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THE COMPOSITIONALITY OF MOTION VERBS IN RUSSIAN

I discuss the aspectual distinction manifested in Russian unprefixed imperfective verbs of motion that encode the manner of motion to the exclusion of path: *idti* vs. *xodit'*, *exat'* vs. *ezdit'*, etc. In such pairs, for a given manner of motion, a verb that can have both a telic and an atelic reading is paired with an atelic verb. The telic/atelic verb denotes one instance of a motion in a single direction or with no specified direction, whereas the atelic verb can denote either a motion in an unspecified direction or several directions, or a repeated motion in a single direction – e.g. *bežit*$^{1\text{-}a}$ / *bežit*$^{1\text{-}t}$ (imperfective telic/atelic) vs. *begat'*$^{1\text{-}a}$ (imperfective atelic). Building on the classification of perfectives in Janda 2007 and the analysis of telicity and quantificational morphology in Filip 1994, 1998, 2003, 2004, and applying the lattice theory in Bach 1986 and Krifka 1987 and the formalization of event types in Levin & Rappaport 1995 and Rappaport & Levin 1998, I propose a formal account of the compositionality of motion verbs and of the differences between them and the non-motion verbs in terms of aspect and actionality. Based on the templates in Rappaport & Levin 1998, I propose the following description of the unprefixed motion verbs:

(1a) $[x\ bežit^{1\text{-}a}] = [x\ \text{GO}_{<RUN>}]$ (activity)

(1b) $[x\ bežit^{1\text{-}t}] = [[x\ \text{GO}_{<RUN>}]\ \text{CAUSE}\ [\text{BECOME}\ [x\ \text{PLACE}]]]$ (accomplishment)

(2a) $[x\ begat^{1\text{-}a}{}_1] = [x\ \text{ACT}_{<RUN>}]$ (activity)

(2b) $[x\ begat^{1\text{-}a}{}_2] = [[x\ [ITERUM\ (\text{GO}_{<RUN>})]]\ \text{CAUSE}\ [\text{BECOME}\ [x\ \text{PLACE}]]]$ (iterative activity, cf. (1b)), where *ITERUM* is a covert quantificational operator on events that I define in a lattice framework:

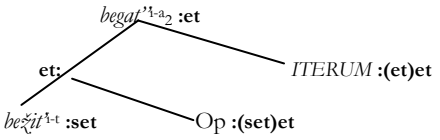
(3) $[\![ITERUM]\!]^{\tau} = \lambda P \lambda x.[\exists n \in \mathbf{N},\ n \geq 2,\ i,j \in \{1,..n\}\ |\ [\exists \tau_i, \tau_j \subset \tau\ |\ [[i \neq j \rightarrow \tau_i \cap \tau_j = \varnothing]\ \&\ [\exists x_i \subset x\ |\ P^{\tau_i}(x_i)]\ \&\ [\exists x_j \subset x\ |\ P^{\tau_j}(x_j)]]]]$, where is τ the evaluation time (interval)

For instance, the proposition expressed in *Anja begaet* $^{i\text{-}a}{}_2$ *v školu (každoe utro)* 'Anja runs to school (every morning)' true during the evaluation time τ if and only if the proposition expressed in *Anja bežit* $^{i\text{-}t}$ *v školu* 'Anja is running to school' is true for at least two disjunct proper subintervals of τ, for a certain path, i.e. Anja $\text{runs}_{\text{iterative}}$ (*begaet*) to school during τ if and only if she $\text{runs}_{\text{non-iterative}}$ (*bežit*) to school at least twice during τ. x_i is the stage of the individual x in τ_i. *ITERUM* operates on verbs, rather than events, in conjunction with an operator that fixes the semantic types, with no implication of iterative or habitual meaning (cf. Filip's 2004 imperfectivizing operator on events *IPF*). If P = *bežit*$^{1\text{-}t}$, then

(4) $[\![begat'^{1\text{-}a}{}_2]\!]^{\tau} = [\![ITERUM]\!]^{\tau}([\![\text{Op}]\!]^{\tau}([\![bežit^{1\text{-}t}]\!]^{\tau}))$, where Op will fix the semantic types:

(5) $[\![\text{Op}]\!]^{\tau} = \lambda P \lambda x.[\exists \tau_i \subset \tau\ |\ P(\tau_i)(x)]$

(6)



(4) can be made relative to a lexically specified manner of motion μ:

(7) $[\![\text{V}^{i\text{-}a}{}_2]\!]^{\tau,\,\mu} = [\![ITERUM]\!]^{\tau}([\![\text{Op}]\!]^{\tau}([\![\text{V}^{i\text{-}t}]\!]^{\tau,\,\mu}))$

