation applies only to atelic verbs⁷. To sum up the discussion in this subsection, the following generalizations emerge:

I. The lexical prefixes describe the movement of the resultee with respect to ground, attach inside the *res* projection, and hence require its presence and availability.

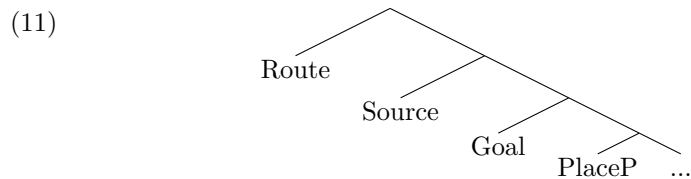
II. The superlexical prefixes attach to verbs above aspect, and package atelic events into bounded chunks. Hence they are incompatible with telic events.

3. LEXICAL AND SUPERLEXICAL PREFIXES AND THEIR INTERPRETATION

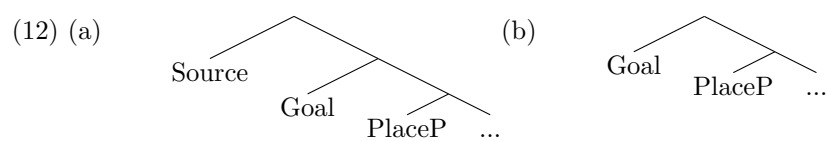
The previous section explored the contrast between the two distinct syntactic positions where prefixes may be potentially attached: the lexical and the superlexical sites of attachment. This section describes the identical lexical and superlexical prefixes as manifestations of a single lexeme. A central 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.

Once the existence of the two classes of prefixes is established, lexical and superlexical, it turns out that each class should be subjected to a tripartite division. Path is decomposed into goal, source and route (Pantcheva, 2011), where route is syntactically the most complex projection, containing both source and goal:

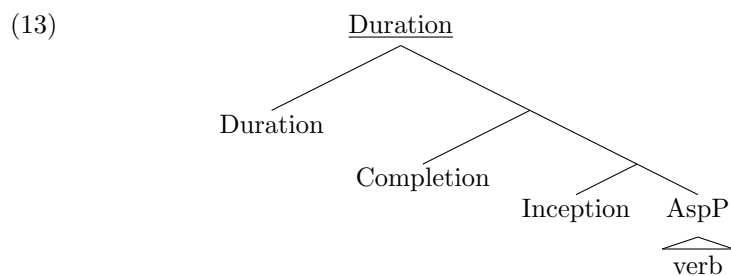
⁷Some superlexical prefixes are compatible with secondary imperfective of telic verbs, but only under the condition that a lexical prefix is present. In that case the lexical prefix satisfies the requirement of the path to be measured in the perfective, and the secondary imperfective makes the verb compatible with superlexical prefixes



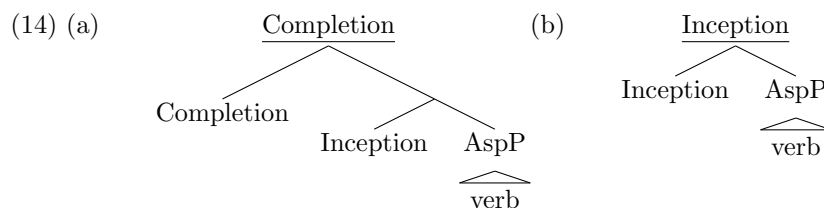
Source contains goal and place, and goal is the simplest of the three, containing place projection.



Similarly, I suggest that the superlexical projection, F, attached above the AspectP, is subdivided into inception, completion and duration (tree 7). The semantic contribution of each head is discussed in the subsequent sections. Duration, like Route, is the most complex.



Completion, parallel to Source, contains Inception. Inception is parallel to Goal as the simplest projection:



Consider the visualization of source, goal, and route suggested in Pantcheva (2011) (adopted from Zwarts, 2005), where the pluses indicate being at a place, and minuses indicate not being there:

Goal	Source	Route
--- +++	+++ ---	--- +++ ---
0.....1	0.....1	0 1

Zwarts (2005)

I show in this section that superlexical prefixes will fall under the same typology. Goal paths correspond to inception: there is one strictly punctual transition from not being in a certain location/activity to entering the location (with lexical) or activity (with superlexical prefixes). Source prefixes, similarly, correspond to completion prefixes, as both indicate a plus to minus transition, i.e. from being at a location or involved in an activity, to not being there. Route prefixes, thus, correspond to duration, involving two transitions: either both source and goal of a path, or both beginning and end of an activity.

3.1 *Za-*. Goal and Inception, --- +++

The prefix *za-* is notoriously versatile, and the whole diversity of its meaning may hardly be discussed in the limited space here, yet if we limit ourselves to motion verbs, the time-space parallel is clear. With directional verbs the prefix modifies

path, so that the figure enters into some closed space, e.g. (15a).⁸ With non-directional verbs the subject enters a new state, e.g. the clock enters the working state in (15b), or the uncle enters a jumping state in (15c). As a lexical prefix, *za-* means movement into the goal, while as a superlexical prefix it gives rise to an inceptive meaning.

