In and *out* of Places, States, and Activities: Russian Verbal Prefixes and Scales

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Abstract: This paper explains the polysemy of Russian verbal prefixes through their position in the VP. The lexical entry remains constant throughout all the uses of a given prefix, while the structure into which a prefix is inserted varies. I show that the meaning of a prefix is predictable on the basis of the event structure of the verb it attaches to, i.e. on the scale type provided by the verb. Every prefix measures out an event, mapping it onto a scale, which may be spatial, temporal, or a scale of change. I will concentrate on two prefixes: *za-*, which, as I show, denotes transition to the maximum point on a scale, and *ot-*, which refers to leaving the minimum point. The properties of the scale, such as boundedness, gradability, and the availability of a minimum and maximum, determine its compatibility with different prefixes, which makes reference to the different subparts of the scale.

1. Introduction

In Russian, the combination of verbs with prefixes is a phenomenon that is both very productive and restricted by a rather complicated set of rules. The restrictions on verb-prefix combination present a problem for the standard view on c-selection, for example as presented in Adger's (2003) textbook, where the head, i.e., the item that projects, also selects its complement according to the uninterpretable features (e.g., a transitive verb such as "kiss" selects a noun phrase complement).

Let us start with a superficially simple question: what selects what in the prefix–verb pair? The verb is naturally expected to be the head of the VP, and, as the head, it is the verb that selects a complement, according to the definition of headedness. But can we actually find any evidence that it is the verb that selects a prefix? On the contrary, the facts point in the opposite direction.

Most verbs are compatible with a very large number of prefixes. The exception is verbs that form a perfective with only one perfectivizing prefix, where the prefix makes little or no contribution to meaning. Many verbs are also flexible with respect to the position occupied by the prefix, i.e., they are compatible with both lexical and superlexical prefixes. Verbs cannot be meaningfully divided into prefixal vs. non-prefixal classes (similar to transitive vs. intransitive) according to their combinatorics with prefixes, and almost all verbs may appear as an unprefixed imperfective form without any sense of grammatical incompleteness. It may be said that a perfective verb requires a prefix, but perfectivity is in paradigmatic opposition to (prefixless) imperfectivity, so that is not a matter of selection.

Furthermore, there is evidence that the prefix is not the sister of the verb, which makes it even more problematic for a prefix to be selected by the verb. Locality might be a solvable issue, as Svenonius (1994) allows restricted not strictly local selection by head-chains, which would allow a lexical prefix to be selected by an *asp-init-proc-res* chain. However, a superlexical prefix would not be selected by such a chain, as it is above aspect (as discussed in Section 2). Then we would end up in a non-coherent and counter-intuitive scenario where superlexical prefixes select verbs, while verbs select lexical prefixes. Additionally, under a head-chain analysis, it would be very surprising for a verb with a lexical prefix to be able to select different complements than without it.

To sum up, the process of the combination of verbs with prefixes looks nothing like the combination of, for example, a transitive verb with its nominal complement.

Can we then reverse the argument and say that the prefix selects the verb? According to Adger's definition, that would entail the prefix being the head, which would drastically alter the familiar structure of the verb phrase and raise the question of how this prefix phrase is selected and by what. If the prefix phrase is dominated by the higher verbal structure, then this option reverts to the structure of the verb selecting the prefix.

A third possibility, which I will argue is a more appealing option, is that there is something else which both a prefix and a verb interact with, i.e., their co-occurrence arises from a coincidence of their selectional restrictions. I propose that it is not the verb that the prefix interacts with, but rather the scale, lexicalized by the verb or the verbal complement. Since the prefix and the verb are not sisters, they do not need to select each other, but require a scale, and may appear together as long as their requirements do not clash.

The scale selected may be a path with directional motion verbs, or dimensions of the direct object, or a scale of gradual change, or even the development of an activity in time. For example, the directional verb, such as *leztj* "climb," selects a path for a complement, and the prefixes also select a scale:

(1)　(a)　Vor　　za-lez　　na　　čerdak.
　　　　　thief　into-climbed　on　attic
　　　　　"The thief climbed up to the attic."
　　　(b)　Maljčik　ot-skočil　　ot　　kostra.
　　　　　boy　　from-jumped　from　fire
　　　　　"The boy jumped away from the fire."

Different prefixes subcategorize for different scale types, as I show in Section 4, because their denotation makes reference to different subparts of a scale. Thus, the prefix *za-* denotes a transition to the maximal point of the scale, i.e., the place which is the final point of the scale (the attic in [1a]). The prefix *ot-*, on the contrary, refers to a transition out of the minimal point on the scale, or the starting point of the path (e.g., in [1b] "near the fire" is the minimal point on the scale directed away from the fire). *Pro-*, which refers to motion through or thoroughness, takes a gradable scale with both a minimum and maximum, *do-* "up to" takes a gradable scale with a maximum point, while *pere-* "over" needs a scale that provides a reference standard to be crossed.

I will show this process to be a case of c-selection, as it is local, not context-dependent, and the subcategorization features may be formally specified (e.g., +min, +max, +/–gradable scale).

The interaction of the scale with the verb, however, is far more lax and context-dependent (e.g., one needs encyclopedic knowledge to know that the maximum point of drinking may involve drinking the glass empty, getting drunk, or wasting all one's money; each is a possible reference standard on a scale which affects the choice of a prefix). This relationship is non-local. So the laxer requirement of a scale by a verb is s(emantic)-selection, while the stricter and more local selection of the same scale by the prefix is c(ategory)-selection.

