The Semantics of Motion Verbs in Russian

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ABSTRACT: Within the group of imperfective motion verbs in Russian there exists a further subdivision into determinate and indeterminate verbs. Traditionally the distinction is said to lie in the direction of motion the verbs encode: motion in one direction or in different directions. In this paper I am going to argue that this distinction is not enough. I will claim that determinate verbs encode singular eventualities and indeterminate verbs are pluractional. Thus in the normal case, imperfective verbs are plural predicates which include singular and plural events in their denotations, in the case of motion verbs, imperfective denotations are subdivided into a singular and a pluractional predicate.

1. INTRODUCTION

Motion verbs are a very special verb group in Russian demonstrating peculiarities in aspectual behavior. Unlike other imperfective verbs, the class of imperfective motion verbs divides into 2 subgroups (determinate and indeterminate), which have different aspectual functions as discussed in Isačenko (1960), Kagan (2007a) and others. Traditionally the difference is said to lie in the directionality of the motion they encode: determinate verbs are one-direction motion verbs, and indeterminate verbs are not specified for the direction of their motion (Isačenko

1960). The determinate/indeterminate distinction also exists in Czech and other Slavic languages, which makes the question about their semantics relevant cross-linguistically.

The differences between the verbs in the motion-verb pair is discussed at length in the literature (mostly of Russian origin), however, the discussion usually focuses on a description of the different contexts in which each type of verb can be used, but without trying to characterize the differences in meaning.

The question this paper will address is what semantic differences exist between the two verb groups and how we can account for them semantically. I will claim that determinate verbs denote singular eventualities and indeterminate verbs are pluractional. I will provide evidence from Russian. Czech data from Součková (2011) present additional support for our hypothesis.

In the next section of this paper I will give some background on the aspectual system in Russian. In section (3) I will introduce motion verbs and summarize the literature on how the meanings of the two groups differ. In section (4) I will give some background on pluractionality. In section (5) I will present the evidence in support of the hypothesis that determinate verbs are singular predicates, while indeterminate verbs are pluractional. Section (6) presents conclusions, and open questions.

2. THE ASPECTUAL SYSTEM IN RUSSIAN

Russian distinguishes morphologically between imperfective and perfective forms. Root verbs are almost always imperfective, and although there are some root perfectives (*skazat'* "to say", *kupit'* "to buy", *dat'* "to give", *sest'* "to sit down"), most perfective verbs are derived from imperfective stems by adding at least one prefix.

(1)   a.   *čitat'*[IMPF] "to read" – *pro-čitat'*[PERF] "to read"

Verbs in the perfective aspect denote sets of singular completed events (Filip & Rothstein 2005; Filip 2008), while the imperfective aspect is associated with a number of readings: iterative/habitual, progressive, general factual[1]. Thus (2a), where the verb is imperfective, can have different interpretations: Ivan read a newspaper at least once in the past, he used to read it repeatedly, he was in the process of reading it.

(2b), where the verb is perfective, has only one meaning: Ivan read and finished reading the newspaper.

(2)   a.   ivan čital^{IMPF} gazetu
             ivan read PAST   newspaper
             Ivan read/was reading a newspaper

       b.   ivan **pro**-čital^{PERF} gazetu
             ivan **pro**-read PAST   newspaper
             Ivan read the newspaper

There are several grammatical tests that help to distinguish between imperfective and perfective aspect. In this paper I am going to present only two of them: the **present tense perfectivity test** and the ***čto delal? "what was he doing?"/ čto sdelal? "what did he do?" test.** (The first test is taken from Romanova (2006), and the "What did he do?" test is standard from Russian grammar books).

The *Present tense perfectivity test* relies on the fact that Russian morphology distinguishes between past and non-past forms of the verb. Imperfective non-past morphology is interpreted as semantically present. Perfective non-past morphology is interpreted as indicating the semantic future.

(3)   a.   ivan čitajet^{IMPF} gazetu
             ivan read PRES   newspaper
             Ivan reads/is reading a newspaper

       b.   ivan **pro**-čitajet^{PERF} gazetu
             ivan **pro**-read FUTURE   newspaper
             Ivan will (have) read a newspaper

The verb *pro-čitat'* PERF "to read" in Present tense has a future tense interpretation. This fact unambiguously proves that the verb is perfective.

In Russian the semantic distinction between perfective versus imperfective verbs can also be shown by checking whether the verb answers: *čto delal?* "what was he doing?" which uses the imperfective form of the verb or *čto sdelal?* "what did he do?" which uses the perfective form. If the question is asked in the imperfective, it requires an imperfective verb as an answer, and if it is asked in the perfective,

it requires a perfective verb as an answer. To make this test effective, the question must be asked in the past "čto s/delal" (what was he doing/what did he do?) because asking it in present will lead to the same NON-PAST – FUTURE interpretation that we have in the first test.

(4)   *čto delal?- čital^{IMPF}/*pročital^{PERF}* what was he doing? – he was reading/*he read
       *čto sdelal? – pročital^{PERF}/*čital^{IMPF}* what did he do? – he read/*he was reading

3.   MOTION VERBS

3.1.   *Why Motion Verbs Are Different*

For any imperfective verb in Russian there is typically one root imperfective form associated with all the aspectual meanings. Verbs of manner of motion are special in this respect, since there are two distinct imperfective forms that are often morphologically related, denoting the same kind of activity, but with different aspectual functions (Isačenko 1960; Forsyth 1970). These two forms are usually called determinate and indeterminate, and they include pairs such as *letet'* ^{DET} "to fly" and *letat'* ^{INDET} "to fly". (See the appendix for the full list of pairs).

Traditionally, the two groups of motion verbs are opposed to each other according to the directionality of the motion they encode: determinate verbs are one-direction motion verbs (like *idti* "to walk"), and indeterminate verbs are not specified for the direction of their motion (like *xodit'* "to walk") (Isačenko 1960).