(15) (a) Čelovek za-šel v dom.

man ZA-walked^{dir} into house.ACC

‘The man walked into the house’

(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’

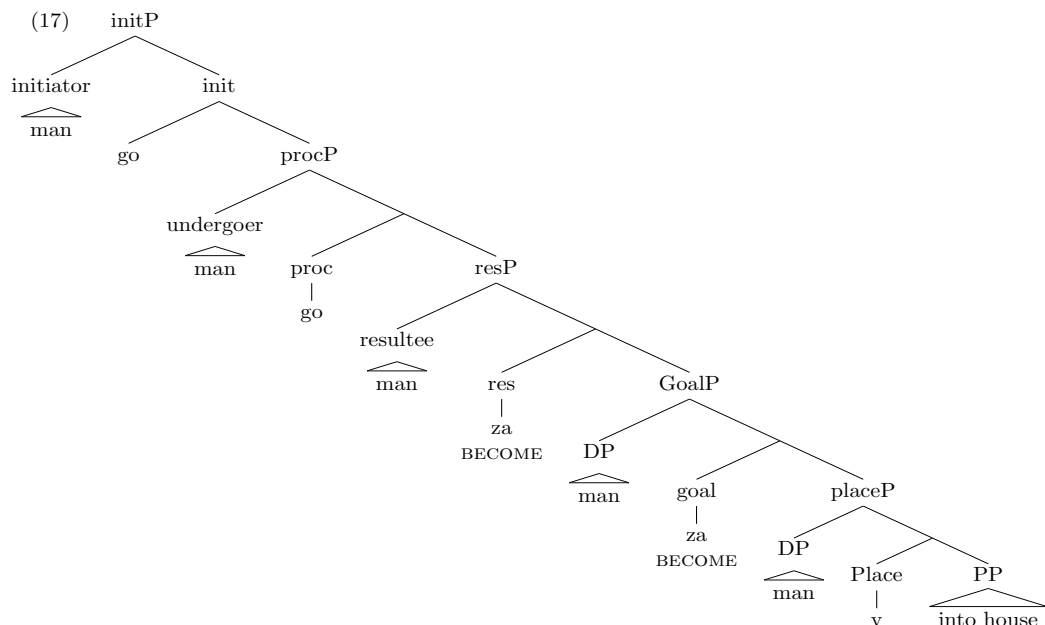
Thus, *za-* in the spatial domain introduces a bounded path, which ends up in a certain place, i.e. at time 0 the figure is not at the place specified, while at time 1 it is inside the closed area. This type of transition corresponds to Dowty’s (1979) BECOME operator or Wunderlich’s (1991) CHANGE operator. As we can see in (16), the BECOME operator is conveniently universal and can be applied to path or time:

(16) [become x] is true at an interval I iff (i) there is an interval J containing the lower bound of I such that $\neg x$ is true at J, (ii) there is an interval K containing the upper bound of I such that x is true at K..., there is no non-

⁸With non-directional transitive verbs the patient enters the result state, hence the completive interpretation results. With intransitive verbs there is no patient and no result state, so the transition must happen to the initiator, hence the inceptive reading emerges.

empty interval I' such that $I' \subset I$ and conditions (i) and (ii) hold for I' as well as I . (Pantcheva, 2011)

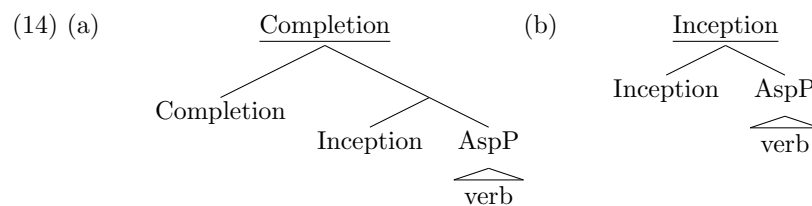
Below is the structure of (15a). The subject moves up consecutively through Place, Goal, Result and Process. The prefix *za-* lexicalizes both place and goal projections, and moves up to left-adjoin the verb. The Goal projection contains the BECOME operator, which takes the location (in the house) as argument, i.e. *za-* means [become-in]:



In the temporal domain, a similar picture can be drawn to mark the transition, where at the time of the initial boundary of the event, the actor (initiator) is not performing the activity while at time 1 the actor is involved in the event. Thus, inception is very similar to a ‘goal’ type of path, involving one punctual transition from not being to being. The argument of the become operator is either the place projection, when we are in the path domain, or the aspect projection for

superlexicals, in which case x refers to the subject's involvement in the activity. Thus, x may be a place or a homogenous activity. The operator is not compatible with transitive verbs that do not provide an initiator and a homogenous property that may hold true or false of the subject at a certain interval.

Below, the structure of the inception projection in (15c) is given to illustrate this point.



In this case *za-* is a superlexical prefix and is generated in the projection above aspect. *Uncle*, the initiator co-indexed with the undergoer, moves to the specifier position of the inception head. The verb moves from the *proc* head to *init* and aspect, and is preceded by the superlexical prefix.

3.2 *ot-*, *s-*. Source and completion, +++ ---

The source projection is syntactically more complex than goal, and takes goal as an argument. Source is the locus of a semantic reversal operation (Pantcheva 2011), i.e. it takes a minus to plus path and reverses it into plus to minus monotransitional path, i.e. source path. Thus, a path directed into a certain location becomes a path directed out of the location.

Similarly, the completion projection reverses the meaning of the inception projection, creating a new type of transition event. I do not claim that the completion head reverses time; time linearity is preserved, but the point of view is changed. While in case of inception the time flows into the event denoted by the

verb-stem, in case of completion, time flows out of it (towards the reference time). For the inception projection at the lower boundary of the interval the subject is not involved in the activity, and at the upper boundary it is; for completion the lower and upper bounds change places. The ‘x’ denoting involvement in the activity is true at the lower bound and false at the upper bound.

