

L2 Acquisition of Russian Outer Aspect

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1. Introduction

It is often reported in the Russian pedagogical literature that the Russian aspectual system represents a particular challenge for second language (L2) learners. In this paper, I report the results of an experiment which demonstrate that English native speakers acquiring Russian as a second language can attain native-like competence in the domain of Russian outer aspect. On one hand, these findings serve as counterexamples to the claim that appears in the Russian pedagogical literature. On the other hand, they support Schwartz and Sprouse's (1996) Full Transfer Full Access Hypothesis, which I adopt as my working hypothesis.

Before describing the experiment that I conducted, I will briefly discuss some peculiarities of the Russian aspectual system and present the syntactic analysis of English and Russian outer aspect.

2. The aspectual system of Russian dynamic verbs¹

Russian dynamic verbs come in three morphological forms: imperfective (IMP), perfective (PERF) and secondary imperfective (SI).² Thus, the same verbal root may appear in all of these forms.

Table 1 Morphological types of Russian verbs

Verbal form	Imperfective(IMP)	Perfective(PERF)	Secondary imperfectives(SI)
Order of affixes	root-AGR	preverb-root-AGR	preverb-root- <i>va</i> -AGR
Example	<i>čita-l</i> "read-IMP"	<i>pere-čita-l</i> "reread-PERF"	<i>pere-čit-<i>ī</i>-va-l</i> "reread-SI"

Table 1 contains examples of all three types of Russian verbs. As we can see, the root of the verbs *čital* "read" in its bare form is IMP. But it becomes PERF if we attach the prefix/preverb *pere-* to it, as in *perečital* "reread".³ If, however, we attach both the preverb *pere-* and the SI suffix *-va* to *čital*, we obtain its SI form, as in *perečitīval*.

In order to attain native-like competence of Russian aspect, English speakers must master all three forms of Russian dynamic verbs. This means that they must acquire syntactic structure that each of

¹ As suggested by the title, my study is dedicated to the acquisition of Russian outer aspect. Hence, I have very little to say about verbs which, I believe, do not contain an outer aspect projection, such as states and achievements, or, for that matter, about Russian inner aspect.

² Traditionally, Russian grammarians do not distinguish imperfective verbs from secondary imperfective verbs, referring to them as to imperfectives. Despite the fact that these two verbal forms have similar behavior, they are nevertheless structurally different. To accentuate this structural difference, I will deliberately distinguish IMP verbs from SI verbs.

³ Given that this paper is concerned with outer aspect, the process of Russian verbal prefixation which takes place in the domain of inner aspect is greatly oversimplified here. In reality, this process is very intricate and complex. Thus, in Russian not all verbal prefixes can attach to all verbs but rather each verb selects how many and which among prefixes it can combine with. Often a prefix alters the meaning of the verb it attaches to. We can see an example of such a semantic shift in the case of the prefix *pere-* which, when added to the verb *čitat* "to read", changes the meaning of this verb to "to reread".

these forms has. To establish what exactly L2 learners must do, let us determine what differences exist between the syntactic structures of English and Russian dynamic verbs.

3. Syntactic analysis of aspect

Recent studies in the domain of aspect point to the existence of two types of aspect (Comrie 1976; Dahl 1985; Dowty 1979; Filip 1999; Krifka 1998; Pustejovsky 1991; Tenny 1992, Verkuyl 1993, Travis 1994, Slabakova 2001 among many others). One is inner aspect, which occupies a syntactic position within the little *vP* and is concerned with the telic/atelic distinction. And the other is outer aspect, which occupies a syntactic position above the little *vP* and is concerned with the bounded/unbounded distinction.

Permutation of the inner and outer aspectual projections leaves us with eight possible phrasal structures. Starting with the inner aspect, we can have two types of events: those that contain the inner aspect projection and those that lack it. Similarly for the outer aspect projection: some events contain it and some lack it.

In agreement with the recent findings, I assume that presence of the inner aspect projection makes the verb telic (Borer 2005), while presence of the outer aspect projection makes the verb unbounded (in time).^{4, 5} I also assume that the outer aspect projection can only be found in the verbs containing the little *vP* projection, i.e., in so-called dynamic verbs (Travis 1994, Slabakova 2001).

Following work by Vendler (1967) and Borer (2005), I will refer to telic dynamic verbs (or verbs that contain the inner aspect and *vP* projections) as accomplishments and atelic dynamic verbs (or verbs that lack the inner aspect projection but have the *vP* projection) as activities. Unfortunately, no uniform term exists to describe bounded verbs (or verbs that lack the outer aspect projection) and unbounded verbs (or verbs that contain the outer aspect projection) in the two languages under consideration. To reflect the fact that bounded events lack a morpheme that occupies the outer aspect projection, I will call them simple events. In contrast, unbounded events that have such a morpheme will be referred to as complex events.

Let us have a closer look at all possible phrase structures of English and Russian dynamic verbs, starting with simple events or, to put it another way, events that lack the outer aspect projection.

3.1 Dynamic events that lack the outer aspect projection

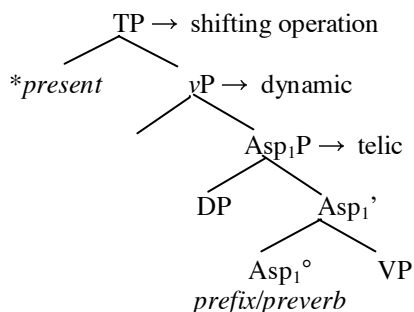
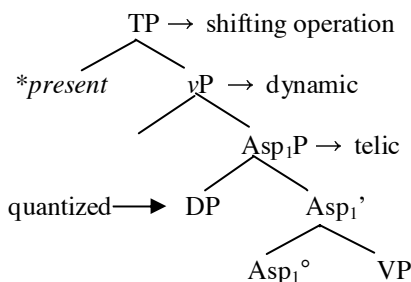
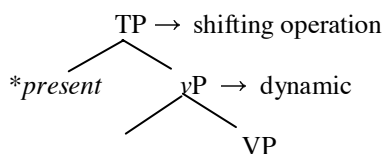
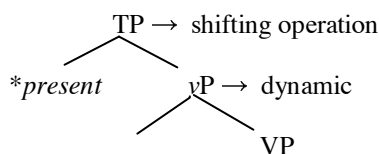
Simple dynamic events may contain or lack the inner aspect projection. In the former case, the events that we obtain are simple accomplishments, while in the latter case they are simple activities. The examples of these events are given in (1) and (2) respectively.