The perfectives labeled 'natural perfectives' by Janda 2007 denote the 'natural culmination' (achievement) of the accomplishment denoted by the corresponding imperfective, e.g.:

(8a) $[x\ pisat^{1\text{-}a}] = [x\ \text{ACT}_{<WRITE>}]$ (activity)

(8b) $[x\ pisat^{1\text{-}t}\ y] = [[x\ \text{ACT}_{<WRITE>}]\ \text{CAUSE}\ [\text{BECOME}\ [y\ \text{STATE}_{<WRITTEN>}]]]$ (accomplishment)

(9) $[x\ napisat^{p}\ y] = MAX_E\ (\Sigma[[x\ \text{ACT}_{<WRITE>}]\ \text{CAUSE}\ [\text{BECOME}\ [y\ \text{STATE}_{<WRITTEN>}]]])$ (achievement), where MAX_E is a covert maximalization operator on sets of events, as defined by Filip 2008

Unlike non-motion verbs, whose natural perfectives denote the 'natural culmination' as end of the accomplishment, the natural perfectives of motion verbs denote the beginning of the motion – e.g. perfective *pobežit*^{p}, described in dictionaries and grammars as the natural perfective of *bežit*^{1} in both its telic and atelic readings, means 'set off running'. I propose that perfectives of the *pobežit*^{p} type should be regarded rather as

denoting the inception of the activity denoted by [*x* GO$_{<MANNER>}$] or of the accomplishment denoted by [[*x* GO$_{<MANNER>}$] CAUSE [BECOME [*x* PLACE]]]:

(10a) [*x pobežit*$^{\text{þ}_1}$] = [BECOME [*x* GO$_{<RUN>}$]] (achievement), where [*x* GO$_{<RUN>}$] = [*x bežit*$^{\text{¶-a}}$] (activity)

(10b) [*x pobežit*$^{\text{þ}_2}$] = [BECOME [[*x* GO$_{<RUN>}$] CAUSE [BECOME [*x* PLACE]]]] (achievement), where [[*x* GO$_{<RUN>}$] CAUSE [BECOME [*x* PLACE]]] = [*x bežit*$^{\text{¶-t}}$] (accomplishment)

The goal (end point) of a motion accomplishment (GO) is a 'general event delimiter' (Beavers 2008), construed as external to the motion event, whereas non-motion accomplishments (where ACT ≠ GO) have an incremental theme internal to the event they denote, and MAX_E can apply. Prefixes (such as *po-* in *pobežit*$^{\text{þ}_1}$) are delimiters on events (Filip 2003); accomplishments can be delimited by the 'natural culmination' internal to the event, activities cannot: (9) is the perfective of (8b), not of (8a). *bežit*$^{\text{¶-a}}$ being atelic, it can only be delimited at the inception of the activity it denotes. *bežit*$^{\text{¶-t}}$, though telic, denotes a motion event without including the telos, so it too can only be delimited at the inception of the accomplishment it denotes. (The telos can be included into the accomplishment by the prefix *do-* 'all the way / up to'.) Whereas the template for achievements in Rappaport & Hovav 1998 has the shape [BECOME [*x* STATE/PLACE]], where [*x* STATE/PLACE] is a state, [*x* GO$_{<RUN>}$] in (10a) is an activity, and [[*x* GO$_{<RUN>}$] CAUSE [BECOME [*x* PLACE]]] in (10b) is an accomplishment. The 'natural culmination' expressed by the perfectives of non-motion verbs is a state, as in (9), whereas the one expressed by perfectives of the *pobežit*$^{\text{þ}}$ type is an activity, as in (10a), or an accomplishment, as in (10b). For the ingressives of atelic motion verbs of the type *begat'*$^{\text{¶-a}}$, I propose the following structure, where they are further specified as ingressives of verbs of type *begat'*$^{\text{¶-a}_1}$ only, denoting the inception of the activity of running denoted by *begat'*$^{\text{¶-a}_1}$:

(11) *zabegat*$^{\text{þ}}$ = [BECOME [*x* ACT$_{<RUN>}$]] - in the reading 'start running' (achievement), rather than 'enter running'

Data (examples)

(1a') *bežit*$^{\text{¶-a}}$ (activity)
Anja bežit$^{\text{i-a}}$.
'Anja is running.'

(1b') *bežit*$^{\text{¶-t}}$ (accomplishment)
Anja bežit$^{\text{i-t}}$ *v školu.*
'Anja is running to school.'

(2a') *begat*$^{\text{¶-a}_1}$ (activity)
Anja begaet$^{\text{i-a}_1}$ *v parke.*
'Anja is running in the park.'

(2b') *begat*$^{\text{¶-a}_2}$ (iterative activity)
Anja begaet$^{\text{i-a}_2}$ *v školu (každoe utro).*
'Anja runs to school (every morning).'

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