(5)   a.   maša   šla$^{DET\ IMPF}$ po lesu.
             masha walk-PAST in wood
             Masha was walking in the wood.

       b.   maša   xodila$^{INDET\ IMPF}$ po lesu.
             masha walk-PAST   in wood
             Masha used to walk in the wood. / Masha (has) walked in the wood/ Masha was walking around in the wood

Both determinate and indeterminate verbs are indeed imperfective, which we can show using the perfectivity tests mentioned above.

With both determinate and indeterminate verbs non-past morphology is interpreted as semantic present tense.

(6)   a.   ivan bežit^{DET-IMPF}   v magazin za molokom
               ivan run-PRESENT to shop   for milk
               Ivan is running to a shop to buy some milk.

        b.   ivan begayet^{INDET-IMPF}   po magazinam, pokupaya
               ivan run-PRESENT   to shop-PL,   buy-PARTICIPLE
               podarki
               present-PL
               Ivan is running from one shop to another buying presents.

(6a) and (6b) are interpreted as present, there is no shift into the future, which proves that they are imperfective.

Both determinate and indeterminate verbs answer the question **čto delal?** **"what was he doing?"** confirming the previous results that both groups are imperfective:

(7)   a.   ivan bežal^{DET-IMPF}   v magazin, kogda my ego vstretili
               ivan run-PAST   to shop-SG, when we him meet-PAST
               Ivan was running to a shop when we met him

        b.   ivan begal^{INDET IMPF}   po magazinam, kogda my ego
               ivan run-PAST   to shop-PL,   when we him
               vstretili
               meet-PAST
               Ivan was running from one shop to another when we met him

It turns out that we have two groups of motion verbs in which the verbs are imperfective and morphologically related; on the surface, the only semantic difference between them is the directionality of the motion they encode: determinate verbs are associated with the motion in a single direction, while indeterminate verbs are not specified for any direction. However, this raises a problem. If indeterminate verbs are not specified for any direction, it follows that they should be able to express either motion in different directions or in a singular direction. If this is the case, then we would expect there to be contexts in which

determinate and indeterminate verbs can be used interchangeably. In the next section I will explore this problem and summarize the answers to this question given in the existing literature.

3.2. *The Existing View on the Problem of Motion Verbs*

According to Forsyth (1970) **determinate verbs:** i. encode a single event of motion in a single direction; ii. can have a planned future interpretation similar to the English progressive tense; and iii. a sentence with a determinate verb does not entail that the destination (if it is pointed out) is reached. **Indeterminate aspect** can have several readings: motion in multiple directions, iterative, generic. Forsyth concludes that indeterminate verbs cannot be assigned a unified semantics. The speaker simply uses indeterminate verbs whenever determinate verbs are inappropriate.

According to Isačenko (1960), the main semantic criterion according to which the verbs in the pair are opposed to each other is the directionality of the movement. *idti*^{DET IMPF} "to walk" is one-directed (determinate), *xodit'*^{INDET IMPF} "to walk" – non-directed (indeterminate) or not signaling movement in one direction. Indeterminate verbs can express both **one-directed motion**, as in (8) and **motion in different directions**, as in (9):

(8)   on idjet^{DET IMPF} /xodit^{INDET IMPF} v školu čerez   park
        he walk PRESENT   in school through park
        He is walking/walks to school through the park

(9)   on xodit^{INDET IMPF} po   lesu
        he walk PRESENT around forest
        He walks/is walking around in the forest.

In (8) both determinate and indeterminate verbs can be used. However, Isačenko's (1960) analysis does not account for semantic differences between the sentences. If a determinate verb is used, we clearly get an assertion about a singular event of going in a single direction, while an indeterminate verb leads to an interpretation involving multiple events of crossing the park once. In (9), both the progressive and the generic can be associated with the indeterminate verb because in the context,

the walking event in progress involves motion in different directions. The determinate verb cannot be used here. Thus it seems that the determinate and indeterminate forms must have different meanings, since there do not seem to be any contexts in which one can be substituted for the other without a change in interpretation.

More recent attempts to formalize the differences between the two verb groups have tried to be more precise and make predictions about the verbal behavior. Kagan (2007a) is the first to discuss the aspectual differences between determinate and indeterminate verbs in the framework of formal semantics. She argues that though there is a clear aspectual difference between the two groups of verbs (determinate vs indeterminate), pragmatics plays a crucial role in the distribution of aspectual functions. Similar to Isačenko (1960), she argues that determinate verbs encode movement in a single direction; indeterminate verbs encode motion in a single direction and motion in different directions. However, pragmatics blocks the usage of indeterminate verbs when a more restricted form (determinate verbs) can be used. Let us look at Kagan's analysis in detail.

Kagan argues against Forsyth's claim about the impossibility of assigning a unified semantics to indeterminate verbs. She considers iterativity as a candidate for the unifying property of indeterminate verbs. Indeterminate verbs are used in habitual and generic sentences that involve iterativity. Moreover, motion in multiple directions can also be interpreted as a sum or iteration of subevents, "each of which constitutes an event of motion in a single direction" (Kagan 2007a, p.8).

However, Kagan immediately rejects event plurality as a basis for a unified account of indeterminate aspect. She argues that indeterminate verbs can also encode singular events of motion in a single direction and consequently, do not entail iterativity. This is shown in Table 1 taken from Kagan (2007a). She argues that determinate and indeterminate forms divide between them the interpretations usually associated with imperfective aspect.

Interpretations	Determinate (e.g. *idti*)	Indeterminate (e.g. *xodit'*)
single event of motion in a single direction	✓	X
Statement of Fact	X	✓
progressive (single direction)	✓	X
progressive (multiple directions)	X	✓
Iterativity	X	✓
Genericity	X	✓

Table 1.