While *ot-* implies some non-zero path traveled, *za-* only makes reference to the final point, a transition to the final place or state. For example, in (2a) the girl enters a new state upon being turned into something by the witch, but there is no reference to her previous state (except that it was normal), nor about any lengthy process of enchanting; it could be an instant transition. This contrasts with (2b), where the transition is out of the dirty state, the minimal point on the scale of change, i.e., the initial state of being dirty is neither normal nor desirable, and washing had to take some time, just as in (1b) some non-zero distance had to be traveled.

(2) (a) vedjma   za-koldovala   devushku
          witch   za-enchanted   girl
          "The witch enchanted the girl."
     (b) xozjajka   ot-stirala   skatertj.
          hostess   ot-washed   tablecloth.acc
          "The hostess washed (the dirt off) the tablecloth."
          (implication: the tablecloth was dirty)

Thus, we see that there are several parallels between the shape of the path and the scale, selected by the two prefixes. These same two prefixes can also be used superlexically, scoping over the entire activity, in which case they denote inception (3a) and completion (3b).

(2) (a) Časy   za-xodili.
          clock   za-walked[non-dir]
          "The clock started working."
          There is a minus-to-plus transition event, namely from not working to working.
     (b) Staraja   vedjma   svoe   ot-koldovala.
          old   witch   its.acc   ot-enchanted[non-dir]
          "The old witch is done casting spells (for ever)."
          There is a plus-to-minus transition event, namely the transition from casting spells to never casting a spell again.

The structure is parallel to the combination with a path or scale: a superlexical prefix selects the imperfective aspect phrase as a complement, just as the lexical prefix selects a scale. The imperfective event in that case acts as a scale, as it has initiation, completion, and duration, and its values may be ordered. Then a new event is created to start, end, or measure out a piece of the imperfective event, and that new event is perfective.

I will argue that the process of prefix-scale matching has to be governed by c-selection (subcategorization features) rather than s-selection. The prefix-scale mismatch is similar to c-selection in English, and just as strictly ungrammatical:

(4)   (a)   to depend on/*from subsidies
        (b)   Masha   za-bezhala   domoj
              Masha   za-ran   home
              ungrammatical as superlexical: "*Masha started to run home."
              grammatical as lexical: "Masha ran into the house."

The directional motion verb in (4b) cannot provide an appropriate scale for superlexical temporal modification, so the inception interpretation is strictly ungrammatical, while only a spatial interpretation is available.

Impossible prefix-verb combinations (such as a superlexical prefix with a directional motion verb, or a lexical prefix with a non-directional motion verb) are clearly ungrammatical, rather than semantically odd. However, there are combinations where the oddness does not seem grammatical, but context-dependent, and the judgments become blurred. These are similar to cases of s-selection violation, such as (5b) (Chomsky 1965):

(5)   (a)   Sincerity frightens the boy.
        (b)   #The boy frightens sincerity.
        (c)   #Masha   za-sušila   stakan.
              Masha   za-dried   glass
              "Masha dried up a glass."
        (d)   Masha   za-sušila   cvetok
              Masha   za-dried   flower
              "Masha dried up a flower."

As discussed in Section 4.2, the shape of the scale provided by the verb "to dry" depends on the object, being absolute as a transitive property of things such as glasses and towels, but relative when it is a more or less stable property, e.g., of flowers, crops, or skin. When a glass is the object, as in (5c), the shape of the scale does not match the prefix requirements, but the mismatch depends on the choice of object.

The fact that these combinations are context-dependent suggests that we are dealing with s-selection. However, I will take an alternative route. Under my analysis, all the prefixes subcategorize for scales, and the flexibility and context sensitivity originate entirely from the compatibility of certain verbs with more than one kind of scale. So, it is the selection of a scale by a verb that may, at least sometimes, be s-selection, i.e., semantically governed, but the prefix selection is purely syntactic.
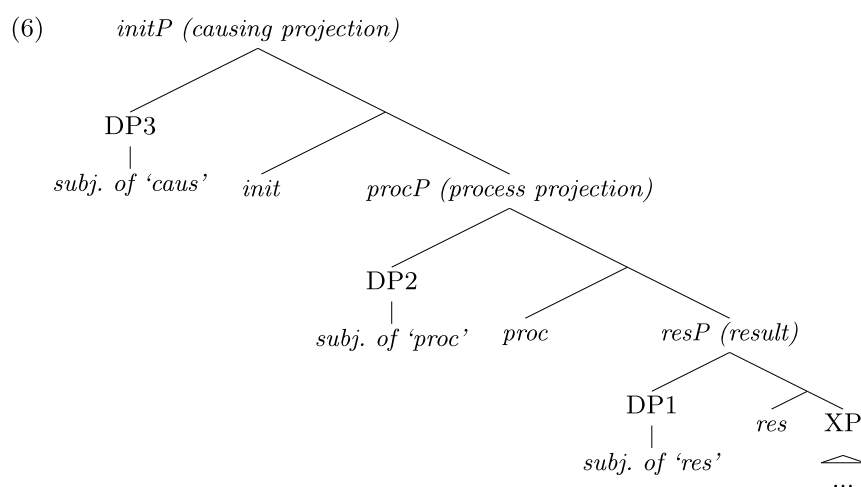
2. Syntactic Framework

The assumption in this paper is that the uses of Russian verbal prefixes fall into two classes, which correspond to the lexical vs. superlexical distinction (Isačenko 1960; Romanova 2004; Svenonius 2004; Babko-Malaya 1999; Schoorlemmer 1995).