(1) Simple accomplishments:

- | | |
|---|---|
| (a) <u>English:</u> non-progressive accomplishments
e.g., <i>read a/the book</i> | (b) <u>Russian:</u> perfective (PERF) verbs
e.g., <i>perečitat' knigi</i>
“reread-PERF the books” |
|---|---|

⁴ In this paper, I use the term telic in its vague sense. Telic events are events that contain at least one time boundary in their structure. In other words, telic events are events that have either a beginning or end-point, or both. For instance, *read the book* is an event that contains the end-point at which *the book is being read up until the end*. Note that in the case of unbounded telic events (telic events that contain an outer aspect projection), the end-point does not have to be actually reached. So, *reading the book* does not guarantee that the book will be read up until the end.

⁵ It is important to note that although in both English and Russian telicity of dynamic verbs is calculated within the inner aspect projection, the mechanism in which the verb becomes telic is different in these two languages. While in English it is the aspectual status of the internal arguments that plays a crucial role, in that only quantized predicates, as opposed to homogenous ones, make the dynamic verb telic, in Russian it is the presence of the preverb that plays a crucial role, in that dynamic verbs containing a preverb are telic.

(2) Simple activities:(a) English: non-progressive activities
e.g., *read books*(b) Russian: NOT ATTESTED

Traditionally, the forms of English verbs that encode simple events are known as the simple tense forms or non-progressive forms. The example that I use in (1a) and (2a) is that of the verb *to read*, namely, *read*.

In Russian, simple accomplishments are generally encoded by perfective verbs, e.g., *perečitat'* “reread-PERF”.⁶ How about Russian simple activities? At first glance, Russian dynamic imperfective verbs such as *čitat'* “read-IMP”, being morphologically simple, seem to be appropriate candidates for simple activities. However, as we will see shortly, the behavior of these verbs suggests that they do not have the structure in (2b). I take this fact together with the fact that in Russian all other dynamic verbs are morphologically complex and, as such, need extra projections for affix placement that are not available in (2b), as evidence that Russian lacks the structural equivalent of English simple activities.

A thorough examination of simple events reveals their determining characteristics – these events cannot receive the present tense interpretation. This is why English and Russian sentences describing simple events are incompatible with ongoing event adverbials.

- (3) a. *At this moment, Peter reads the books. - non-progressive accomplishments
 b. *At this moment, Peter reads books. - non-progressive activities
 c. *V nastojas'ij moment, Masha pročitael knigi. - perfectives
 At this moment Masha reads-PERF the books
 “At this moment, Masha will read the books.”

Simple events in both English and Russian undergo a shifting operation which repairs an otherwise illegitimate derivation. Although both languages under consideration use a repairing strategy, in English, the shifting is into the habitual and in Russian, it is into the future. Thus, the simple dynamic verbs in the English sentences (4a) and (4b) have a habitual interpretation, while in the Russian sentence (5a) the verb has a future tense interpretation, regardless of the fact that it is not appearing with the future tense morpheme *budet* “will”. In fact, as shown in (5b), perfective verbs cannot be inflected with this morpheme. Needless to say that inflecting simple accomplishments with the future tense marker *will* is possible in English, as there is no risk of obtaining “double” future (cf. 4c).

⁶ The discussion of Russian resultative and semelfactive verbs, which are also accomplishments, is beyond the scope of this paper.

- (4) a. Peter reads the books. - non-progressive accomplishments
 b. Peter reads books. - non-progressive activities
 c. Peter will read the books. - non-progressive accomplishments
- (5) a. Masha pročitaet knigi. - perfectives
 Masha reads-PERF the books
 “Masha will read the books.”
- b. *Masha budet pročitat’ knigi. - perfectives
 Masha will read-PERF the books
 Intended: “Masha will read the books.”
 Literary: “Masha will will read the books.”
- c. *Masha často pročitaet knigi. - perfectives
 Masha often reads-PERF the books
 Intended: “Masha often reads the books.”
 Literary: “Masha will read the books.”

Given the differences between the English and Russian shifting operation, it comes as no surprise that Russian perfective verbs cannot receive a habitual interpretation, even in the scope of a habitual adverbial (cf. 5c). Since there is no shifting into the habitual in Russian, nothing can license such an interpretation.

Note that the behavior of Russian dynamic imperfective verbs is opposite to that of their perfective counterparts. Thus, despite their morphological simplicity, Russian imperfective dynamic verbs are primarily used to describe ongoing events (cf. 6a). The examples in (6b) and (6c) demonstrate that, unlike perfective verbs, these verbs cannot receive a future tense interpretation even in the scope of a future adverbial, unless they appear with the future tense morpheme *budet* “will”:

- (6) a. V nastojas’ij moment Masha čitaet knigi. - imperfectives
 At this moment Masha reads-IMP the books
 “At this moment, Masha is reading the books.”
- b. *Čerez 5 minut Masha čitaet knigi. - imperfectives
 In 5 minutes Masha reads-IMP the books
 “In 5 minutes, Masha is reading the books.”
- c. Čerez 5 minut Masha budet čitat’ knigi. - imperfectives
 In 5 minutes Masha will read-IMP the books
 “In 5 minutes, Masha will be reading the books.”

The behavior of Russian imperfective dynamic verbs coincides with that of English progressive activities, whose behavior we will see in the next subsection. This suggests that Russian imperfective dynamic verbs, just like English progressive verbs, are morphologically complex and contain a Ø-morpheme. We will turn to the details of their structure in the following subsection which is dedicated to complex events. Before discussing these events, however, let me sum up the differences between English and Russian simple verbs.

First and foremost, unlike English, Russian lacks simple activity verbs. In other words, Russian lacks morphologically simple verbs that are incompatible with the present tense, can undergo a shifting operation into the future, and cannot appear with the future tense morpheme *budet* “will”. Second, the shifting operation, although fulfilling the same objective (that of repairing an illegitimate structure), is different in the two languages. While in English it is into the habitual, in Russian it is into the future. The consequence of this difference is that Russian simple accomplishments, i.e., perfective verbs, unlike English simple accomplishments, are incompatible with habitual reading as well as with the future tense marker *budet* “will”.

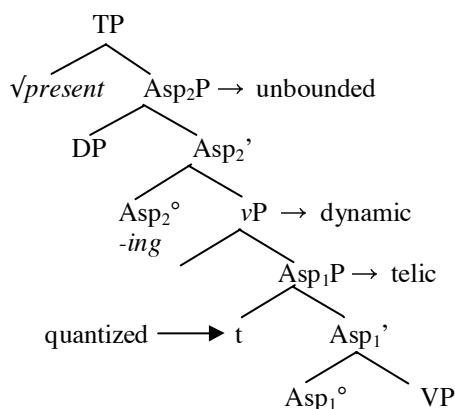
In order to properly acquire the Russian aspectual system, English native speakers acquiring Russian as a second language will have to discover the outlined differences between English and Russian simple verbs. Are there any differences between English and Russian complex verbs that they have to pay attention to?