In practice, indeterminate verbs are never used to express singular events. Kagan explains this puzzle by the interference of pragmatic factors. The central claim is that in fact the indeterminate aspect is the default, and that all the meanings are available for the indeterminate aspect. Determinate aspect encodes only two meanings, a single event of movement in a single direction and the progressive of this form. However, the meanings that are usually encoded by the determinate aspect (a marked member of the aspectual opposition) are pragmatically blocked as interpretations of the indeterminate. The restriction can be derived from the Gricean Maxim of Quantity. She adopts Sauerland's (2003) interpretation of Grice's Maxim of Quantity. Sauerland (2003) uses Heim's (1991) principle *Maximize Presupposition*: Given two competing sentences, use the sentence with the most informative set of presuppositions that is satisfied.

If the speaker uses a less restricted form, then the listener concludes that the usage of a stronger counterpart (more restricted from) is impossible – the truth conditions do not hold.

Determinate verbs encode a singular event of motion in a single direction. They are used by the speaker if she is sure that the event was singular and the motion was in a single direction. Otherwise, she will use an indeterminate verb to avoid providing false information. Thus, the listener can conclude that the speaker chose not to use a determinate verb because she knows that the truth conditions do not hold.

Competition plays an important role in Kagan's analysis. According to her analysis indeterminate verbs do have singular events in their denotation, but they are not used in singular event contexts because of competition with determinate verbs[2]. However, in practice indeterminate verbs do not have a singular event reading even in contexts in which determinate verbs are unavailable. This is the case in (10).

(10)   a. #ivan idet$^{\text{DET IMPF}}$ pod   oknami   s   zakrytymi
              ivan walk PRESENT under windows with closed
              glazami
              eyes
              Ivan walks/is walking under the window with his eyes closed

         b. ivan xodit$^{\text{INDET IMPF}}$ pod oknami s   zakrytymi
              ivan walk PRESENT under windows with closed
              glazami
              eyes
              Ivan walks/is walking under the window with his eyes closed

In (10a) the determinate verb *idti* "to walk" is ungrammatical in combination with a locative preposition. (Why this is the case will be discussed in section 5.3 of this paper). (10b) is perfectly grammatical. However, despite the fact that the determinate verb cannot be used, the verb *xodit'* "to walk" can have only a plural interpretation – to perform multiple walking movements in multiple directions or on multiple occasions. Thus, the competition account does not cover all the cases of determinate/indeterminate verb usage in Russian.

Another problem for Kagan's account is the set of indeterminate verbs as *letat'*$^{\text{INDET IMPF}}$ "to fly", which seem necessarily to denote pluralities of events. This is explicitly argued by Forsyth (1970) who suggests that indeterminate verbs can encode the "there and back" motion. Kagan argues against this point of view and claims that (11) encodes only a singular event of going to France.

(11)   lena uže   letala$^{\text{INDET IMPF}}$ vo Franciju.
        lena already fly PAST   to France
        ≈Lena went to France by plane.

Her claim is that if indeterminate verbs encoded a plural event of going "there and back", then the sentence in (11) under negation would be true if the "there" motion took place and the "back" motion did not. If *letat'*$^{\text{INDET IMPF}}$ denoted sets of plural events of there-and-back motion, then negation ought to deny there being a plural event of that kind. Thus (12) ought to be true if only the movement to Paris took place, but not the return. However, Kagan correctly shows that under negation a sentence like (12) must entail that the "there" motion did not take place either, since (12) cannot be followed by (13).

(12)   lena ne letala$^{\text{INDET IMPF}}$ v Pariž.
        lena not fly PAST   to Paris
        Lena didn't go to Paris by plane.

(13)   lena priletela$^{\text{DET PERF}}$ tuda, a obratno ujexala poezdom.
        Lena went there by plane and came back by train

According to Kagan, if the speaker only went to Paris by plane it would be sufficient for (12) to be false, no matter how she came back, and Kagan suggests that this means that "go and return" must be part of the meaning of the verb.

However, there is a problem with this argument. In general, negating a sentence with an imperfective verb leads to the interpretation that the event did not even start.

Compare the sentences:

(14)   ivan ne stroil$^{\text{IMPF}}$ etot dom
        ivan not build PAST this house
        Ivan did not build this house

This sentence encodes that Ivan did not even start building the house. There is no way for (15) to follow (14), though finishing the house construction is obviously a part of a building-a-house event:

(15)   pavel postroil^PERF pervyj etaž, a   zakončil^PERF dom ivan
         pavel build PAST   first   floor and finish PAST   house ivan
         Pavel built the first floor and Ivan finished the house.

In other words, when negation has scope over an imperfective verb, the
sentence asserts that no part of an event in V took place. But if this is
the case, then we predict that the sentence (12) entails that Lena did
not even start going to Paris, she did not even move in the direction of
Paris. The event of flying INDET to Paris consists of two parts: going
there and leaving. The negation has scope over the whole event and
means that the event did not event start. Obviously then, none of the
parts of the event started either.[3]

Moreover, (12) cannot be falsified by only saying "She went there
(in one direction) by plane". Counter Kagan's argument, I am going to
argue in this paper that it is not the "back" motion which is crucial for
the indeterminate verb meaning but the fact of leaving the destination
point by flying. It is very important whether Lena is still in Paris or not.
Only if she is not in Paris anymore can the indeterminate verb be used:

(16)   a.   po-mojemu,   lena ne letala^INDET IMPF v pariž
              in my opinion lena not fly PAST   to paris
              I think Lena has not flown to Paris

         b.   ne pravda, ona letala^INDET IMPF v pariž v prošlom godu
              not truth   she fly PAST   to paris in last   year
              It is not true; she flew to Paris last year

The sentence (16b) entails that Lena is not in Paris anymore. She went
there for some time and left. She might have come back home or con-
tinued traveling around Europe. What is important is that she is no
longer in Paris. If Lena is still in Paris, it is ungrammatical to use the
indeterminate verb. Thus in normal cases, (17) is infelicitous, since it
is unusual for someone to fly to Paris and leave within 24 hours:

(17)   ne pravda, ona včera   #letala^INDET IMPF v pariž
         not truth   she yesterday fly PAST   to Paris
         It is not true, she flew to Paris yesterday.