Lexical prefixes, as potential argument structure modifiers, are generated in a position inside VP, and may map the event onto a path, the dimensions of the direct object, or a scale of change. Superlexical prefixes modify the event itself and do not change the argument structure or the core meaning of the base verb and are therefore syntactically higher, above the aspect head

(Pereltsvaig 2006). Thus, the whole verbal phrase is the complement of the prefix, and its domain is the temporal dimension. When it appears in the superlexical position *za-* means inception, and *ot-* means completion. Below, I discuss the syntactic distribution of the prefixes in First Phase Syntax.

Ramchand (2008) proposed a tripartite division of eventualities into initiation, process, and result. Such decomposition is governed by the Principle of Event Composition, 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 in (6) (Ramchand 2008, 46).

(6)   *initP (causing projection)*

     DP3
      |
  subj. of 'caus'   *init*   *procP (process projection)*

              DP2
               |
        subj. of 'proc'   *proc*   *resP (result)*

                     DP1   *res*   XP
                      | ⌒
               subj. of 'res'   ...

In this paper I will be most interested in the result projection, which hosts the lexical prefixes, as argued by Romanova (2004), and in the interaction of the aspect head (above init), hosting superlexical prefixes, with its complement, initP.

The generic structure that a prefix may enter looks like (7):

(7)   eventP

                     event   PP

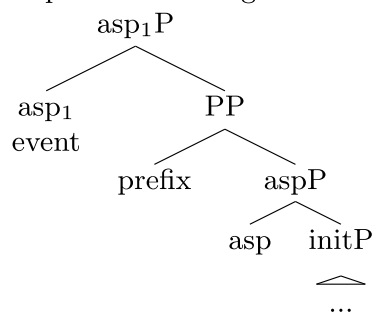   prefix   scale
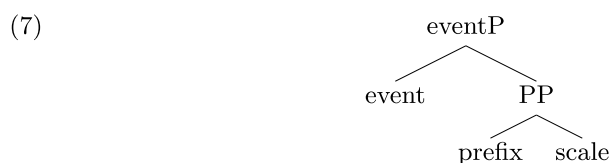
If prepositions and prefixes constitute a single category P (Matushansky 2002; Pantcheva 2007; Svenonius 2004; Gehrke 2008), the transitive properties of a prefix are expected: while a preposition selects a DP for a complement, a prefix may also select any phrase that can be interpreted as a scale. Then an eventive head (res or asp) combines with the PP consisting of a prefix and its scalar complement.

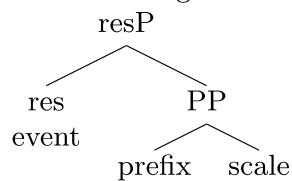The prefix establishes a relationship R between the event and the scale:

(8) $\textit{prefix} = \lambda scale, \lambda e[R(e)(scale)]$

Thus, when a lexical prefix is inserted into the Result projection, it establishes a relationship between the result and the scale introduced by the verb. For example, *za-* in *za-morozitj* "freeze" may mean that the event corresponds to the transition to the maximum state on the freezing scale, while *za-* in *za-jti v dom* "walk into the house" refers to the transition to the final point on the path leading into the house. If the prefix is superlexical, it establishes a relationship between a punctual transition event and an unbounded process, so the superlexical *za-* in *za-prygatj* "start jumping around" takes on an inceptive meaning, and thus the event corresponds to a transition to a state of jumping around.
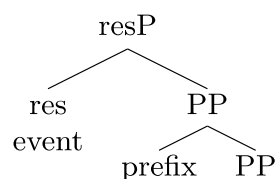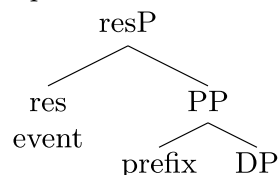
(9)   a.   Superlexical configuration:

$$\begin{array}{c}
\text{asp}_1\text{P} \\
\diagup \diagdown \\
\text{asp}_1 \quad\quad \text{PP} \\
\text{event} \quad \diagup \diagdown \\
\quad\quad \text{prefix} \quad \text{aspP} \\
\quad\quad\quad \diagup \diagdown \\
\quad\quad\quad \text{asp} \quad \text{initP} \\
\quad\quad\quad\quad\quad \triangle \\
\quad\quad\quad\quad\quad \ldots
\end{array}$$

   b.   Lexical configurations. Scale of change:

$$\begin{array}{c}
\text{resP} \\
\diagup \diagdown \\
\text{res} \quad\quad \text{PP} \\
\text{event} \quad \diagup \diagdown \\
\quad\quad \text{prefix} \quad \text{scale}
\end{array}$$

   c.   Directional:

$$\begin{array}{c}
\text{resP} \\
\diagup \diagdown \\
\text{res} \quad\quad \text{PP} \\
\text{event} \quad \diagup \diagdown \\
\quad\quad \text{prefix} \quad \text{PP}
\end{array}$$

   d.   Spatial:

$$\begin{array}{c}
\text{resP} \\
\diagup \diagdown \\
\text{res} \quad\quad \text{PP} \\
\text{event} \quad \diagup \diagdown \\
\quad\quad \text{prefix} \quad \text{DP}
\end{array}$$