3.2 Events that contain the outer aspect projection

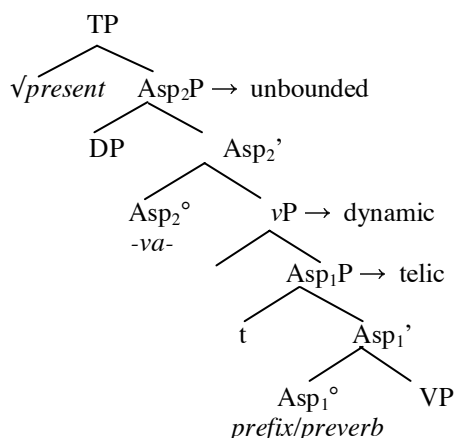
Just as events that lack the outer aspect projection, the events that contain this projection may contain or lack the inner aspect projection. Those that contain such a projection are complex accomplishments, and those that lack it are complex activities. The example of verbs containing both the inner and the outer aspect projections are given in (7), while in (8) we can find the examples of the verbs that contain the outer aspect projection, but lack the inner aspect projection.

(7) Complex accomplishments⁷

(a) English: progressive accomplishments
e.g., *be reading a/the book*

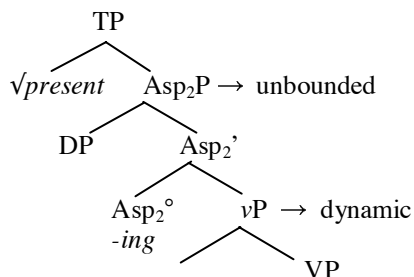


(b) Russian: secondary imperfective (SI) verbs
e.g., *perečítat' knigi*
“reread-SI (the) books.”

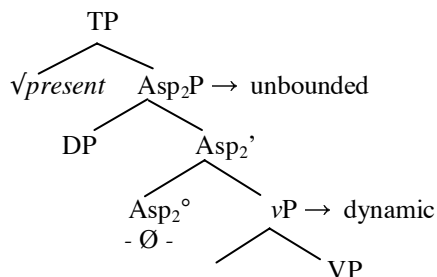


(8) Complex activities

(a) English: progressive activities
e.g., *be reading book*



(b) Russian: imperfective (IMP) verbs
e.g., *čítat' knigi*
“read-IMP (the) books.”



⁷ In the case of complex accomplishments, the presence of the outer aspect projection Asp₂P, occupied by the English progressive suffix *-ing* or by the Russian SI suffix *-va-*, indicates that the events we are dealing with, although telic, are unbounded. In other words, the presence of the outer aspect projection guarantees the shifting of the interpretational emphasis from the event's boundaries (as in the case of simple accomplishments) to its internal structure.

In English, complex events are encoded by verbal forms that, traditionally, have been called the forms of the progressive/continuing tense. The example that I use in (7a) and (8a) is that of the verb *to read*, namely, *be reading*.

In Russian, complex dynamic events are expressed by two imperfective verbal forms: SI and IMP. Note that the example of complex accomplishments that I use in (7b), i.e., *perečĭvat'*, is a secondary imperfective form of the verb *to read*, while the example of complex activities that I use in (8b), i.e., *čĭtat*, is the imperfective form of the same verb.

If we look at the behavior of the verbs that describe complex events we can observe that these verbs contrast with the verbs that describe simple events in that they are compatible with the present tense interpretation. This fact explains the grammaticality of the sentences (9a) and (9b), where the verb *is reading* is compatible with the present tense adverbial *at this moment*. Similarly, as can be seen from (10a) and (10b), the Russian verbs *perečĭtĭvaet* “rereads-SI” and *čĭtaet* “reads-IMP” can receive an ongoing event interpretation.

- (9) a. At this moment Peter is reading the books. - progressive accomplishments
 b. At this moment Peter is reading books. - progressive activities
- (10) a. V nastojas'ij moment Masha perečĭtĭvaet knigi. - secondary imperfectives
 At this moment Masha rereads-SI the books
 “At this moment, Masha is rereading the books.”
- b. V nastojas'ij moment Masha čĭtaet knigi. - imperfectives
 At this moment Masha reads-IMP the books
 “At this moment, Masha is reading the books.”

Given that complex events are compatible with the present tense, there is no need for the shifting operation to apply. Unfortunately, we cannot test this claim for English, as the unbounded nature of complex events allows them to receive a habitual interpretation, even in the absence of the shifting operation.⁸ We can, however, test it for Russian, where shifting is into the future.

- (11) a. *Čerez 5 minut Masha perečĭtĭvaet knigi. - secondary imperfectives
 In 5 minutes Masha rereads-SI the books
 “In 5 minutes, Masha is rereading the books.”
- b. *Čerez 5 minut Masha čĭtaet knigi. - imperfectives
 In 5 minutes Masha reads-IMP the books
 “In 5 minutes, Masha is reading the books.”

The ungrammaticality of the sentences in (11) demonstrates that Russian IMP and SI verbs cannot receive a future tense interpretation, supporting the claim that, in the case of complex events, the shifting operation does not apply. In effect, the only way to express the future with Russian IMP and SI verbs is by adding the future tense marker *budet* “will”:

- (12) a. Čerez 5 minut Masha budet perečĭtĭvat' knigi. - secondary imperfectives
 In 5 minutes Masha will reread-SI the books
 “In 5 minutes, Masha will be rereading the books.”
- b. Čerez 5 minut Masha budet čĭtat' knigi. - imperfectives
 In 5 minutes Masha will read-IMP the books
 “In 5 minutes, Masha will be reading the books.”

⁸ This is a well attested behavior of verbs that lack event boundaries (Smith 1997, Rothstain 2004). In the literature such verbs are referred to as homogenous or atelic. Note that in my system, unbounded or complex verbs, lacking time boundaries, are homogenous, similarly to simple activity verbs.

From what we have seen so far, no difference exists between English and Russian complex verbs, in that all of them are compatible with ongoing event interpretation and to make them compatible with the future tense interpretation requires inflecting them with a future tense marker.