For directional verbs, *ot-* ‘from near’ refers to movement away from a point, where the distance separating the figure (the boy in 3.2) from the ground (the fire in 3.2) is increasing, while for non-directional verbs the time separating the figure (initiator, the plane in (19b)) from the past event (flying in (19b)) is increasing.

(19)(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)’

Both lexical and superlexical usages of the prefix involve a transition from being in a certain location or involved in an activity, to not being, which is visualized by pluses changing to minuses.

Another prefix involving the same kind of transition is *s-*. The prefix *s-* involves displacement from a ‘regular’ location in case of directional verbs (cf. ‘off’), and a brief trip there and back, with subsequent return, in case of non-directional verbs .

(20)(a) poezd so-shel s reljs.

train s-walked from rails

‘The train derailed’

(b) S-begaj za pivom!

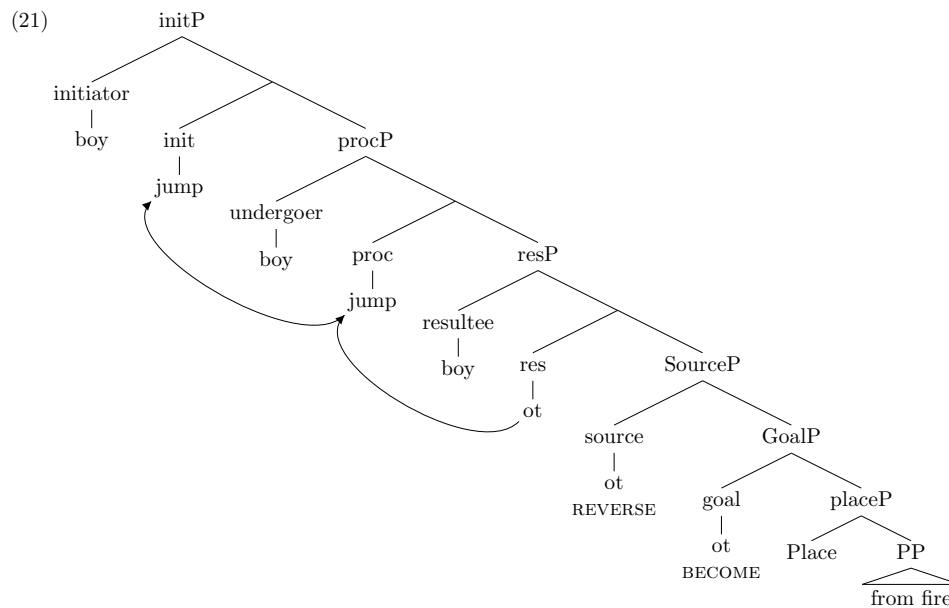
s-run^{non-dir} for beer

‘Run get some beer (quickly, and then return)’

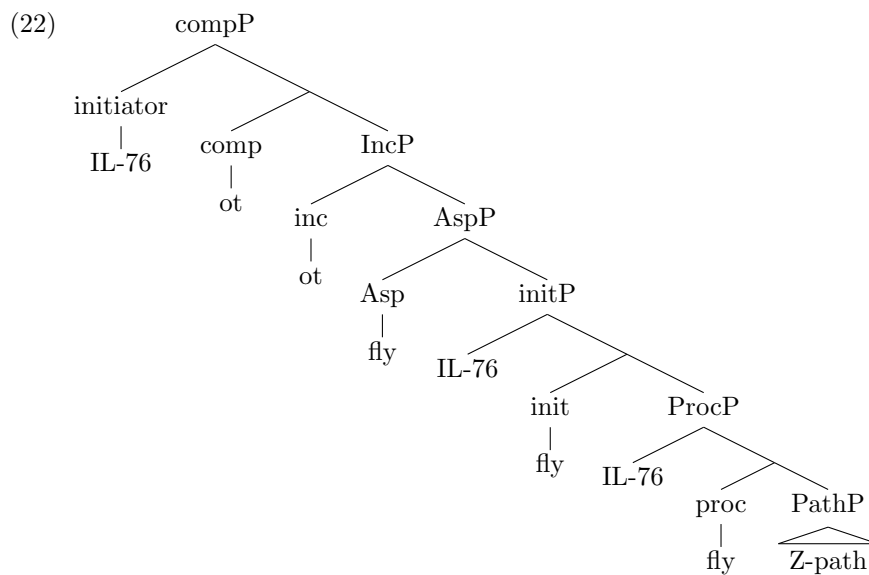
The path is of source type, +++ – – –, i.e. the figure is at a location in the beginning of the path, and away from it at the final point. The initial relationship between figure and ground (‘near’ in case of *ot*, and ‘on’ in case of *s*) must be a part of the lexical entry of the prefixes, and what makes them different, in spite of the shared path type features.

In the superlexical usage there is a punctual transition from running to get the beer to not running, i.e. a plus to minus type of transition. The lexical entry of the prefix contains information about the specific relationship between figure and ground preceding the displacement, as well as about the terminated activity (e.g. that it was a fast there and back trip), while the source / termination part of the meaning originates from syntax.

The tree below illustrates how the source path is generated for lexical prefixes, as in (19a). The goal projection contains a TO-path, where the figure comes to be at the ground, the source reverses the BECOME function, so the figure comes to be away from the ground. Then the prefix moves to *res*, and to *proc*, where it left-adjoins to the *proc* head, lexicalized by directional jump, resulting in jumping away.