3. Prefixes as Measure Phrases

The distribution of prefixes is reminiscent of the distribution of measure phrases in nominal constructions as described by Schwarzschild (2006). In that case, too, each of the two syn-

tactic configurations that is distinguished brings with it a commitment to a particular type of interpretation. In (10), what is measured is determined solely by whether the prepositional phrase or a compound is used, and does not depend on the lexical entries of the lexemes involved. The degree of "monotonic" properties, such as length, is a reflection of amount, while the degree of "non-monotonic" properties, such as temperature, is not. Thus, the contrast below emerges:

(10) (a) a foot of cable
      (b) quarter-inch cable
      (c) seven pounds of potatoes
      (d) seven-pound babies

The measurement in (10a) refers to length, which, as a monotonic property, decreases if we take less cable, while the measurement in (10b) refers to the diameter of the cable, which, as a non-monotonic property, does not change with the amount of cable in question. Thus, it is the structure that allows one to distinguish between the monotonic and non-monotonic properties. If a monotonic property is measured, the partitive structure is used, while for non-monotonic properties an attributive construction is used, which is predictable on the basis of the meaning, as a partitive construction measures out the amount of a substance, while an attributive construction simply describes it. Here is Schwarzschild's (2006, 73) example of monotonicity:

(11)   Sometimes a dimension reflects the part-whole structure of the domain of objects it applies to and sometimes not. If you have a pile of cherries, it has a certain weight. Take some of the cherries away, the weight goes down; add some cherries to the pile and the weight goes up. By contrast, you can add cherries without changing their temperature, their weight per unit, or their color.

The notion of monotonicity is also relevant for events which can be ordered by duration, just as objects can be ordered by weight and by volume. If a given portion has a certain volume, any proper part of that portion has less volume. Similarly, the measure phrase in an expression such as "two hours of walking" characterizes duration. "When we speak of walking, duration is monotonic on the part-whole relation, as required by the partitive. Any proper part of that walking would have had a shorter duration" (Schwarzschild 2006, 74).

Not every event, however, allows such a partitive. The restriction is parallel to the restriction on substances, where only mass or plural substances are compatible with partitives. Similarly to singulars (e.g., *"one pound of pancake"), achievements are not monotonic, so *"two hours of recognizing that face" sounds odd. Achievements have no subparts, and a subpart of an accomplishment (e.g., "draw a circle") is not "less of drawing a circle," as no complete circle is drawn. The scalar structure of events allows the definition of telicity in terms of subintervals (Krifka 1998), where atelic predicates, such as "push a cart," have the subinterval property; that is, whenever they are true at a time interval, then they are true at any part of that interval; this does not hold for telic predicates, such as "eat an apple," as the apple is not fully eaten at any subinterval of eating an apple.

Prefixes act as measure phrases, except they measure out events, not substances. Parallel to the partitive measurement, they are only interpretable if their complement provides a monotonic scale, be it distance, scale of change, or an atelic event developing in time.

The same distinction is used by Součková (2004), who analyzes the prefixes *na-* and *po-* in Czech as measure functions, applied both to homogeneous and quantized predicates. In this view a directed motion verb introduces the path, which acts as the monotonic scale measured by the prefix *po-*, while in the absence of other scales time becomes the domain of the measure function; i.e., one aspect of meaning of *po-* remains constant, and that meaning (e.g., "a little") is the contribution of the conceptual listeme *po-*, which may scope over path, time, or degree, depending on the structure.

Then the interpretation of verbal prefixes as measure functions becomes parallel to the contrast of monotonic vs. non-monotonic properties, illustrated in (10), where the domain of the measure function depends on the structural position where it is introduced.

This looks similar to Kagan's (2013) Scale Hypothesis, according to which a verbal prefix imposes a relation between two degrees on a scale, one of which is associated with the event denoted by the verbal predicate and the other is the standard of comparison. Thus, all the uses of a given prefix involve the same relation between the two degrees, but the uses differ in terms of the scale on which the two degrees are compared (e.g., a path scale, a property scale, a time scale, amount, or the dimensions of the object).

A scale is, by Kagan's definition, monotonic, as she defines it as a set of degrees, i.e., abstract representations of measurement that are ordered along a certain dimension (e.g., height, duration, temperature, etc.)

Thus, to sum up the discussion up to now, a prefix combines with a complement that provides a scale, onto which the event is mapped. The role of the prefix, located between an event head and a scale in this configuration, is to delimit the event by mapping it to a certain subpart of the scale. The scales vary according to the syntactic configuration, as the complement may be a path, a scale lexicalized by the verb, the direct object, or, for superlexical prefixes, the temporal trace of the entire verbal phrase.

4. Scale Typology

In the previous section I described the mechanism for choosing between lexical and superlexical prefixes and showed how the argument structure of the verb determines the position of the prefix. It appears that such an analysis predicts that a single verb should combine either with all lexical prefixes or with all superlexical prefixes. Such a prediction, however, is clearly wrong, as with many verbs some prefixes turn out lexical, and some superlexical, or different prefixes may pick out different scales, resulting in a split interpretation, where, for example, some of the prefixes take on a directional interpretation, while others refer to the lexicalized scale.