However, if we compare the structures in (7) and (8), we will see that while in English the progressive suffix *-ing* can occupy the outer aspect projection of either complex activities or complex accomplishments, in Russian the SI suffix *-va-* can only occupy the outer aspect projection of complex accomplishments. Slabakova (2001) explains this fact by the selectional restriction of *-va-*, whereby *-va-* can only attach to telic verbs (or verbs containing an inner aspect projection). On this view the selectional properties of *-va-* are different from those of the English *-ing*, which can attach to atelic verbs, e.g., *reading books*. Within my framework the inability of *-va-* to appear with IMP roots has a different explanation. *-va-* cannot attach to IMP verbs, not because they are atelic, but because these verbs already contain an outer aspect projection, filled by the \emptyset -morpheme. There is no difference in selectional properties of *-ing* and *-va-*.

Theoretically, the form of activity verbs inflected with *-va-* would be possible only if Russian IMP verbs had (2b) as an alternative structure. The IMP verbs with such a structure could host a suffix associated with outer aspect. This is exactly what we find in English, where attaching *-ing* to simple activity verbs that have the structure (2b), produces complex activity verbs that have the structure (8b). The fact that in Russian the forms of IMP verbs inflected with *-va-* are ungrammatical, e.g., **čityvat'* “*va*-inflected form of the verb to read-IMP”, empirically supports our conclusion that Russian lacks the structure in (2b).

Keeping in mind the differences between the syntactic structure of English and Russian dynamic verbs, let us see what exactly do English speakers learning Russian as a second language need to acquire in order to attain native-like competence of Russian outer aspect.

4. Acquisition of Russian dynamic verbs

In order to acquire Russian aspect, L2 learners with English as their L1 must establish that Russian imperfective verbs, despite their morphological simplicity represent complex events. In doing so, they must associate IMP verbs with the structure in (8b), by postulating the \emptyset -morpheme that occupies the outer aspect projection. Once they have established this fact, they will allow Russian imperfective verbs (1) to receive an ongoing event or (2) a habitual interpretation. Crucially, L2 learners must block the initial transfer from English and rule out the structure in (2b), as being illegitimate in Russian. L2 learners, who have succeeded in blocking transfer, will disallow Russian IMP verbs to receive a future tense interpretation as well as to be inflected with the SI suffix *-va-*. In order to obtain a future tense interpretation, they will inflect IMP verbs with the future tense marker *budet* “will”.

When it comes to Russian PERF verbs, L2 learners must recognize that these verbs not only exhibit behavior opposite of that of Russian IMP verbs, but also, unlike English non-progressive accomplishments, are incompatible with a habitual reading. In other words, in addition to acquiring the Russian shifting operation and appropriately allowing perfective verbs to receive a future tense reading, they must block the transfer from L1 and disallow perfective verbs to appear in the habitual, just as much as in the present. Moreover, L2 learners must refrain from forming the analytical future tense form of perfective verbs, thus, blocking the initial transfer from English, where *will* is compatible with simple accomplishments.

Note that in order to postulate the structure in (1b) for Russian perfective verbs, L2 learners must recognize that these verbs contain a preverb that occupies the inner aspect head.⁹ Otherwise, they are predicted to confuse them with morphologically simple imperfective verbs. This confusion may have dramatic consequences, whereby L2 learners will treat perfective verbs as complex activities rather than simple accomplishments.

Similarly, for secondary imperfective verbs, L2 learners must recognize that these verbs contain the SI suffix *-va-*. Only in this case will they be able to associate SI verbs with complex accomplishments as opposed to simple ones, drawing the distinction between PERF and SI verbs. L2

⁹ Given the idiosyncrasy of the process of verbal prefixation in Russian, this might be not as easy as it seems, requiring extensive memorization, especially in the case of those verbs that are endowed with a new meaning upon prefixation.

learners with a native-like knowledge of Russian will allow SI verbs to receive an ongoing or a habitual interpretation and to appear in the analytical future form. They will prohibit these verbs from receiving a future tense interpretation.

Table 2 summarizes the behavior that L2 learners with a native-like judgment of Russian aspect are expected to exhibit.

Table 2 The summary of predictions

	PERF	SI	IMP
ONGOING	*	√	√
HABITUAL	*	√	√
ANALYTIC FUTURE	*	√	√
SHIFTING INTO FUTURE	√	*	*
- <i>va</i> - ATTACHMENT	√	N/A	*

To test these predications I conducted an experiment the details of which we will discuss next.

5. The experiment

5.1 Participants

21 subjects participated in the experiment. 14 of the participants were L2 speakers of Russian with English as their L1 and 7 were Russian native controls. The proficiency level of L2 learners, as determined by Cloze test, was the following: 2 advanced, 5 high intermediate and 7 low intermediate. All L2 participants were undergraduate students at McGill University, finishing up the high intermediate or advanced courses of Russian. Five of them had lived in Russia for some period of time, ranging from 1 month to 5 years.

5.2 Task

A computerized version of the grammaticality judgment task was used. To prevent unconscious reconstruction of ungrammatical sentences, participants were also presented with audio recordings of the sentences they were reading. The subjects were asked to choose whether the sentence they read and heard was acceptable or unacceptable in Russian. The option “don’t know” was reserved for sentences with unknown vocabulary.

5.3 Stimuli sentences

There were 100 stimuli sentences. 20 appeared with a present tense adverb, 20 with a habitual adverb, and 40 with a future tense adverb, in two different morphological forms: 20 in synthetic and 20 in analytic. There were 20 distractors.¹⁰

5.3.1 Tested conditions

Throughout the test, Russian verbs appeared in 5 different conditions.

Condition 1 tested whether all three forms of Russian verbs are compatible with an ongoing event interpretation. In particular, in this condition I tested the grammaticality of the sentences containing either a PERF, SI or IMP verb along with the present tense adverbial *v nastojašč’ij moment* “at this moment”. There were 15 sentences of this sort, 5 with each type of verb.

¹⁰ All sentences were controlled for the inner aspect value, in that PERF verbs only occurred with overtly quantized NPs, and IMP and SI verbs occurred with homogenous NPs or without an NP.

Condition 1:

- | | | | | | | |
|------|---|-------------------|---------------------|-------------------------|------------------|-------------------|
| (13) | *V nastojaš'ij moment
At this moment
"At this moment, Petja's team will-lose the match." | Petina
Petja's | komanda
team | proigraet
loses-PERF | match.
match. | – simple verb |
| (14) | V nastojaš'ij moment
At this moment
"At this moment, Petja's team is-losing a/the match." | Petina
Petja's | komanda
team | proigrivaet
loses-SI | match.
match. | } – complex verbs |
| (15) | V nastojaš'ij moment
At this moment
"At this moment, Masha is-playing with Olja." | Maša
Maša | igraet
plays-IMP | s
with | Olej.
Olja. | |

Condition 2 tested whether each form of Russian verbs are compatible with a habitual adverbial, which would signal its ability to receive a habitual interpretation. This condition was also represented by 15 sentences.