If she only performed the "there" motion, the indeterminate verb is
infelicitous in the sentence.

More generally, an indeterminate verb combined with a goal PP al-
ways entails the "there and away" motion.

(18)   natalia (uže)   xodila^INDET IMPF v teatr
         natalia (already) go PAST   to the theatre
         Natalia has been to the theatre already

The fact that the "away" movement is entailed is proved by the inability
to continue the sentence in (18) by (19):

(19)   mozet byt, ona vse ješe tam
         maybe she is still there

(19) shows that Kagan's account based on the maximize presupposition
principle incorrectly predicts the possibility of a singular event reading.
Her analysis should allow use of the indeterminate verb if the speaker
is ignorant as to whether the event was singular. However, in (18)
there is no possibility for a singular event interpretation – there are two
vectors of movement – the motion to the destination point and away
from it. The "away" motion is entailed, it is part of the semantics of
indeterminate verbs.

Some more examples of indeterminate verbs combined with goal
PPs:

(20)   otec vodil^INDET IMPF detej   v zoopark
         father take PAST   children to zoo
         The father took the children to the zoo.

Example (20) entails that the father with children went to the zoo and,
after some time spent there, they all left. It can be the case that either
the doer or the argument of the verb stays in the place stated by the
PP, but someone has to perform the "away" movement. The following
examples further support this.

(21)   on vodil[INDET IMPF] v dom gostej/druzej *kotoryje ostavalis
       he take PAST   to house guests/friends *who   stayed
       navsegda
       forever
       He took home guests/friends *who stayed forever

(22)   ivan nosil[INDET IMPF] počtu/podarki druzjam
       ivan bring PAST   mail/presents friends
       Ivan brought mail/presents to his friends.

(23)   #otec nosil[INDET IMPF] podarki svoim detjam na roždestvo
       father bring PAST   presents his   children on Christmas
       The father brought presents to his children for Christmas

In (21) though the master of the house stays, the guests/friends realize the second part of the meaning – the "away" part. In (22) the doer himself does not stay where he brings the mail or presents, in contrast to (23), where it is natural to understand that the father brings presents home and stays there.

Thus all these examples indicate that the inability of indeterminate verbs to encode a single event of motion in a single direction is a semantic restriction, i.e. part of their meaning, and does not result from pragmatic factors as Kagan suggests.

Further evidence in support of the inability of indeterminate verbs to encode a single event of motion in a single direction is provided by examples of combination with the *for x time* adverbial phrase. In English this adverbial phrase can modify either the duration of an event as in (24a) or the result state, as in (24b).

(24)   a.   I read for two hours.
       b.   I opened the window for two hours.

Motion verbs are activity predicates in Vendler's (1967) classification. All activities can be modified by *for x time*. This is how the duration of an activity is measured. If we want to measure the length of the motion in one direction we would say using a determinate verb:

(25)   ona letala[DET IMPF] v pariž 2 časa
       she fly PAST   to paris for 2 hours
       She was flying to Paris for 2 hours

The modifier *2 časa* expresses how long the journey took.

Sentences containing indeterminate verbs combined with a goal PP cannot be modified by *for x time* measuring the duration of the "there" motion. They can be modified by the phrase *na x time* modifying the result state. The English translation will be the same *for x time*, but *na x time* measures the time spent in the place where the motion was to before the leaving.

(26)   a.   ona letala[INDET IMPF] v pariž #2 časa
          she fly PAST   to Paris for 2 hours
          She has been/went by plane to Paris *for 2 hours.

       b.   ona letala[INDET IMPF] v pariž na 10 dnej
          she fly PAST   to Paris for ten days
          She has been/went by plane to Paris for ten days.

Thus, we conclude tentatively that indeterminate verbs do not encode singular events. They are associated with some sort of plurality, although the plurality may be realized in different ways, including iterativity, movement in multiple directions and there-and-away motion. We will bring further support for this conclusion in section 5.

A further argument against Kagan's hypothesis that indeterminate verbs include singular events in their denotation comes from the Statement of Fact (general factual) usages, for example (27). Kagan argues that only indeterminate verbs can occur in Statement of Fact usages, but in fact determinate verbs can also be used in this way.

(27)   my s ivanom vmeste leteli[DET IMPF] v pariž v prošlom
       we with ivan   together fly PAST   to Paris in last
       godu
       year
       We flew to Paris together with Ivan last year

However, there is an interesting contrast between (27) and the same statement with an indeterminate verb, which supports our claim that indeterminates are inherently plural (example 28). Example (27) encodes a single event of flying to Paris without any reference to the trip back. The sentence with the determinate verb asserts that there was an instantiation of an event of going to Paris by plane together with Ivan,

and that they then came back on different planes, or trains, or buses, and maybe even to different countries. They also could stay in Paris. However, example (28) entails that we flew to Paris together, spent time together and left together.

(28)   my s   ivanom vmeste   letali^INDET IMPF   v pariž v prošlom
         we with ivan   together fly PAST   to paris in last
         godu
         year
         Last year we flew to Paris together with Ivan

(28) entails (27), but not vice versa. So (28) entails that Ivan and I are the subjects of the there-and-away motion.

Kagan suggests that examples like (29) support the idea that indeterminate verbs do not encode the "back" motion. Therefore, these verbs seem to encode singular events. When the indeterminate verb does not have a goal prepositional phrase, it can be followed by "I came back home on foot".

(29)   segodnja ja vodila^INDET IMPF   mašinu
         today   I   drive PAST   car
         I drove a car today.