Kennedy and McNally (2005) list the following types of scales:

(12) A typology of scale structures
 a) $\langle D_{(0,1)}, R, \Delta \rangle$ (TOTALLY) OPEN SCALE
 b) $\langle D_{[0,1)}, R, \Delta \rangle$ LOWER CLOSED SCALE
 c) $\langle D_{(0,1]}, R, \Delta \rangle$ UPPER CLOSED SCALE
 a) $\langle D_{[0,1]}, R, \Delta \rangle$ (TOTALLY) CLOSED SCALE

The prefixes that may be grouped as denoting an "out-of" transition (*ot-*, *s-*, *vy-*) refer to the minimum value and are thus incompatible with upper closed scale predicates, while the prefixes that denote an "into" transition (*za-*), make reference to the maximum point and are thus incompatible with lower closed scale predicates, which do not provide the relevant value.

While the scale provided by the path is always gradable, and can have both a beginning and an end, the scales lexicalized by verbs of change vary in their shape. In the following subsections I discuss some representative examples of each scale type.

4.1 Za- and Upper Closed Scales

As discussed in the previous section, every prefix introduces a relationship between an event and a scale. Different prefixes make reference to different subparts of the scale in their denotation. Thus, the prefix *za-* introduces a transition into the maximum state of the scale:

(13) $[za-]=\lambda e,\lambda scale[culminate(e)(max[scale])]$

In other words, the prefix *za-* combines with a scale, picks out its maximum point, and maps an event to the point of transition into the state corresponding to the maximal value of the scale. It follows that it makes no difference to the compatibility with the prefix whether the scale also has a minimal point and whether the scale is gradable, as its denotation makes no reference to any of the other subparts of the scale. What matters is whether the scale introduced by the verb provides a salient final state.

"To freeze" is an example of an upper closed scale. The verb entails no information about the initial temperature, except that it was above the melting point, but the maximal point is quite salient: it occurs once the object solidifies. But because no initial point is specified, the prefix *ot-*, which makes reference to the minimum point of the scale, is incompatible with the verb. The scale is gradable, so it is also possible to "almost freeze," and "completely freeze." Thus, *za-morozitj* "za-freeze" is grammatical, while *ot-morozitj* "ot-freeze" is not acceptable in the sense of freezing something. It is grammatical when referring to frostbite, with the frostbitten body parts as an unselected object, in which case it seems directional, referring to the metaphorical path a frozen nose travels off the face once one stops feeling it.

However, "half-freeze" which would make reference to both the minimum and maximum values, is incompatible with the upper closed scale, which does not provide the minimum value required for the calculation of the mid-point between the two ends. The VP *napolovonu zamorozitj* "to half-freeze" is most naturally understood as referring to half of the object being frozen, but not to the halfway point on the scale of change.

The table below illustrates the *za-* prefixation of the verbs related to upper closed scale adjectives (mostly listed by Kennedy and McNally 2005) and the properties of the adjectives:

verb	adjective	slegka ("slightly")	napolovinu ("half")	počti ("almost")
za-polnitj ("fill")	polnyj ("full")	*	v	v
za-gruzitj ("load")	gruzhenyj ("loaded")	*	v	v
za-krytj ("close")	zakrytyj ("closed")	*	v	v
za-/vy-suštj ("dry")	suxoj ("dry")	*	v	v
za-temnitj ("darken")	temnyj ("dark")	*	v	v
za-konchitj ("finish")	gotovyj ("ready")	*	v	v
za-morozitj ("freeze")	morozhenyj ("frozen")	*	?	*

Table 1. *Verbs, adjectives, and scale types*

The measure phrase "slightly" makes reference to the minimum point (there is a small difference between the actual location on the scale and the minimum value), and is thus unavailable with upper closed scales. In this context it is surprising that *napolovinu* is so frequently acceptable. In the case of "to fill" and "to load" the volume of the vessel that is filled provides a scale that has both a zero value (empty) and a maximum value (full), so it is possible to calculate the mid-point between the values, though the zero value (empty) is not a part of the fullness scale. In the case of closing, the path that the door needs to travel from an open to a closed state provides a similar scale, which is contextually available, but not a part of the scale entailed by the adjective. Similarly, half of the object may be dry, ready, or dark, so it is possible to combine it with *napolovinu*. So, the availability of a half measure is not an indication of the shape of the scale; incompatibility with it suggests that a scale is not fully closed. Crucially, as pointed out by Kennedy and McNally (2005), whenever a measure phrase referring to incompleteness, such as half or partially, is added, the entailment is negation:

(14) "the glass is half full" → "the glass is not full"

If comparison is involved, the entailment is also negative:

(15) "Your sleeping bag is drier than mine" → "mine is wet"

Thus, the verbs in the table above are derived from absolute adjectives, according to the tests in Kennedy and McNally (2005).