Condition 2:

- | | | | | | | |
|------|--------------------|-----------------|---------------------|-------------------------|------------------|-------------------|
| (16) | *Petina
Petja's | komanda
team | často
often | proigraet
loses-PERF | match.
match. | – simple verb |
| (17) | Petina
Petja's | komanda
team | často
often | proigrivaet
loses-SI | match.
match. | } – complex verbs |
| (18) | Maša
Maša | často
often | igraet
plays-IMP | s
with | Olej.
Olja. | |

Condition 3 tested the acceptance of Russian verbs in the analytic future, i.e., with the future tense marker *budet* "will". There were 20 sentences of this type, 10 containing perfective and 10 imperfective verbs.¹¹

Condition 3:

- | | | | | | | | |
|------|--|-------------------|---------------|--------------------------|---------------------------|--------------------------------|----------------|
| (19) | *Zavtra
Tomorrow | Nina
Nina | budet
will | narisovat'
paint-PERF | svoj
self | avtoportret.
auto portrait. | – simple verb |
| (20) | Po okončanii peremeni
After break is over | učeniki
pupils | budut
will | risovat'
paint-IMP | pastelju.
with-pastel. | | – complex verb |
- "After the break, the pupils will be-painting using pastel."

Condition 4 tested whether participants would allow Russian verbs to shift into the future. That is why all of the 20 stimuli sentences belonging to this condition contained a future tense adverbial of the type *in X-time*.

¹¹ Given rather poor performance of the L2 participants on SI verbs (as we will see later), I decided not test how they would treat SI verbs in respect to Condition 3 and Condition 4.

Condition 4:

- (21) Čerez čas Petja viučit eto stixotvorenie naizust'. – simple verb
 In hour Petja learns-PERF this poem by-heart.
 “In an hour, Petja will-learn this poem by heart.”
- (22) *Čerez čas Kolja učit različnie jaziki. – complex verb
 In hour Kolja learns-IMP various languages.
 “In an hour, Kolja is-learning various languages.”

Condition 5 tested whether the L2 learners would allow *-va-* to attach to perfective and imperfective verbs. There were 20 stimuli sentences of this type, 10 appearing with a present tense adverbial and 10 with a habitual adverbial.

Condition 5:

- (23) V nastojaš'ij moment Petina komanda proigrivaet match.¹² – simple
 At this moment Petja's team loses-SI match. verb
 “At this moment, Petja's team is losing a/the match.”
- (24) *V nastojaš'ij moment Maša igraivaet s Olej. – complex verb
 At this moment Masha plays-??? with Olja.
 Intended meaning: “At this moment, Masha is is-playing with Olja.”

5.4 Results

Table 3 reports percentages of group results on all 5 conditions in terms of acceptances:

Table 3 Group results: acceptances, %

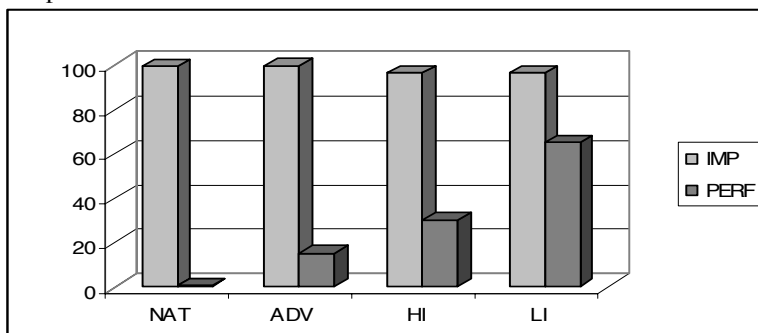
Conditions	Verb type	Nat = 7	Adv = 2	HI = 5	LI = 7
CONDITION 1 (Ongoing event reading)	*PERF	0	10	28	63
	SI	100	90	20	63
	IMP	100	100	97	93
CONDITION 2 (Habitual reading)	*PERF	1	20	32	67
	SI	94	90	72	80
	IMP	99	100	96	100
CONDITION 3 (Analytic future)	*PERF	0	5	38	73
	IMP	99	100	88	71
CONDITION 4 (Synthetic future)	PERF	99	95	76	79
	*IMP	4	10	14	41
CONDITION 5 (<i>-va-</i> attachment)	PERF ¹³	97	90	52	71
	*IMP	1	0	30	46

Let us first consider the results related to IMP verbs. As can be seen from Condition 1 and Condition 2 in Table 3, all groups of participants accepted IMP verbs as compatible with ongoing event and habitual readings at a very high rate, ranging from 93-100%. This equally good performance by all groups can be more clearly seen on Graph 1. Note that, since the performance on IMP verbs in Condition 1 and Condition 2 was similar, I added the results of these conditions together.

¹² Note that these sentences are also part of Condition 1.

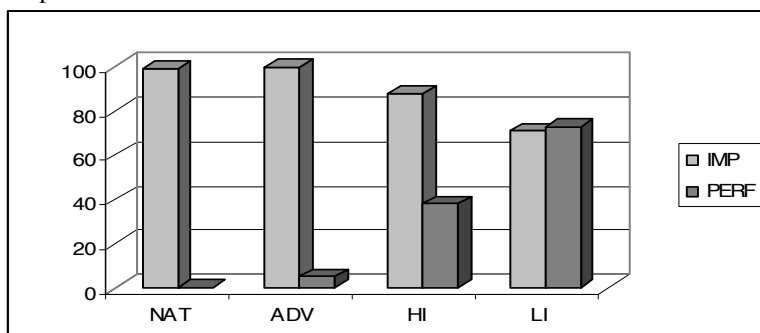
¹³ To avoid any confusion, recall that PERF + *-va-* yields a SI verb. Despite the fact that I gloss these forms as SI, what I tested in this condition is the ability of *-va-* to attach to PERF verbs.