Similarly, completion is the reverse function of temporal become, introduced by the inception node, as shown in the structure of (19b) below:



Thus, in this section we saw the similarity of the structure of source and completion prefixes. Both structures are complex and contain, correspondingly,

goal and inception. Both projections take BECOME X as an argument and reverse it, creating an interval directed out of x , where x is either a place or an activity.

3.3 *pro-*, *do-*. *Via, duration*, --- +++ ---

The prefix *pro-* ‘through’ is a measure of distance with directional verbs, and a measure of time with non-directional verbs. Two transitions are involved here: the beginning and end of a path or activity, and the distance/time between the two points can be measured.

(23) (a) *pro-jti* *pjatj kilometrov*

pro-walk^{dir} five km

(b) *pro-xoditj* *vesj denj*

pro-walk^{non-dir} all day

‘to walk (around) all day’

The prefix *do-* ‘up to’ refers to movement or persistence of activity up to a certain point:

(24) (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)’.

The prefix *pere-* ‘over’ refers to crossing a boundary, which may be a boundary in space for directional verbs, or a temporal boundary (e.g. after which swimming is

too tiring) in (25b) for non-directional verbs.⁹ This usage is similar to the English preposition ‘over’, which may also be used to refer to crossing a boundary both in space (‘the bridge over the river’) and in time (‘to overstay your welcome’).

(25)(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 *po-* produces an inceptive reading with directional verbs, and delimitative reading with non-directional verbs.

(26) (a) po-bežatj

PO-run^{dir}

‘to start running’

(b) po-bégatj

po-run^{non-dir}

‘to run for a while’

Importantly, 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 superlexical prefix appears with non-directional verbs. Like a

⁹There are, of course, more uses with verbs other than verbs of motion, where the crossing of the boundary refers to quality, with the meaning ‘to outdo someone’, e.g. *pere-xitritj* ‘outwit’. Another use is distributive over objects, e.g. *pere-streljatj* ‘to shoot all one by one’. These are measure and distributive domains, occupying a node above space and time, which I am not including in the present discussion, though the parallel can be drawn for most prefixes. For a discussion of these prefixes see Romanova (2007) and Součková (2004).

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. The meaning does not allow for immediate classification, but the syntactic combinatoric features of these uses of *po-* pattern with --- +++ --- prefixes.

The non-oriented paths, described above, are derived by adding a Route projection on top of the Source projection (Pantcheva, 2011). Similarly, the duration can be derived by adding a duration projection on top of completion. Both source and completion paths, as shown in the previous section, are monotransitional, where the first phase is positive. Route and duration paths are bi-transitional, and have the positive phase in the middle. Thus the highest, Route or Duration projection, is another transitional head, which adds the transition to the positive phase.

The whole computation of a route path from Pantcheva (2011: 72), is given in (27):

(27) The syntactic and semantic derivation of a Route paths:

- a. [Place ...]
- b. merger of Goal →
- c. [Goal [Place ...]] representing a path of the shape --- +++
- d. merger of Source →
- e. [Source [Goal [Place ...]]] → reversal of Goal path +++ ---
- f. [Route [Source [Goal [Place...]]]] → adding a second transition →

--- +++ ---

Duration in the superlexical domain is derived in the parallel fashion:

(28) **The syntactic and semantic derivation of duration:**

a. [Aspect [init [proc]]] provides the activity and initiator

b. merger of Inception →

c. [Inception [Aspect ...]] introduces the transition --- +++

d. merger of Completion →

e. [Completion [Inception [Aspect ...]]] → reversal of the previous

transition: +++ ---

f. [Duration [Completion [Inception [Aspect...]]]] → adding a second

transition: --- +++ ---

To sum up this section, a clear parallel emerges between

[Route[Source[Goal[Place]]]] and [Duration[Completion[Inception[Aspect]]]].

Every prefix is specified in the lexical entry with the corresponding abstract

features, e.g. the prefix *za-* bears the [--- +++] and thus can spell out either

Inception or Goal nodes, but not or Completion. The prefixes *ot-* and *s-* bear the

[+++ ---] (stacked on top of [--- +++]) feature and can spell out corresponding

Completion or Source nodes, while the prefixes *po-*, *pro-*, *pere-* and *do-* have two

transitions [--- +++ ---] (on top of [+++ ---] and [--- +++]) and thus can

spell out Duration or Route.

4. SYNTACTIC EVIDENCE

The previous section explored the semantic properties of the prefixes, separating the part of meaning that is provided by the lexical entry from the part provided by the structure. The following section focuses on the internal structure of the lexical and superlexical prefixes and introduces syntactic evidence for a parallel tripartite division on lexical and superlexical levels.

4.1 *Lexical Prefixes*

An important piece of evidence for the parallelism of properties demonstrated by prefixes across space and time comes from the possibility of modifying each transition point with prepositional phrases.

Thus, if a lexical prefix contains the goal projection, the verb may be modified by a goal PP as in (29) (cf. Markovskaya, 2006). Crucially, the source is not available for specification with a PP:

(29) My za-šli v dom / *iz doma.

we into-went in house.ACC /out house.GEN

‘We went into the house(/out of the house)’

However, with a source prefix both source and goal are available for modification:

(30) (a) My vy-jehali (iz Moskvy) v Saratov.

we out-went out Moscow.GEN in Saratov.ACC

‘We left for Saratov (out of Moscow).’

(b) My oto-šli (ot doma) / k prudu / v tenj.

we from-went from house.acc /to pond.gen /in shade.