This does not mean that *za-* is totally incompatible with relative adjectives that require a minimal value on the scale (e.g., wet, dirty) to be true. The relative adjectives, according to Kennedy and McNally (2005), entail that the standard corresponds to the lower endpoint, thus *half/partially adj* entails that *x is adj*:

(16) (a) "the table is partially wet" → "the table is wet"
     (b) "the floor is wetter than the countertop" → "the floor is wet"

Grjaznyj "dirty" and *mokryj* "wet" are, unlike the adjectives in the table above, compatible with *slegka* "slightly," and are less readily compatible with "half" and "almost," in which case the measure phrase can measure the object. However, even though the adjective provides only the lower endpoint of the scale, the object can easily provide the missing maximal value. Thus *za-močitj* and *za-pačkatj* can refer to making something completely wet or dirty, as opposed to *na-močitj* "on-wet" and *is-pačkatj* "out-dirty."

4.2 *Ot-* and Lower Closed Scale

As we saw in the previous section, *za-* only needs a maximum point, making no reference to the other subparts of the scale. *Ot-* is similar in that it needs only one end of the scale, but it is the lower end in this case.

(17) $[ot-]=\lambda e,\lambda scale[culminate(e)(\neq min[scale])]$

Ot- also imposes an additional requirement that the scale length is non-zero and gradable (cf. the shape of the path directed away from the ground). It also makes a further lexical restriction, that the transition is happening away from an undesirable state, and is often modified with positive adverbs such as "properly" and "well." This additional restriction makes it incompatible with such verbs as "make dirty," "rot," "go bad," "rust," etc. which provide a formally appropriate scale. *Za-*, on the contrary, contains no information on the speaker's evaluation of the event.

It is possible for verbs that are very close in meaning to take the opposite prefixes, e.g.:

(18) *za-žaritj* "za-fry" vs. *ot-varitj* "ot-boil"
 into fried state vs. **from** raw state

The reason for the difference is that "frying" implies some definite final state, but entails no requirement that the food is raw to start out with. The verb *ot-varitj*, on the other hand, entails that the initial state is raw. (It is also possible to use the prefix *s-* to remove the focus from the initial state and the process, which is more neutral. *S-* is also a source prefix.) *Slegka varenyj* "slightly boiled" implies that something is boiled, as opposed to absolute adjectives such as full or empty.

The verb *ot-krytj* "to open" takes the prefix *ot-*, and the adjective "open" displays all the properties of an adjective, the standard of comparison of which corresponds to the lower endpoint:

(19) (a) "The door is half open" → "the door is open"
 (b) Dverj slegka otkryta
 door slightly open
 "The door is slightly open" → "the door is open"

4.3 Cleaning Verbs

Thus, one class of verbs that often occur with *ot-* is verbs where the standard corresponds to the minimum, which frequently have a sense of gradually revealing something hidden, such as *ot-voritj* "open," *ot-kopatj* "dig out," *ot-tajatj* "melt," *oto-gretj* "make warm," *ot-mytj* "wash,"

ot-čistitj "clean," *ot-stiratj* "wash," and *ot-teretj* "scrub clean"). Such verbs as "clean" and "wash" also have a sense of gradually revealing something, i.e., revealing the surface under the dirt, and in that sense the preference for *ot-* is not too surprising. However, the adjective "clean" is an absolute maximum adjective, i.e., "clean" holds true of the object only when the maximum degree of cleanness, i.e., a complete lack of dirt, is attained. Then we might expect verbs with such a scale to take only the *za-* prefix. In fact, most cleaning verbs are compatible with both *za-* and *ot-*, depending on which end of the scale we focus on. If the verb refers to gradually cleaning something very dirty, *ot-* is used, while *za-* is possible in the case of a rapid cleaning without any implication of how dirty the initial state is and how long the cleaning process took.

While the adjective "clean" behaves like a maximum absolute adjective, it is possible that the scale lexicalized by the verb is different from the scale of the adjective, with both ends closed. Actually, when we are talking of cleaning something, the presence of dirt throughout the whole process until the very end is presupposed. Crucially, a non-zero scale duration is also presupposed, i.e., *ot-mytj* "clean off" refers to a cleaning process of some duration leading to the **gradual** removal of dirt. *Za-stiratj* "za-wash" is also a possible verb, but it denotes a very quick washing, rather than a gradual one, and does not imply that the initial state was completely dirty, unlike *ot-stiratj*. The context is usually washing off a small spot in a hurry, as in (20b):

(20) (a) Xozjajka   ot-stirala   skatertj,   #xotja   ona byla i   tak   čistaja.
        hostess   ot-washed   tablecloth   though   it   was   and   so   clean
        "The hostess washed the tablecloth clean, # though it was clean anyway."

(b) Ničego,   za-stira-em,   za   čas   vy-soxn-et.
      all right   za-wash-fut.1pl   in   hour   vy-dry-fut.3sg
      "It's all right, we'll (quickly) wash it, and it will be dry in an hour."
      [Pelevin, Zhiznj nasekomyx][1]

Thus, there is a clear implication about the initial state as possessing at least a minimal amount of dirt, and also a clear implication of the end state, namely a complete lack of dirt, and a gradual change in between.

The adjective *čistyj* "clean" can sometimes be used as a relative adjective: [2]

(21) (a) Etot   otelj   očenj   čistyj.
        this   hotel   very   clean
        "This hotel is very clean."

(b) Slishkom   chistyj   dom   opasen
      too   clean   house   dangerous
      "An overly clean house is dangerous."[2]

While cleanness can have an absolute value, i.e., sterility, completely lacking dirt, in practice washing activity does not ever reach this point; it is always possible to wash more (as opposed to

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drying, where once one dries something, one cannot dry it further). So the actual goal of washing and its synonyms is for the object to leave a state of being dirty, rather than to enter a state of absolute cleanness.