Graph 1 Condition 1+ Condition 2



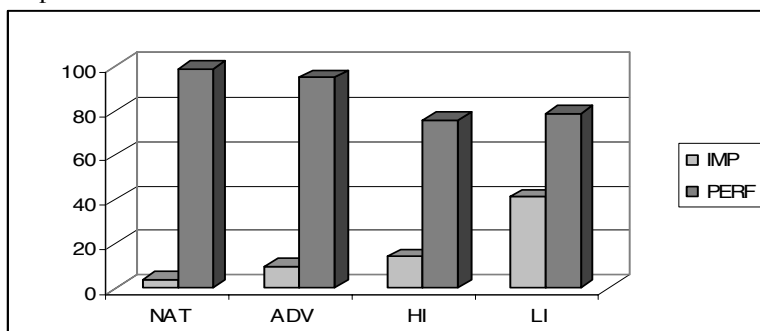
When it comes to the analytic future tested by Condition 3, the pattern of performance is different, however. The advanced group, similarly to native speakers, accurately judged IMP to be compatible with this form 100% of the time. The performance of the high intermediate group was less accurate than that of advanced or native control groups, i.e., 88%. And the performance of the low intermediate group was even less accurate than that of the high intermediate group, i.e., 71%. This descending pattern in the performance on IMP verbs can be clearly seen in Graph 2. Note that the performance by the high intermediate and the low intermediate group is significantly different from that of the native controls ($p = 0.0218$ for the HI group and $p = 0.0001$ for the LI group).

Graph 2 Condition 3



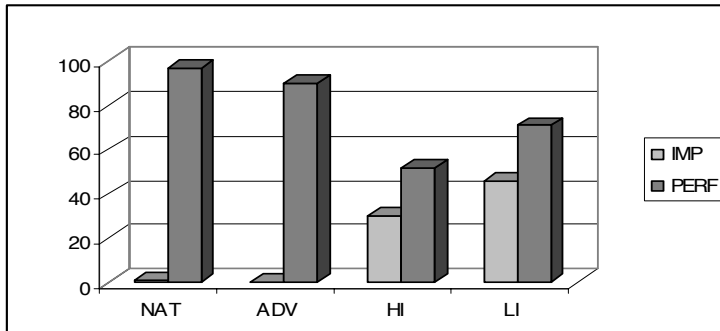
The pattern observed in Condition 3 repeats in Condition 4 and Condition 5, in that performance on IMP verbs becomes less accurate as we move from the more advanced to the less advanced group. In particular, whereas both the advanced and high intermediate groups inappropriately allowed IMP verbs to appear in synthetic future form 10% and 14% of the time, as compared to 4% by the native controls, the lower group accepted such forms 41% of the time. This behavior of the low intermediate group is significantly different from the two higher groups of L2 speakers: $p = 0.0112$.

Graph 3 Condition 4



In Condition 5, the advanced group, once again, performed similarly to the native controls, accurately rejecting the ungrammatical forms of IMP verbs with *-va-* 100% of the time. As for the participants of the high intermediate group, they judged these illegitimate forms to be grammatical 30% of the time. This differs significantly from the performance of the advanced and native control group: $p = 0.0047$. The low intermediate group accepted the ungrammatical forms at an even higher rate, i.e., 46%. Although this performance is significantly different from that of the advanced and native control group with $p = 0.0038$, it does not differ significantly from the performance by the high intermediate group ($p = 0.3913$).

Graph 4 Condition 5



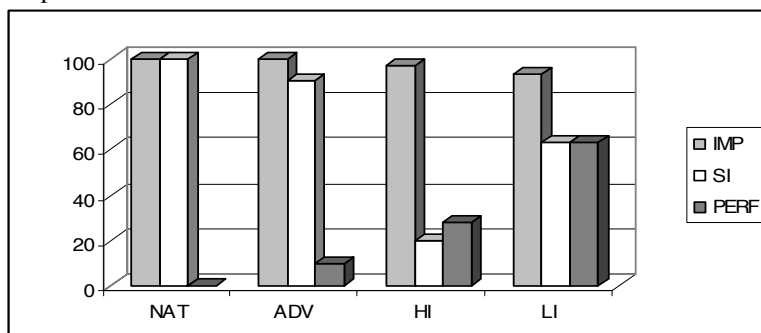
Let us now turn to perfective verbs. If in Table 3 we look at the results related to Condition 1 and Condition 2 (which tested compatibility of stimuli verbs with ongoing and habitual reading), we will see that each group of participants does not make a significant distinction between the behaviors of perfective verbs in these two conditions. In particular, starting with native controls, they judged PERF verbs as grammatical 0% of the time in Condition 1 and 1% of the time in Condition 2. The advanced L2 participants accepted these verbs 10% and 20%, high intermediates 28% and 32%, and low intermediate 63% and 67% in ongoing event and habitual readings, respectively. None of these differences are statistically significant. Hence, as far as perfective verbs are concerned, we can add the results of Condition 1 and Condition 2 together, as shown on Graph 1. If we look at the results across the groups, we will see that the performance of the low intermediate group at 65% is less accurate than that of the high intermediate group at 30%, which, in turn, is less accurate than the performance of the advanced group at 15%. The latter should be compared to the 0.5% of native controls.

Turning now to the results of Condition 3 and Condition 4 that tested which of Russian verbs are compatible with the analytic or synthetic future, we can see that the performance of the participants on perfective verbs, once again, correlates with their proficiency level (cf. Graph 2 and Graph 3). At 5% and 95%, the advanced group performed similarly to the 0% and 99% performance of the native speakers. The high intermediate group accepted perfective forms at a 38% and 76% rate in the two conditions under consideration, which significantly differs from the behavior of the advanced group (in Condition 3 $p = 0.0328$ and in Condition 4 $p = 0.0092$). And, finally, the low intermediate group accepted ungrammatical forms 73% and 79% of cases, respectively, in Condition 3 in Condition 4. Only the performance of the low intermediate group on Condition 3 differs significantly from the performance of the high intermediate group ($p = 0.0314$).

In Condition 5, whose results are depicted on Graph 4, advanced speakers accurately accepted PERF verbs with *-va-*, i.e., secondary imperfectives, as legitimate forms 90% of the time, as compared to 97% by the native controls. However, the high intermediate group accepted them only 52% of the time, and the low intermediate group even less often, i.e., 71% of the time. The difference in the behavior of all three L2 groups is statistically significant ($p = 0.0022$ – between the advanced and HI groups and $p = 0.0452$ – between the HI and LI groups).