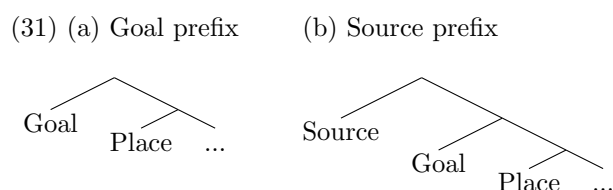
‘We went away (from the house) to the pond / into shade’

(c) Deti s-katilisj s gorki / na pol.

children off-slid off slide.GEN /on floor.ACC

‘The children slid down from the slide /onto the floor.’

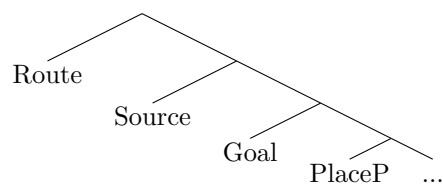
This asymmetry is predicted if the source projection is more syntactically complex and contains the goal projection, as Pantcheva (2011) argues:



A goal prefix introduces only the goal and place projections, which can be further specified by additional prepositional phrases, as in (30a). The source projection is not present, so it is not surprising that source PPs are unacceptable. The source projection, on the other hand, contains the goal projection under it, so both source and goal may be specified (30b). Furthermore, when both source and goal PPs are present, there is a strong preference for the source PP to precede the goal PP (an inversion is possible, but requires a pause and a slightly different intonation which suggests movement conditioned by information structure).

The route projection is even higher, according to Pantcheva (2011) and contains both source and goal projections, and a possibility to specify both source and goal, and to measure the route in addition.

(32)



The route prefixes involve *pro-*, *pere-*, *do-* and *po-*. The route prefixes *pere-* and *pro-* are special as they do not have corresponding prepositions (though route prepositions do exist in Russian) and they may introduce a direct object referring to the route traversed.

(33) (a) *Mnogie pere-bežali iz odnogo lagerja v drugoj.*

many PERE-ran from one.GEN camp to other.ACC

‘Many fled from one side to the other.’

(b) *Belka pere-bežala dorog-u.*

squirrel PERE-ran road-ACC

‘A squirrel ran across the road’

(c) *Ona pere-bežala v kabinet muža.*

she PERE-ran in office.ACC husband.GEN

‘She ran across into her husband’s office.’

(d) **Ona pere-bežala iz kabineta*

she PERE-ran from office.GEN

(‘She ran across from the office’)¹⁰

¹⁰ Curiously, it is possible to have a goal PP without a source PP, but not the opposite: if there is a source PP there must be a goal PP present as well, and the

The prefix *pro-* may also introduce the beginning and the end of a path, or an argument specifying or measuring the trajectory:

(34) (a) Nikto ne smog pro-bežatj ot odn-ogo konc-a do drugogo.
 noone not could PRO-run from one-GEN end-GEN up.to other.GEN
 ‘Noone managed to run from one end to the other.’

(b) On pro-bežal v svoj kabinet.
 he PRO-ran in his office.ACC
 ‘He ran by into his office.’

(c) Ja pro-exal odnu ostanovku po Arbatu.
 I PRO-rode one bus.stop.ACC along Arbat.DAT
 ‘I went by bus one stop along Arbat street.’

With the prefix *do-* it is also possible to specify goal, both source and goal, or the distance. Additional piece of evidence for classifying it as a route prefix is that it provides information about the length/difficulty of the path in addition to goal: all the examples in texts on Ruscorpora involved some obstacles, such as heat, snow or sickness, which made the path to the goal long or difficult (the context of (35b) involved a snowstorm, and in (35c) the runner was ill).

(35) (a) Iznyvaja ot žary, oni do-breli do lesa
 suffering from heat, they DO-walked up.to forest

source must precede the goal (while for source prefixes, it is perfectly grammatical to have a source alone), suggesting, perhaps that in this case Source is dependent on Goal.

‘Suffering from heat, they walked (slowly, with great difficulty) up to the forest.’

(b) Ona do-šla ot mašiny do podjezda

She DO-walked from car to entrance

‘She walked from the car to the entrance.’

(c) Tem ne menea Sonya rešila do-beža-tj distanciju

it.INSTR not less, Sonya decided DO-run-INF distance

‘Nevertheless, Sonya decided to complete running the distance.’

Thus, the examples above illustrate a tight relationship between the complexity of the prefix with the complexity of the path denoting PP selected by the prefix. If the prefix contains only the Goal projection on top of place, only a goal PP may be added. If the prefix contains both source and goal, both source and goal PPs may be added. If the prefix contains goal, source and route, all three PPs are allowed, as well as a measure of the path length.

The prefix *po-*, at a first glance, might present a problem for this classification, but I show below that its usage with motion verbs is still compatible with my analysis. In spite of its inceptional meaning and some features of superlexical prefixes (incompatibility with secondary imperfectivization, which must be derived by separate mechanisms), the prefix patterns with route prefixes in allowing specification of source and goal, as well as distance. It is possible to specify source without goal, as well as vice versa.

(36) (a) On po-bežal (iz xaty) (v pole)

he PO-ran from house to field

‘He started running from the house to the field.’

(b) Sportsmen *po-bežit* pjatj kilometrov.

sportsman *PO-ran.FUT* five kilometers.

‘The sportsman will run five kilometers.’

All of these are grammatical even without *po-*, i.e. with the imperfective form *bežatj* without the prefix. In that case the PPs appear in the complement of the *proc* projection, which is less selective (as a thematic, as opposed to functional element in terms of Abney, 1987).

The inceptive meaning is not always a part of the prefix, e.g. (36b) does not mean that the sportsman will *start* to run, it simply means that he will run, with completion implied.