Ot- is incompatible with a "make dirty" verb, because this prefix posits two requirements on the initial state: it corresponds to the lower end of the scale, and this state is undesirable. Since the clean state is not normally seen as undesirable, *ot-* is not acceptable in such a context, and clean is not as strict or as well defined as dirty.

Note the contrast between *za-grjaznitj* "za-make.dirty" and *is-pačkatj* "out-make.dirty," where the first refers to reaching some saturation point, while the second refers to leaving a clean state (*iz* denotes a punctual "out of" transition).

4.4 "To Dry" and Scale Variation

The verb *za-sušitj* "to dry" is an interesting verb in its polysemy, where we can clearly see how different objects introduce different scales. As Kennedy and McNally (2005) point out, the adjective *dry* provides a particularly clear illustration of the contrast between absolute and relative adjectives, as it has both uses. When *dry* is used to describe a (more or less) permanent, stable property such as the average degree of moisture in the atmosphere, or on the skin, it has a relative interpretation. Then it can be modified with *very*, the comparative in (a)] allows for the possibility that both of the objects being compared are dry, and the negation in (b) does not generate a positive implication of the antonym *wet*.

(22) (a) This region of the country is drier than that one (though both are dry).
    (b) This region of the country is not dry (but it is not wet either).
    (c) This region of the country is very dry. (Kennedy and McNally 2005, 371)

If, however, *dry* is used to describe a transient property such as the amount of moisture on a surface, it has an absolute interpretation, as shown by the fact that the comparative in (a) implicates that the plates are not dry, and that the negation in (b) implicates that the glasses are wet, as illustrated by the contradictory continuations.

(23) (a) The glasses are drier than the plates (#though both are dry).
    (b) The glasses are not dry (#but they are not wet either).
    (c) ?? The glasses are very dry.

The adjective *suxoj* "dry" behaves in exactly the same way in Russian. This contrast is preserved in the choice of the prefix for the related verb: *za-sušitj* "to dry" is compatible with the prefix *za-* denoting a transition to a new condition mostly if we are talking about plants or food, where the quality is not absolute. Then it is compatible with any degree modifier, but all of them imply that the result has not occurred (so one can discuss ways of resurrecting a flower which is not completely dry; such examples come mostly from flower-tending forums).

(24) (a) Masha   slegka   za-sušila   cvetok.
          Masha   slightly   za-dried   flower
          "Masha slightly dried the flower."
    (b) Masha   počti   za-sušila   cvetok.
          Masha   almost   za-dried   flower
          "Masha almost dried the flower."
    (c) Masha   napolovinu   za-sušila   cvetok.
          Masha   half   za-dried   flower
          "Masha half dried the flower."
    (d) Masha   poka   ne   za-sušila   cvetok.
          Masha   so.far   not   za-dried   flower
          "Masha has not dried the flower so far (but it is getting dry)."

However, if we put the verb in a context where dryness must be absolute, such as drying glasses, the verb becomes incompatible with the prefix *za*. The prefix *vy-* "out of" is used, which refers to a transition directed out of the source location (e.g., leave the room), as opposed to *ot-* "away from" which refers to an unbounded path directed away from the ground.

(25) *za-sušitj   polotence
      za-dry   towel

Slegka vy-sušitj "slightly dry" and its synonym *podsushitj* are found abundantly in connection with hair and leaves, i.e., organic things that favor a relative interpretation of the adjective "dry." *Počti suxoj* (almost dry) is compatible with glasses and towels as well.

     Thus "dry" lexicalized a complex scale, which has a minimum point (wet), actualized in absolute use with glasses and towels, a maximum point (a complete lack of moisture), and degrees of dryness in between for relative uses (e.g., with plants, skin, and bread), and the choice of both prefixes and modifiers depends on which subpart of this scale is contextually relevant; i.e., in *počti vy-sušitj volosy* "almost dry the hair" the prefix refers to the absolute minimum of the scale, while the modifier makes the value on the scale less than minimal, i.e., negative, meaning that the hair is not dry, just as it is grammatical to compare the dryness of the glasses in (23c), while it necessarily follows from such a comparison that the glasses are not dry.

     Not only is the presence of the minimum value relevant, but also the attitude towards it of the speaker. So, to make wet is compatible with *ot-* only in the context where the object leaves some undesirable state by means of the process (e.g., *ot-močitj rybu* "to soak fish," where the fish leaves its salty inedible state). The other bound is missing in this context; the goal is not making the fish thoroughly wet, but making it less salty.

     Thus, it appears that it is not only the structure of the scale that determines the choice of the prefix (which is often too flexible to make a determined choice), but what subpart of the available structure is contextually relevant. Additionally, the direct object can provide a bounded scale, i.e., if we are talking about drying hair, each individual hair is either dry or wet, but we may refer to parts of the volume of the hair, i.e., I almost dried my hair if most of the individual hairs are dry, while I slightly dried my hair if some parts of my hair are dry.

Ot-sushitj "ot-dry" is ruled out because either the scale is bounded (if we are using the absolute meaning) or there is no definite minimal value (the plant was not wet at the beginning of the drying process).