When it comes to the SI verbs, note that the participants of the high and low intermediate groups accepted SI forms in Condition 1 at the much lower rate of 20% and 63% in comparison to the participants in the advanced and native speaker groups, i.e., 100% and 90%:

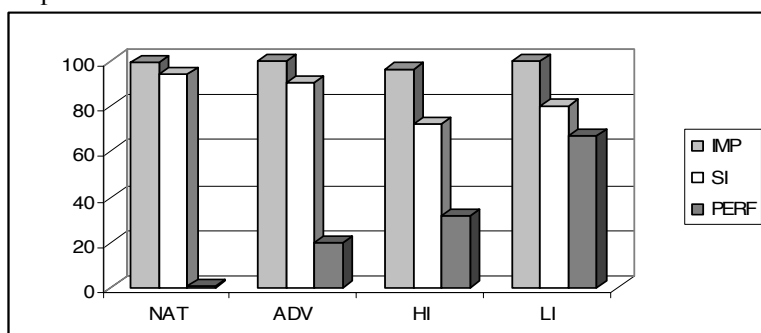
Graph 5 Condition 1



The performance of both the high and low intermediate groups is significantly different from that of advanced group ($p = 0.0004$ and $p = 0.0291$, respectively). The low acceptance of the grammatical SI with an ongoing event reading is especially surprising in the case of the high intermediate group, whose overall performance was better than that of the low intermediate group.

As far as the judgments of SI verbs with a habitual reading are concerned, the performance of the intermediate groups at 72% and 80% is insignificantly lower than the performance of the native controls and advanced groups at 94% and 90% ($p = 0.1574$ and $p = 0.4432$).

Graph 6 Condition 2



In sum, the results reported in Table 3 show a correlation between the proficiency level of the participants and their performance on each condition (except for the SI verbs in Condition 1), with the advanced proficiency groups performing at the same rate as the native controls, the high intermediate group performing at a lower rate than the advanced group and the low intermediate group performing at an even lower rate than the high intermediate group. In other words, the results reflect the developmental process of acquisition of the Russian outer aspect.¹⁴

It is important to note that often participants whose performance differed significantly from that of the more advanced groups did not treat PERF and IMP verbs in a similar fashion, demonstrating their emerging knowledge of the Russian aspectual system. As shown on Graph 1, in both Condition 1 and Condition 2, each group of participants accepted grammatical IMP verbs more often than ungrammatical PERF verbs, with the difference being statistically significant ($p \leq 0.0001$). The same holds for Condition 4, as depicted on Graph 3: each group of participants treated PERF verbs differently from IMP verbs (for the advanced group $p = 0.0034$, for the high intermediate group $p = 0.0001$ and for the low intermediate group $p = 0.0148$).

However, as can be seen on Graph 2, in Condition 3, only the advanced and the high intermediate groups recognized the difference between IMP and PERF verbs ($p = 0.0028$ for the advanced group and $p = 0.0048$ for the high intermediate group). The behavior of the low intermediate group, along with

¹⁴ Given the overwhelming amount of the data I will not discuss the individual results. Readers who are interested in seeing the latter can do so by consulting the Appendix at the end of the paper.

the high intermediate group, was even less native-like in Condition 5, where only the advanced participants made a significant distinction between the PERF and IMP verbs ($p = 0.0034$). As can be observed from Graph 4, for the other two groups of L2 participants, this distinction was insignificant ($p = 0.1435$ for the high intermediate group and $p = 0.0950$ for the low intermediate group).

The two intermediate groups exhibited a particular difficulty with SI verbs, which is also reflected in their performance on these verbs in Condition 1 and Condition 2 (cf. Graph 5 and Graph 6). The only significant difference that we find among the intermediate participants is in the case of the high intermediate group in Condition 2 ($p = 0.0004$). The same group displayed but an insignificant difference when it comes to Condition 1 ($p = 0.6075$). Similarly, the low intermediate group made a non-significant distinction between PERF and SI verbs in Condition 2 with $p = 0.1751$ and no difference between these two types of verbs in Condition 1, i.e., both are accepted in 63% of trials.

We will discuss these problematic results in more details in the next section. However, before we do that, I will conclude this section by stating that, apart from a few cases to which we will turn our attention next, the L2 participants made a significant distinction between the behavior of PERF and IMP verbs, demonstrating their knowledge of the Russian aspectual system.

6. Discussion

Let us begin our discussion by looking at the performance on IMP verbs. Recall that those learners who have the full mastery of these verbs should have accepted them in Condition 1 and Condition 2. As we have seen in the previous section, all of the participants performed extremely well on these conditions. These results suggest that all L2 participants consider Russian IMP verbs to contain an outer aspect projection, filled by the \emptyset -morpheme. Hence, the L2 participants appropriately assign the structure (8b) to Russian dynamic IMP verbs.

The fact that some L2 participants still allow IMP verbs to receive a future tense interpretation, tested by Condition 4, suggests that these participants have not yet fully blocked transfer from English. In particular, they still incorrectly consider (2b) to be an alternative structure for Russian IMP verbs and, thus, allow them to undergo a shifting operation into the future. This conclusion is also supported by the results of Condition 5, where these L2 participants allowed IMP verbs to be inflected with *-va-* which, as we have seen, can only attach to the verbs with the structure in (2b). For instance, if we look at the performance of the participants belonging to the low intermediate group, we will see that they allow IMP verbs to shift into the future at the similar rate as they allow them to appear with *-va-*, i.e., 41% vs. 46%.

The availability of the illegitimate structure (2b) may also explain the non-native-like performance of the less proficient L2 participants on IMP verbs in Condition 3, which tested whether these verbs are compatible with the analytic future. Because these participants still allowed some IMP verbs to acquire a future tense interpretation, they were unwilling to inflect such verbs with yet another future marking. This conclusion is supported by the results. For instance, if in Condition 3 and Condition 4 we look at the results of the participants belonging to the high intermediate group, we will see that these participants allowed the IMP verbs to shift into the future 14% of the time and disallowed them to appear in the analytic future in 12% of cases. The numbers are strikingly similar. The same holds for the low intermediate group, which accepted the IMP verbs in their synthetic form in 41% of cases and rejected them in their analytic form 29% of the time.

The performance by the L2 participants on perfective verbs in Condition 1 suggests that more advanced participants have acquired the fact that these verbs, having the structure of simple accomplishments, are incompatible with an ongoing event interpretation. The non-native-like performance of the low intermediate group, however, does not constitute an argument that the participants belonging to this group do not know that Russian PERF verbs have the structure in (1b). Given that all perfective verbs appearing in Condition 1 had an idiosyncratic meaning, i.e., a meaning different from the imperfective verbs that they were derived from, it could be that the participants of the low intermediate group simply failed to recognize some of these verbs as containing a preverb. As has been mentioned before, this problem is that of memorization, which is standardly viewed to be outside the realm of the acquisition device. This problem is predicted to persist as long as L2 learners have not memorized all appropriate forms of the Russian perfective verbs.