The prefix, however, does not necessarily entail completion. Compare (37a), where the speaker did not get to the destination due to illness, and thus the verb refers to the beginning of walking, and (37b), where the speaker clearly arrived to the point of 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.

(37) (a) Včera *po-šla* na lekciju; mne *po* doroge stalo *ploxo*.

Yesterday *PO-went* on class *me-DAT* on.the way became 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 (38a) stayed home, and never even started walking, while in (38b) 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.

(38) (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’

Thus we see that neither the inception nor completion of the activity are a crucial part of the meaning of the prefix *po-* here. This is consistent with it being used as a lexical prefix. As a lexical prefix, it does involve a full path with a source, goal and duration, each of which may be specified, and the verb is always telic. Its lexical entry is the least specific, allowing the most freedom, and the largest variety of meanings depending on the structure where it is inserted.

The table below summarizes the classification of the lexical prefixes and what may be modified.

	prefix	goal	source	route
--- +++	za	yes (29a)	*(29b)	*
+++ ---	ot	yes (30b)	yes (30b)	*
+++ ---	s	yes (30c)	yes (30c)	*
--- +++ ---	pro	yes (34b)	yes (34a)	yes (34c)
--- +++ ---	pere	yes (33c)	yes (33a)	yes (33b)
--- +++ ---	do	yes (35a)	yes (35b)	yes (35c)
--- +++ ---	po	yes (36a)	yes (36a)	yes (36b)

Table 3

Compatibility of Lexical Prefixes with PPs

4.2 Superlexical Prefixes

On the superlexical level, the starting point, the endpoint and the duration of an event may be modified by PPs or adverbs, parallel to the source, goal and route at the lexical level. On the spatial level the lowest projection, goal ([goal [place]]), denotes a punctual transition from not being in a place to being there, i.e. minus to plus transition. On the temporal level, the shape of the lowest projection is parallel ([inception [aspect [vp...]]]), but the transition is from not being involved in an activity, to starting the activity, i.e. inception. The goal prefix *za-* thus can denote inception when it appears in this position. The inception point can be modified by punctual adverbs only, e.g.:

(39) (a) **Vdrug** on za-begal po komnate.

suddenly he ZA-ran^{non-dir} along room

‘**Suddenly**, he started running around the room.’

(b) **V 6 utra** vse vstali, za-begali, za-sobiralisj...

in 6 morning all woke.up, ZA-ran^{non-dir}, ZA-get.ready

‘**At six in the morning**, everyone woke up, started to pack...’

Thus, both goal and inception position allow only one transition denoting adverb or PP. Since inception involves only one projection, no other types of modification are available.

With completion prefixes, the point of completion may be modified with ‘in an hour’ phrases¹¹ or with phrases specifying a single point in time, rather than a period of time. Duration may not be measured, as the duration projection (parallel to route projection) is not available.

(40) (a) Trudno vosemj zanjatij ot-plavatj za dve nedeli

hard eight classes OT-swim.inf in two weeks.

‘It’s hard to complete swimming eight classes in two weeks.’

(b) Da tuda za desjatj minut s-bega-tj možno!

but there in ten minutes s-run-INF possible

‘But it is possible to run there and back in ten minutes!’

Though (40a) makes it look like the duration of the activity may be measured, the measure (eight classes) can be interpreted as an argument of the verb because passivization is possible as in (41).

(41) No zlye tetki potrebovali denezku za každyj lišnij ot-plav-annyj čas.

but evil women demanded money for every extra OT-swim-PASS.PART hour.

‘But the evil women demanded money for every extra hour that we swam.’ (lit. ‘every extra swum hour’)

¹¹In an hour modification is actually unusual for verbs with superlexical prefixes. The verbs with *s-* and *ot-* also pattern with transitive verbs in another way. *S-* prefixes verbs have a goal, and *ot-* prefixes verbs have a direct object of the amount covered, which may also be passivized. However, these two prefixes are definitely superlexical by all the tests.

Another interesting feature is that if a time is specified with the preposition *do-*, the completion point must be anywhere in the time interval up to the point specified by the PP with *do-*. E.g. in (42) the plan must be completed anytime before (or including) the first of December.

- (42) A nado esche po planu ot-plavatj do pervogo dekabrja.
 and necessary also according plan OT-swim.INF do first December
 ‘And it is also necessary, according to the plan, to finish swimming by
 December first.’

This is contrasted with the behavior of the duration prefixes (--- +++ ---), where (if such a phrase is possible) the only available interpretation is where the activity lasts exactly up to the point specified by the *do-* PP, as shown in the next section. Similarly, with lexical source prefixes, a goal PP with the preposition *k* ‘towards’ does not imply reaching the goal, but just the direction, while with route prepositions the same PP implies approaching the goal closely enough, if not reaching the goal, not just the direction of movement.

Thus, both inception and completion allow only one transition point to be modified. Unlike the lexical prefixes, the more complex completion prefixes (with plus to minus transition on top of minus to plus) do not usually allow two modifiers. The reason probably originates in the syntactic difference: the lexical prefixes are inside the result phrase, at the very bottom of the tree, and the path PPs are the complements, while the superlexical prefixes are above aspect, and the temporal adverbs are the modifiers.

4.3 Duration Prefixes: --- +++ ---

When the prefix specifies the beginning and the end of the activity, it is possible to measure its duration, as below. Note that these verbs do not allow passivization, unlike the verbs with the prefix *ot-* in the last section, so I assume that the measure phrase is an adjunct in this case, rather than an argument.