It is true that sentences like (29) do not have such entailments, but this cannot be used to claim that indeterminate verbs allow singular events in their denotations. The reason why sentences like (29) do not have the "away" entailment is the absence of the prepositional goal phrase. As soon as a goal PP is added to a sentence like (29), the "away" entailment returns. This is shown in (30):

(30)   segondnja ona ezdila^INDET IMPF   na rabotu na mašine
         today   she go PAST   on work   on car
         She drove her car to work today.

Example (30) cannot be followed by the statement: "and she is still there". This indicates that the there-and-away entailment is induced by the PP, and is not part of the inherent meaning of the verb.

Nonetheless, sentences such as (29) do not allow for a single event of motion in a single direction. As we will see in section 5, these sen-

tences encode multiple directions of movement in different ways, for example driving in several directions or several trips.

Thus the data does not support Kagan's claim that indeterminate verbs include single events in their denotations, or that indeterminate verbs denote a superset of the sets denoted by determinates. Instead, I suggest that while determinate verbs denote sets of single events of movement in a single direction, indeterminate verbs are pluractional, denoting sets of plural events, and excluding single events. I will discuss this claim in detail in section 5. Before that, I will give some background on pluractionality.

4.   PLURACTIONALITY

The proposal is that indeterminate verbs are inherently pluractional, and thus they do not include singular events in their denotations. It is not unusual to have pluractionality marked on verb forms, as we will see further in this section. However, pluractionality is usually marked morphologically on verbs as reduplication or affixation. The uniqueness of the motion verbs in Russian in comparison to other pluractional languages is that they divide the singularity/plurality expression function between the two different verbs – the determinate and indeterminate verbs. While determinate/indeterminate verb pairs may look as if they are morphologically or lexically related (*bežat'/begat'* ""to run", *letet'/letat'* "to fly", *gnat'/gonjat'* "to rush"), there is no predictable morphological rule relating the two verbs. Unlike many pluractional verbs, the indeterminate pluractional verb cannot be derived from the singular verb via a productive morphological operation.

In recent years pluractionality has become a frequently addressed phenomenon in linguistics. Even languages that have been traditionally considered non-pluractional (e.g. the Indo-European family) are being reanalyzed in the light of pluractionality. Filip & Carlson (2001) see the Czech prefixes "accumulative" na- and "distributive" po- as markers of pluractionality. Some researchers describe cases in English as pluractional when plurality is overtly expressed in the sentence structure by adverbs like "occasionally", so that the VP refers to multiple repeated events.

An important recent analysis is Součkova (2011). Having analyzed

different aspects of pluractionality and its interrelation with other effects like degree, intensification, detensification, aspect and the terminology used by researchers, Součkova offers her list of characteristic features of pluractionality:

- pluractionality is independent of view-point aspect and (un)boundedness

- degree plays an important role in connection to pluractionality (pluractionality and degree effects often co-occur)

- the term is restricted to the cases where event plurality is signaled directly by the verb form (Součkova 2011, p. 69).

Works done on the topic cross-linguistically did not manage to provide a single universal definition of pluractionality. There are different ways in which plurality can be realized and events can be plural in different ways: there can be multiple iterations of the event as well as multiple participants, or an event can last for longer than is considered to be typical for this kind of activity. Examples will be given further in this section. I will use Lasersohn's (1995) characterization:

"Pluractional markers do not reflect the plurality of a verb's arguments so much as plurality of the verb itself: the verb is understood to represent the occurrence of multiple events" (Lasersohn 1995, p.241). Russian verbs do not have a pluractionality/reduplication marker. However, I am going to argue that in Russian two different stems are used to mark the distinction: a non-pluractional form by determinate verbs, and a pluractional form by indeterminate verbs. I will argue that in case of indeterminate verbs pluractionality is a semantic phenomenon, and the verb stem (without any morphological markers) encodes multiple events.

In different languages pluractionality involves the interaction of different notions: iterativity and habituality (aspect), and degree and durative readings associated with intensification and detensification. On the one hand, the most natural interpretation of pluractionality is iterativity and the term itself is often used interchangeably with the term "event plurality". Iterativity is understood as repetition over an extended period of time as in (31, 32):

(31)   My parents travel to Europe every year.

(32)   They watched that soap opera for years.

However, pluractionality is not equivalent to iterativity. On the one hand, pluractional constraints can be met by components of meaning other than iterativity. On the other hand, pluractionality is only one of several sources from which iterativity originates. Součkova (2011) argues that iterativity can come from different sources: 1. verb pluractionality; 2. iterative Aktionsart (affixes act as overt markers); 3. imperfective aspect – iterativity being one of its basic readings; 4. Adverbial markers. Pluractionality usually combines with other components of meaning like intensification/detensification, durative, distributive or/and degree effects, distribution over participants and locations. If a pluractional verb is used, it entails that either the event consisted of many phases/smaller events - (i.e. intensification), or that the event included multiple attempts but did not lead to any result – (i.e. detensification), or that it lasted longer than usual – (i.e. durativity). The examples of these meanings that can accompany pluractionality will be given in this section.

Chechen is a very interesting pluractional language to look at. Pluractional verbs are formed by a stem vowel alternation. These verbs are associated with three typical meanings: iterative, distributive and durative, i.e. three different ways of satisfying plurality are expressed by the same marker. The durative interpretation is well exemplified by (33). The examples are taken from Součkova (2011).

(33)   beer pxinna minuotiahw c'iizira / *c'euzira   [Chechen]
        baby five   minute   whine.PLL.WP / whine.WP
        The baby whined for five minutes.

The speaker is obliged to use a pluractional verb if the whining lasts more than a minute. In the Chechen language non-pluractional verbs encode instantaneous events; any event that lasts longer is referred to with the help of a pluractional verb. Součkova (2011) cites Wood (2007), who explains that non-pluractional verbs encode a "minimal unit" of action.