The results of Condition 4, where I used regular perfective verbs, i.e., verbs that have a transparent meaning and in which the root is thus easily detectible, demonstrate that the L2 participants have acquired the Russian shifting operation into the future. Moreover, the fact that the L2 participants exhibit the same performance pattern in Condition 2 as in Condition 1 suggests that they have successfully blocked the English shifting operation into the habitual.¹⁵ Since the lower proficiency groups partially allow perfective verbs to appear in the analytical future tense form (which was tested by Condition 3), they still treat these verbs as English simple accomplishments, which are compatible with “will”.

Turning now to the PERF verbs appearing in Condition 5, it is somewhat surprising that the two intermediate groups considered these verbs to be ungrammatical rather frequently. We can, however, explain this fact if we recall that the SI verbs are derived from idiosyncratic perfective verbs. Given that the L2 learners of the two intermediate groups experienced difficulties in identifying these verbs as containing a preverb, they may have treated them as IMP verbs, thus disallowing *-va-*'s attaching to them. Importantly, the fact that even these participants accepted PERF verbs at a higher rate than the corresponding IMP verbs in Condition 5, suggests that they do allow *-va-* to attach to those verbs that they have properly analyzed as being perfective. It is, however, unclear to me why the participants belonging to the intermediate groups accepted these forms more often in the habitual than in the present, as revealed by the results of Condition 1 and Condition 2, where these same verbs appear under the label *SI verbs*. Especially intriguing is the behavior of the high intermediate group, which performed significantly better in Condition 2 than in Condition 1. Could it be that these unexpected results are due to the fact that in Condition 1 and Condition 2 each verb type was represented only by 5 tokens? Or this is an instance of some sort of hypercorrection? For now, it remains a mystery to me.

7. Conclusion

The findings reported in Section 5 reveal that all of the L2 participants consider Russian IMP verbs to have the structure of complex activities, despite the fact that, at first glance, these verbs appear to be morphologically simple. Only the participants of the lower proficiency groups, at times, permit Russian IMP verbs to surface with a structure of simple activities, transferring it from English, where such a structure is legitimate. As a consequence, they inappropriately allow such misanalyzed IMP verbs to receive a future tense interpretation and to be inflected with the SI suffix *-va-*.

Moreover, the results of the experiment suggest that the L2 participants have successfully acquired the fact that Russian PERF verbs are incompatible with an ongoing event interpretation and, thus, must shift into the future. The fact that the L2 participants prohibited PERF verbs to appear in the habitual at the same rate as in the present tense demonstrates that they have successfully blocked the English shifting operation. The lower intermediate group, however, showed some signs of transfer, when it came to the future tense interpretation. In particular, they occasionally allowed Russian PERF verbs, just as they would English simple accomplishments, to occur in the analytic future form. The participants belonging to this proficiency group also displayed difficulties in identifying some non-transparent idiosyncratic PERF verbs as being perfective. This is, however, a problem of memorization, and as such, does not argue for these participants' inability to properly treat the verbs they deemed to be perfective. As I have argued, the L2 participants accurately allow *-va-* to attach to the verbs that they correctly analyzed as perfective.

In sum, the results of my study reveal that the L2 participants have, on the whole, acquired Russian outer aspect. This is especially evident in the case of the more proficient L2 participants. Partially non-native-like performance of the lower proficiency groups is due to transfer from English, as well as to their failure to recognize perfective verbs with a non-transparent idiosyncratic meaning as being perfective. Note that the presence of transfer in the case of the lower proficiency groups is predicted by Schwartz and Sprouse's (1996) Full Transfer Full Access Hypothesis and reflects the developmental process of L2 acquisition. Although it may seem at first glance that transfer should not alter the performance of L2 learners profoundly, this assumption is not borne out in the case of Russian aspect, where even a slight deviation from the target yields drastically different results in performance,

¹⁵ Just like in Condition 1, the perfective verbs tested in Condition 2 also had idiosyncratic, non-transparent meanings.

whereby PERF verbs may be treated as IMP and vice versa. Given that these two forms of Russian verbs have the opposite behavior, it is not surprising that Russian instructors perceive L2 learners as failing to acquire the Russian aspectual system. However, their perception does not reflect the actual picture, namely, that L2 learners of Russian are able to attain native-like competence in the domain of Russian outer aspect, as demonstrated by this study.

Overall, the present study, supporting the Full Transfer Full Access Hypothesis, serves as a counterexample to the claim that appears in the Russian pedagogical literature.

Appendix

Table 4 Individual results of 12 L2-ers: acceptances, %

Groups		Condition 1			Condition 2			Condition 3		Condition 4		Condition 5	
		*PER	SI	IMP	*PER	SI	IMP	*PER	IMP	PER	*IMP	PER	*IMP
A	S1	20	80	100	0	100	100	0	100	100	10	100	0
	S2	0	100	100	40	80	100	10	100	90	30	80	0
HI	S3	0	0	100	20	80	100	20	80	90	10	40	10
	S4	40	40	80	40	80	80	50	80	70	10	60	20
	S5	20	0	100	40	60	100	80	100	80	30	30	10
	S6	40	0	100	20	80	100	10	90	60	10	70	40
	S7	40	60	100	40	60	100	30	90	80	10	60	70
LI	S8	0	60	100	60	60	100	60	90	90	60	60	80
	S9	60	40	80	50	60	100	60	70	60	10	40	20
	S10	100	80	100	80	80	100	80	70	90	10	80	40
	S11	60	20	100	40	80	100	80	80	90	60	60	30
	S12	60	80	100	80	80	100	90	70	30	40	80	100
	S13	60	80	80	80	100	100	90	60	100	40	90	10
	S14	100	80	100	80	100	100	50	60	90	70	90	40

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Proceedings of the 9th Generative Approaches to Second Language Acquisition Conference (GASLA 2007)

edited by Roumyana Slabakova, Jason Rothman, Paula Kempchinsky, and Elena Gavrusseva

Cascadilla Proceedings Project Somerville, MA 2008

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Nossalik, Larissa. 2008. L2 Acquisition of Russian Outer Aspect. In *Proceedings of the 9th Generative Approaches to Second Language Acquisition Conference (GASLA 2007)*, ed. Roumyana Slabakova et al., 165-180. Somerville, MA: Cascadilla Proceedings Project.

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Nossalik, Larissa. 2008. L2 Acquisition of Russian Outer Aspect. In *Proceedings of the 9th Generative Approaches to Second Language Acquisition Conference (GASLA 2007)*, ed. Roumyana Slabakova et al., 165-180. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #1635.