(43)(a) Pora vy-xod-itj, a Čertko vse esche net, desjatj lišnix minut pere-plaval.

time.to OUT-go-INF but Čertko all yet no, ten extra minutes PERE-swam^{non-dir}

‘It is time to get out, but Čertko is still not here, he swam for ten extra minutes’

(b) Čertko pro-plaval dva časa.

Čertko PRO-swam two hours

‘Čertko swam for two hours’

(c) Čertko po-plaval desjatj minut.

Čertko PO-swam ten minutes

‘Čertko swam (briefly) for ten minutes’

(d) Čertko do-plaval dva časa.

Čertko do-swam two hours

‘Čertko completed swimming the two hours’

In the previous section it was shown that when the verbs with one transition point are modified with a PP containing the preposition *do* ‘up to’, the activity ends at any point before the time specified by the PP: This contrasts with the behavior of the verbs with duration prefixes. In this case, the activity must last exactly until the

time in the PP, i.e. the *do* phrase refers to the entire duration (from now until completion), rather than the completion point:

(44) (a) Nado do-plava-tj do pervogo dekabnja.

necessary DO-swim-INF up.to first-GEN December.GEN

‘We must keep swimming until December first.’

(b) Deti pro-begali do obeda.

children PRO-ran up.to dinner-GEN

‘The children kept running until dinner.’

This shows that the verbs with the durational prefixes refer to events that last a certain time, so the duration of the activity may extend up to the point specified by the PP. The verbs with the completion prefixes described in the previous section refer to punctual events with no duration to be measured, hence completion of the event has to happen at a point on the interval that extends up to the time specified by the ‘do’ preposition phrase, rather than refer to the event itself extending up to that time.

The example below shows that the verbs with the prefix *do-* may allow the ‘in a year’ type modification. Note, however, that it is only possible in the presence of the goal reached, in very limited contexts.

(45) Za tri goda on do-plaval do kandidat-a v mastera sporta.

in three years he DO-swam up.do candidate-GEN in masters sports

‘In three years he swam enough to be a Candidate for Master of Sports.’

The table below sums up the properties of the superlexical prefixes, resulting in the tripartite classification coinciding with the classification of the lexical prefixes

in the previous section. Goal prefixes turn out to be compatible with suddenly’ and specific time modifiers in their superlexical use; source prefixes are compatible with ‘in an hour’ type modification; and route prefixes allow duration of an activity to be measured when they are superlexical.

	prefix	specific time	‘in an hour’	duration
--- +++	za-	yes (39)	*	*
+++ ---	ot	yes	yes (40a)	*
+++ ---	s	yes	yes (40c)	*
--- +++ ---	pro	?	*	yes (43b)
--- +++ ---	pere	?	*	yes (43a)
--- +++ ---	do	?	? (45)	yes (43d)
--- +++ ---	po	?	*	yes (43c)

Table 4
Compatibility of Superlexical Prefixes with modifiers

Unfortunately, there are no implicational relationships, demonstrated by the lexical prefixes, and the source of the possibility of ‘in an hour’ modification is rather dubious, as it is more connected to the presence of the result state than the number of transitions. However, the tripartite division is present even if we ignore the ‘in an hour’ column. Furthermore, the inception or completion verbs may be modified by phrases denoting exact time, and then the point will coincide either with inception or with completion.

(46) (a) V polnoč vse za-begali.

in midnight all ZA-ran^{non-dir}

‘At midnight everyone started running around.’

(b) V 6 utra ona sbegala v magazin.

at 6 morning she S-ran to store

‘At six in the morning she ran to the store and back.’

(note that here it looks like both beginning and end happened around 6 in the morning)

(c) V 1990 godu IL-76 svoe ot-letal.

In 1990 year IL-76 its OT-fly^{non-dir}

‘In 1990 (the plane) IL-76 has done its flying’

With *pro-* and *po-* it is also possible to modify both beginning and end of an activity in a way parallel to source and goal of path with lexical prefixes:

(47) My po-/ pro-brodili po gorodu s dvux do trex.

we PO- /PRO-wandered around town from two to three

‘We were wandering around the town from two to three.’

Like with lexical prefixes, source is not normally used without the goal (unless the final point is clearly the reference time of the utterance)

However, specifying both beginning and end time is not possible with *pere-* and *do-*. So, perhaps, either a more fine-grained structure is necessary, or there is some non-structural reason that makes the meanings of these prefixes incompatible with such modification. Possibly they involve some presupposition about the initial boundary (if part of the prefix meaning is that the activity took too long, the start of the activity was a while ago), which could be incompatible with stating it explicitly.

5. CONCLUSION

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 a figure in time with respect to the event.

This paper showed the possibility of a single lexical entry, which specifies the kind of transition (e.g. the lexical entry of *do-* contains information about two transitions, as well as the long distance between them that is overcome with difficulty), but the lexical entry is unspecified for the domain of the transition. This information is provided by the syntactic structure: if the prefix is attached VP-internally inside the *res* projection, the transition specified by the lexical entry is a spatial one, while if the same prefix is attached above aspect, the transition cannot refer to path any longer and refers to time.

Shifting the computational burden to the structure makes it possible to preserve one common lexical entry for each prefix. Thus, even if the lexicon is responsible for some of the information, the approach suggested represents a significant progress compared to listing homophones and allows us to bring at least some order to the chaos of Russian prefixes.