Součkova argues that pluractional verbs supply a plural predicate for cardinality degree modifiers. Degree expressions do not create plu-

rality, but verb plurality is necessary to be able to combine with a degree expression. The example is the Czech cardinality degree expression "hodně" which in different contexts can mean "a lot, often, very".

(34)   a.   *jit^DET hodně do kina   [Czech]
             go a lot to cinema

        b.   chodit^INDET hodně do kina
             go   a lot   to cinema
             go to the cinema a lot

Czech, like Russian, distinguishes between determinate and indeterminate verbs. Both forms are imperfective. However, the determinate verb *jit* denotes a single event of going to the cinema, so it is incompatible with degree expressions interpreted as frequency modifiers. In contrast, the indeterminate verb *chodit* unambiguously refers to multiple events and easily combines with *hodně*.

High degree effect (intensification) often accompanies event plurality with pluractionals. The pluractional is used "to refer to many, rather than just plural events" (Součkova 2011, p. 33):

(35)   a.   mutaanee sun   fir-fitoo   [Hausa]
             people   3PL.PF RED-come.out
             many people came out

        b.   taa   mam-maaree shi
             3SG.F.PF RED-slap   him
             She slapped him many times

If a pluractional verb is used, it is implied that the number of sub-events is large. Crucially, the noun does not have a "many" marker. The implication that in (35a) there were many people comes from the pluractional marker on the verb.

Another aspect of plurality is Cusic's (1981) division into event-internal and event-external pluractionality. His analysis supports the idea that plurality can be satisfied in different ways. There are three levels that can be distinguished within the phenomenon of pluractionality: "phases", "events" and "occasions". (Cusic 1981). The plurality

on the level of phases within a single event is event-internal as in *nibble*, *splutter* or *riddle*. If you say "The wall was riddled in a single burst of fire" you mean that a single event of shooting was internally plural consisting of smaller phases – each phase was a bullet making a hole in the wall. As a result of this singular event – shooting once – the wall is covered with holes.

If plurality is on the level of events (event-external), they can distribute either over single occasions as in (36a), which Cusic considers the second level, or over multiple occasions as in (36b).

(36)   a.   The dog bit me several times before I ran away
        b.   The dog bit me every time I went through the yard

There are cases when plurality is present on all three levels as in (37).

(37)   The mouse nibbled the cheese again and again every Thursday

The level of phases (event-internal plurality) is exemplified by "nibble" (make multiple small bites), the next level – the level of events is introduced by the adverbial "nibble again and again". The event is plural consisting of repeated nibbles. Finally, at the occasions level – the plural event of nibbling is repeated every Thursday.

Event-internal plural events are called repetitive, event-external plural events are called repeated.

In this paper I will argue that indeterminate motion verbs are event external pluractionals – they denote pluralities of events repeated on the same or on different occasions.[4]

5.   EVIDENCE IN SUPPORT OF PLURACTIONALITY HYPOTHESIS

I will present three pieces of evidence in support of the hypothesis that indeterminate verbs are pluractional: the ability/inability to combine with a degree modifier of cardinality, the ability/inability to combine with the pluractional prefix *na-*, and the meaning variation in verbal combination with different prepositional phrases.

5.1.   *The Ability/Inability To Combine With Degree Modifiers Of Cardinality*

Součkova (2011) argues that the ability of the verb to combine with a degree expression signals the verb's inborn plurality.

For the Russian data this argument seems to be of great importance. Indeed, indeterminate verbs easily combine with a degree modifier of cardinality *mnogo* "a lot, often" in contrast to determinate verbs that do not.

(38) a. nataša   mnogo xodit^{INDET IMPF}   v teatr/kino
natasha a lot   walk PRESENT to theatre/cinema
Natasha goes to the theatre/cinema a lot

  b. *nataša   mnogo idet^{DET IMPF}   v teatr/kino
natasha a lot   walk PRESENT to theatre/cinema
Natasha goes to the theatre/cinema a lot

(39) a. ivan mnogo letajet^{INDET IMPF} (po rabote)
ivan a lot   fly PRESENT   (on business)
Ivan flies/travels a lot (on business)

  b. *ivan mnogo letit^{DET IMPF}   (po rabote)
ivan a lot   fly PRESENT (on business)
Ivan flies a lot (on business)

This difference between indeterminate and determinate verbs holds not only in habitual sentences, but also in episodic ones. In the context when Ivan is seriously ill and cannot walk more than a few steps, but yesterday he suddenly felt better and he managed to walk around the room for 5 minutes, the sentence (40a) is grammatical, unlike (40b) which is unacceptable:

(40) a. včera   ivan mnogo xodil^{INDET IMPF}
yesterday ivan a lot   walk PAST
Yesterday Ivan walked a lot

  b. #včera   ivan mnogo sel^{DET IMPF}
yesterday ivan a lot   walk PAST
Yesterday Ivan walked a lot

The ability of indeterminate verbs to combine with degree modifiers of cardinality and the inability of determinate verbs to do so signal

the crucial difference between the two groups of verbs. This argument supports both parts of the hypothesis: indeterminate verbs are pluractional, determinate verbs encode singular eventualities.

5.2. *The Ability/Inability To Combine With The Prefix Na- On Its Pluractional Interpretation*

Filip & Carlson (2001) claim that the Czech "accumulative" prefix na- is a pluractional marker and "it measures a plurality of events of the type denoted by the verb to which it is attached" (Filip & Carlson 2001, p.420). In Russian the "accumulative" prefix na- works in the same way. In (41) it applies to a plurality of "walking around the city" events and measures this plurality of events in relation to some standard of comparison introducing the meaning component "enough, a lot".[5]

(41) my segodnja naguljalis'   po   gorodu
we today   na-walk-PAST ourselves around city
We have walked enough/a lot around the city today.