This contrasts with *ot-žatj* (to wring clothes after washing them), where the starting point (wet) is clear, but the clothes do not become perfectly dry as a result.

Thus, the scale shape is a more formal subcategorization requirement, the violation of which leads to sharp ungrammaticality (26a), while the negative attitude of the speaker is a semantic requirement (26b):

(26) (a) *ot-morozitj   rybu
            ot-freeze   fish
      (b) lixo   ty   ego   ot-grjaznil!
           cool   you   it   ot-dirty
           "It's cool how you made it dirty."

(26) is actually the only instance of the verb on the internet,[3] in a comment on a model that is intended to look naturally dirty, so the prefix *ot-* is felicitous even with such verbs as "dirty," provided that the clean state is undesirable and much effort was spent to make something sufficiently dirty.

5. Conclusion

In this paper I have shown that the driving force in prefix selection is the scale, lexicalized or selected (semantically) by the verb. Each prefix makes reference to certain subparts of the scale, e.g., its minimal or its maximal point. However, not every scale provides them, so a prefix requiring an initial state, such as *ot-*, is incompatible with an upper closed scale, while a prefix requiring the maximal point, such as *za-*, is incompatible with a lower closed scale. The prefixes impose further requirements on the gradability of the scale, so *ot-* makes reference to the subparts of the scale, as it denotes a gradual change, while *za-* makes no such reference, denoting an instantaneous transition. Further semantic content, such as a negative attitude towards the initial state, may also come into play.

The prefix may find an appropriate scale in a lexicalized scale or in the direct object, or the event may itself provide a scale. The notion of monotonicity, i.e., that a subpart of the object is less of the same object, helps to confine the superlexical prefixation to atelic events. Only an event, a subinterval of which is less of the same event, i.e., an atelic event, may provide a scale measurable by a prefix.

Thus, each syntactic configuration brings with it a distinct and predictable interpretation for a prefix inserted into it.

Works Cited

Adger, David. 2003. *Core Syntax: A Minimalist Approach*. Oxford: Oxford University Press.

Babko-Malaya, Olga. 1999. "Zero Morphology: A Study of Aspect, Argument Structure and Case." PhD diss., Rutgers, New Brunswick, New Jersey.

Chomsky, Noam. 1965. *Aspects of the Theory of Syntax*. Cambridge, MA.: MIT Press.

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3   http://toyster.ru/forum/showthread.php? t=71&page=55.

Gehrke, Berit. 2008. "Ps in Motion: On the Semantics and Syntax of P Elements and Motion Events." PhD diss., University of Utrecht.

Isačenko, Alexander. 1960. *Grammatičeskij stroj russkogo jazyka. morfologija* 3. Bratislava: Vydavatelstvo Slovenskej Akademie vied.

Kagan, Olga. 2013. "Scalarity in the Domain of Verbal Prefixes." *Natural Language & Linguistic Theory* 31 (2): 483–516.

Kennedy, Christopher and Louise McNally. 2005. "Scale Structure and the Semantic Typology of Gradable Predicates." *Language* 81 (2): 345–381.

Krifka, Manfred. 1998. "The Origins of Telicity." In *Events and Grammar*, edited by Susan Rothstein, 197–235. Dordrecht: Kluwer.

Matushansky, Ora. 2002. "On Formal Identity of Russian Prefixes and Prepositions." In *Phonological Answers (and Their Corresponding Questions)*, Vol. 42 of *MIT Working Papers in Linguistics*, edited by Anikó Csirmaz et al., 217–253. Cambridge, MA.: MITWPL.

Pantcheva, Marina. 2007. "Bulgarian Spatial Prefixes and Event Structure." In *Space, Motion, and Result*, Vol. 34 (2) of *Tromsø University Working Papers on Language and Linguistics*, edited by Minjeong Son, Monika Bašić, Marina Pantcheva and Peter Svenonius, 320–344. Tromsø: University of Tromsø. Available at http://septentrio.uit.no/index.php/nordlyd/article/view/117.

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/.

Romanova, Eugenia. 2004. "Superlexical vs. Lexical Prefixes." In Slavic Prefixes, Vol. 32 (2) of *Tromsø University Working Papers on Language and Linguistics*, edited by Peter Svenonius, 255–278. Tromsø: University of Tromsø. Available at http://septentrio.uit.no/index.php/nordlyd/article/view/69 /.

Schoorlemmer, Maaike. 1995. "Participial Passive and Aspect in Russian." PhD diss., University of Utrecht.

Schwarzschild, Roger. 2006. "The Role of Dimensions in the Syntax of Noun Phrases." *Syntax* 9 (1): 67–110.

Součková, Kateřina. 2004. *Measure Prefixes in Czech: Cumulative* na- *and Delimitative* po-. Master's thesis, University of Tromsø.

Svenonius, Peter. 1994. "C-selection as Feature-checking." *Studia Linguistica* 48 (2): 133–155.

Svenonius, Peter. 2004. "Slavic Prefixes inside and outside VP." In Slavic Prefixes, Vol. 32 (2) of *Tromsø University Working Papers on Language and Linguistics*, edited by Peter Svenonius, 205–253. Tromsø: University of Tromsø. Available at http://septentrio.uit.no/index.php/nordlyd/article/view/68.

Corpus

Russian National Corpus. Available online at http://ruscorpora.ru.