APPENDIX: ABBREVIATIONS

1	first person
2	second person
3	third person
Acc	Accusative
Adj	Adjective
Asp	Aspect
DAT	Dative
Dir	Directed
GEN	Genitive
I	Imperfective
INF	Infinitive
Init	Initiation
INS	instrumental
LOC	Locative
N	Neuter
Nondir	non-directed
P	Perfective
PL	Plural
Proc	Process
REF	Reflexive
Res	Result

Sg

Singular

SI

secondary imperfective

REFERENCES

- Abney, Steven Paul. 1987. *The English noun phrase in its sentential aspect*. PhD Dissertation, Massachusetts Institute of Technology,
- Babko-Malaya, Olga. 1999. *Zero Morphology: A study of aspect, argument structure and case*. New Brunswick, New Jersey: Rutgers dissertation.
- Beliakov, Vladimir, and Marguerite Guiraud-Weber. "О некоторых свойствах вторичных глагольных приставок (About Some Features of Secondary Verbal Prefixes)." *Russian Linguistics* 21.2 (1997): 165-175.
- Borer, Hagit. 2005. *In name only (structuring sense, vol. i)*. Oxford: Oxford University Press.
- Borik, Olga. 2006. *Aspect and reference time*. New York: Oxford University Press.
- Dowty, David R. 1979. *Word meaning and Montague grammar: The semantics of verbs and times in generative semantics and in Montague's PTQ*. Dordrecht: Reidel.
- Filip, Hana. 2003. Prefixes and the delimitation of events. *Journal of Slavic Linguistics* 11(1). 55–101.
- Gehrke, Berit. 2008. *Ps in motion. on the semantics and syntax of p elements and motion events*. PhD Dissertation, University of Utrecht.
- Isačenko, Alexander. 1960. *Grammatičeskij stroj ruskogo jazyka. morfologija. Častj vtoraja*. Bratislava: Vydavatelstvo Slovenskej Akadémie vied.
- Janda, Laura A. 2006. Totally normal chaos: The aspectual behavior of Russian motion verbs. In *Festschrift for Michael S. Flier*, Cambridge, MA: Harvard

- Ukrainian Studies. Available at
<http://www.unc.edu/depts/slavdept/lajanda/notesforfliefest.doc>.
- Julien, Marit. 2002. *Syntactic heads and word formation*. New York: Oxford University Press.
- Krifka, Manfred. 1998. The origins of telicity. In Susan Rothstein (ed.), *Events and grammar*, 197–235. Dordrecht: Kluwer.
- Markovskaya, Evguenia. 2006. Goal-source asymmetry and Russian spatial prefixes. In Peter Svenonius & Marina Pantcheva (eds.), *Nordlyd, Tromsø working papers in language & linguistics: 33.1, special issue on adpositions*, 200–219. Tromsø: University of Tromsø. Available at <http://www.ub.uit.no/baser/nordlyd/>.
- Ozhegov, Sergei Ivanovich. 2001. *Tolkovyj slovar' russkogo jazyka*. Moscow: Rossijskaja akademija nauk.
- Pantcheva, Marina. 2007. Bulgarian spatial prefixes and event structure. In Minjeong Son, Monika Bašić, Marina Pantcheva & Peter Svenonius (eds.), *Nordlyd, tromsø working papers on language and linguistics 34.2: Special issue on Space and Scalar structure*, 320–344. Tromsø: University of Tromsø. Available at www.ub.uit.no/munin/nordlyd/.
- Pantcheva, Marina. 2011. *Decomposing path: The nanosyntax of directional expressions*. PhD Dissertation, University of Tromsø.
- Pereltsvaig, Asya. 2006. Small nominals. *Natural Language and Linguistic Theory* 24(2), 433–500.

- Ramchand, Gillian. 2008. *Verb meaning and the lexicon*. Cambridge: Cambridge University Press. Available at <http://ling.auf.net/>.
- Rappaport-Hovav, Malka. 2008. Lexicalized meaning and the internal structure of events. In Susan Rothstein (ed.), *Theoretical and crosslinguistic approaches to the semantics of aspect*, 13–42. Amsterdam: John Benjamins.
- Richardson, Kylie. 2007. *Case and aspect in Slavic*. Oxford: Oxford University Press.
- Romanova, Eugenia. 2004. Superlexical vs. lexical prefixes. In Peter Svenonius (ed.), *Nordlyd, Tromsø working papers on language and linguistics 32.2: Special issue on Slavic prefixes*, 255–278. Tromsø: University of Tromsø. Available at www.ub.uit.no/munin/nordlyd/.
- Romanova, Eugenia. 2007. *Constructing perfectivity in Russian*. PhD Dissertation, University of Tromsø. Available at <http://hdl.handle.net/10037/904>.
- Schoorlemmer, Maaike. 1995. *Participial passive and aspect in Russian*. PhD Dissertation, University of Utrecht.
- Součková, Kateřina. 2004. Measure prefixes in Czech: Cumulative *na-* and delimitative *po-*. MA thesis, University of Tromsø.
- Svenonius, Peter. 2004. Slavic prefixes inside and outside VP. In Peter Svenonius (ed.), *Nordlyd, Tromsø working papers on language and linguistics 32.2: Special issue on Slavic prefixes*, 205–253. Tromsø: University of Tromsø. Available at www.ub.uit.no/munin/nordlyd/.

Švedova, N. 1980. *Russkaja grammatika*. vol. 2. Moscow: Academy of Sciences,
Nauka.

Wunderlich, Dieter. 1991. How do prepositional phrases fit into compositional
syntax and semantics? *Linguistics* 29, 591–621.

Zwarts, Joost. 2005. Prepositional aspect and the algebra of paths. *Linguistics and
Philosophy* 28, 739–779.

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