We are going to use the ability of the verb to combine with *na-* on its pluractional interpretation as a positive test for pluractionality. Indeed, indeterminate verbs naturally combine with this prefix and result in a perfective event-internally pluractional predicate. Determinate verbs can only combine with *na-* when it has a different, spatial interpretation, providing support for the second part of the hypothesis: determinate verbs encode sets of singular events.

In (42a) the indeterminate verb *letat'*^{INDET IMPF} "to fly" combines with *na-*. The pilot performed multiple flights, which are "accumulated" by the prefix and treated as a single maximal event of "flying 2000 hours without any accidents". In (42b) *na-* only gives the direction of the motion – "into" for a singular event.

(42) a. pilot naletal^{INDET IMPF} 2000 časov bez   avarij
pilot na-fly-PAST   2000 hours without accidents
The pilot flew 2000 hours without any accidents

  b. pilot naletel^{DET PERF} na prepjatstvije iz-za   ploxoj
pilot na-fly-PAST   on obstacle   because of bad

vidimosti
visibility
The pilot bumped into an obstacle because of bad visibility

This argument together with the previous one provides evidence that indeterminate verbs encode pluralities of events and determinate verbs denote sets of singular events.

The argument that I present in the next section will further support this. Moreover, it will provide evidence that indeterminate verbs do not encode singular events in their denotations.

5.3. *The Patterns Of Combination With Different Prepositions In Russian*

When we combine prepositional phrases with determinate and indeterminate verbs, we can see the contrast between the two verb groups. Indeterminate verbs can never have a singular event interpretation, while determinate verbs are most naturally found in the singular event contexts.

I will now look at 2 groups of prepositions in Russian and show how different prepositions interact with the inborn plurality of indeterminate verbs in a different way. Our classification is based on Zwarts (2005).

Directional (dynamic)	
telic	Vokrug (around), mimo (past), iz (out of), čerez (through), do (up to), ot (away from), s (down from)
telic resultative	V (to), na (to), k (to)
atelic	Za[6] (following, after), k (towards), po napravleniju k (towards, in the direction of), vdol (along)
Locative (static)	Pered (in front of), u /okolo (near), nad[7] (above), v (in, at), na (on), pod[8] (under), meždu (between)

Table 2.

Directional prepositions can be divided into atelic (towards, along)

and telic (past, up to, around).

Both subgroups combine well with determinate verbs encoding a single event of motion in a single direction.

(43)   ivan šel[DET IMPF]   po napravleniju k stadionu
         ivan walk PAST towards   stadium
         Ivan walked towards the stadium

(44)   gid   vez[DET IMPF]   turistov vokrug zooparka
         guide drive PAST tourists around zoo
         The tour guide drove tourists around the zoo

Telic prepositions form grammatical sentences with indeterminate verbs. The telic point marks the end point of the event after which it can be iterated.

(45)   gid   vozil[INDET IMPF]   turistov vokrug zooparka
         guide drive PAST   tourists around zoo
         The tour guide drove tourists around the zoo

In (45) the verb encodes repeated motion around the zoo: multiple circles were made around the zoo.

The combination of indeterminate verbs with atelic prepositions is ungrammatical[9].

(46)   #ivan xodil[INDET IMPF] po napravleniju k stadionu
         ivan walk PAST   towards   stadium
   Ivan walked towards the stadium (on foot)

The telic prepositions that encode only a starting point require a destination to be added to make a grammatical sentence:

(47)   ivan xodil[INDET IMPF] s   raboty #(domoj) čerez   park
         ivan walk PAST   from work home   through park
         Ivan walked home from work through the park

(46) and (47) support the explanation of (45): a telic point is needed to be able to define what counts as a singular event and to be able to iterate this event. In case of atelic prepositions and telic prepositions that encode only the starting point of the event we do not know when an event can count as singular and complete, consequently, it is impossible

to have iterations of this event. As a result, indeterminate verbs are ungrammatical in combination with these prepositions.

Resultative prepositions (like "to" in English) are a special kind of directional telic preposition. They encode both a path and the result state – being at the destination point. In this case it is difficult to get the iteration, and the pluractionality of indeterminate verbs is expressed in a different way. Indeterminate verbs encode a sum of two events – going to the destination and away from it.
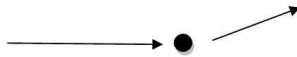
(48)   alexander vodil$^{\text{INDET IMPF}}$ ženu na concert
          alexander take PAST   wife to concert
          Alexander took his wife to a concert

We cannot continue this sentence by "and maybe they are still there".

Determinate verbs in combination with these prepositions encode a single event of motion in a single direction:

(49)   alexander vel$^{\text{DET IMPF}}$ ženu na concert
          alexander take PAST wife to concert
          Alexander took his wife to the concert

In this case we do not know (if it is not specified in the context) whether the subject reached the destination, if he/she did, whether he stayed there or left immediately.

Locative prepositions delimit the area within which events take place (in, on, under)

Locative prepositions in most cases do not combine with determinate verbs, which encode directed motion and displacement, entailing a path.

(50)   #ivan šel$^{\text{DET IMPF}}$ pod oknom s   zakrytymi glazami
          ivan walk PAST   under window with closed   eyes
   Ivan walked/was walking under the window with his eyes closed

It seems to be the case that we cannot have both: a path and a location of the same event. This is supported by example (51) in which the adverbial phrase "in the city center" provides information about the location of the park, but not the location of the walking through the park event as a whole:

(51)   ivan šel$^{\text{DET IMPF}}$ čerez   park *v centre goroda
          ivan walk-PAST through park in centre city
          Ivan walked through the park in the city centre

Indeterminate verbs form grammatical sentences with locative PPs.

The plurality of indeterminate verbs is expressed in multiple chunks of movement in different directions and the locative PP describes the space in which these multiple pieces of movement take place:

(52)   soldat taskal$^{\text{INDET IMPF}}$ meški pod   oknami bolnicy
          soldier carry PAST   bags under windows hospital
          The soldier carried bags under the hospital windows
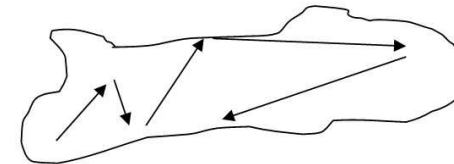
In the progressive reading the activity has been performed continuously and multiple instantiations have taken place.

In a general factual imperfective reading the verb denotes an event taking place (possibly once) in the past. Even if we know that the event of carrying bags/a bag under the window has been instantiated only once, we know as well that the event itself has been "plural" – consisting of multiple movements with bags/a bag in different directions.

6.   CONCLUSION

In this paper I looked at the semantic differences between determinate and indeterminate verbs in Russian. It is traditionally claimed that the distinction lies in the directionality of the motion that the two verb groups encode: determinate verbs are associated with motion in a single direction, while indeterminate verbs are not specified for any direction. In this paper I argue that this distinction is not enough. I claim that indeterminate verbs are pluractional – they encode pluralities of events, while determinate verbs are singular. The combinations of indeterminate verbs with different prepositions show how the pluractionality is expressed in various ways: either in the sum of two events of going to the destination point and leaving it, or in multiple events repeated on the same or on different occasions. Additional support for the pluractionality hypothesis is provided by the inability of determinate verbs to combine with the degree modifier of cardinality *mnogo* "a lot, often" and the prefix *na-*, and in contrast, perfect grammaticality of their combination with indeterminate verbs.

A further difference between determinate and indeterminate verbs shows itself in perfectivization. Determinate verbs follow the general rule and perfectivize when combined with a prefix. Indeterminate verbs become perfective in combination with some prefixes, but remain imperfective in combination with other prefixes. Gepner (2015) suggests that this puzzling behavior can be explained in terms of pluractionality. Assuming that perfective predicates are singular denoting sets of maximal events (following Filip & Rothstein 2005), Gepner (2015) suggests that only pluractional prefixes can map indeterminate verbs onto perfectives. Gepner (2015) suggests that prefixes divide into two types: pluractional prefixes, which denote operations applying to pluralities of events, and "singular" prefixes, which denote operations that apply to single events. While pluractional prefixes are correctly predicted to apply only to indeterminate verbs as shown in section 5.2, "singular" prefixes apply to all verbal predicates. However, non-pluractional prefixes distribute over plural events in the denotation of the indeterminate verb and thus do not allow a singular perfective predicate to be formed. (for details see Gepner (2015)).

Though in depth discussion is beyond the scope of this paper, this suggests that further exploration of indeterminates as pluractional verbs can shed light on the puzzling behavior of indeterminate verbs in perfectivization.

Understanding the semantic differences between determinate and indeterminate verbs can have wider implications for the whole aspectual system in Russian and cross-linguistically. Many people have said that the imperfective/perfective aspectual distinction is parallel to singular/plural contrast in nominal domain. Further subdivision within the imperfective aspect into singular and pluractional predicates can add much to the picture. Moreover, conceptualization of motion in general and how it is reflected in syntax and morphology are interesting issues to look at. We will leave these topics for further research.

Notes

[1] In this reading the predicate denotes an event that took place, came into existence (at least once) without any reference to its completion. It seems to correspond to "durative processual" reading in Mehlig's (2008) classification.

[2] There exist other theories of competition (e.g. Rett (2008) among others). However, the fact that in the context in which determinate verbs are unavailable indeterminate verbs still do not get a singular interpretation shows that competition theories are irrelevant for this discussion.

[3] In the following example Kagan provides a paraphrase in which the events of "there" and "back" motion are expressed explicitly:

(1)   lena ne   letala[INDET IMPF] v Pariž i   obratno.
       lena not   fly PAST   to Paris and back
       Lena didn't go to Paris and back by plane.

Negation seems to work differently in this case. It might be the case that the negation has scope over the conjunction "and". However, this argument is not crucial for showing that

Kagan's account does not explain the motion verbs data and we will leave this problem for future research.

[4]Rothstein (2004) argues that activities denote sums of minimal events, they are event internal pluractionals. However, this is not the kind of pluractionality that is relevant for this paper.

[5]We follow Filip & Rothstein (2005) who claim that perfectivization is closely connected to maximalization operation. Prefixes provide a parameter for picking out maximal events in the denotation of a predicate. Perfectivization can only apply to maximal singular events.

[6]Za "after" is excluded from the discussion as we follow Zwarts (2005) in considering only static source objects. Za- encodes following a moving object.

[7]*Nad* "above" can be combined with a directional determinate verb letet "fly" (it does not combine with most determinate verbs) if the area or an object is big enough to fly a distance above it:

(2)   samolet letel[DET IMPF] nad   polem
        plane   fly PAST   above   field
        The plane flew above the field

(3)   *samolet letel[DET IMPF] nad   avtomobilem
        plane   fly PAST   above car
        The plane flew above the car

[8]*Pod* "under" can be ambiguous between locative and directional – telic. Its ability to express direction becomes salient in combination with prefixes:

(4)   korabl zaplyl[DET PERF] pod   most
        ship   swim PAST   under bridge
        The ship swam under the bridge

[9]*vdol* "along" can combine with indeterminate verbs. The fact that the preposition entails a path allows for multiple movements along this path.

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APPENDIX

Determinate	Indeterminate	Translation
idti	xodit'	walk
bezat'	begat'	run
jexat'	jezdit'	ride, go
plyt'	plavat'	swim
letet'	letat'	fly
polzti	polzat'	crawl
lezt'	lazit'/lazat'	climb
vesti	vodit'	drive, lead
vezti	vozit'	transport
nesti	nosit	carry
nestis'	nosit'sja	run quickly
tascit'	taskat'	drag
katit'	katat'	roll (transitive)
katit'sja	katat'sja	roll (intransitive)
gnat'	gonjat'	rush, career about