

# L1 ATTRITION OF RUSSIAN ASPECT\*

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Previous research on L1 attrition has demonstrated that individuals who have acquired Russian as their first language but subsequently replaced it with English as a dominant language consistently fail to exhibit appropriate use of Russian aspect (Polinsky 2006, Pereltsvaig 2005). The present study investigates whether the problems that such individuals experience extends to comprehension. The results reveal that in comprehension only lexical properties related to aspect, and not morphosyntactic properties, are affected by attrition. These findings demonstrate that attrition of aspect does not involve syntactic restructuring, contra Pereltsvaig (2005).

## 1. Introduction

### 1.1. Russian aspectual system

The majority of Russian dynamic verbs can appear in two aspectual forms: imperfective (IMP) and perfective (PERF). For instance, the verb ‘to write’ has two forms: the imperfective *pisat'*<sub>IMP</sub> and the perfective *napisat'*<sub>PERF</sub>. To “properly” speak Russian, one needs to know which of the two aspectual forms is appropriate in a given context. The choice of a suitable form is conditioned by a combination of lexical, morphosyntactic, semantic and discourse constraints.

### 1.2. Previous research on L1 attrition of Russian aspect

Previous studies on L1 attrition of Russian mainly investigated speech of individuals who were born in Russia but subsequently moved to the US before the age of 13 (Polinsky 1997, 2006, Pereltsvaig 2004, 2005). These individuals switched to English as their dominant language and, after continuous disuse, lost many properties of their Russian L1. The reduced variety of Russian that they ended up with has been labeled American Russian (AR). We will not discuss all the properties that distinguish AR from varieties spoken by Russian monolinguals. It suffices to say that aspect is among the properties severely affected by attrition.

According to Polinsky (2006), speakers of AR have lost the aspectual distinction found in monolingual Russian speakers. Typically, they retain only one member of an aspectual pair. The choice of the form to be retained is not random, however. It depends on the statistical frequency at which a given aspectual form is encountered in Russian: the higher the frequency, the more likely speakers of AR are to retain a given form, and vice versa.

Pereltsvaig (2004) rejects the Frequency Hypothesis, claiming that it only accounts for 50% of the production corpus. She also argues against the view that attributes attrition to transfer from a dominant language. She reasons that if attrition of aspect were caused by interference from English, speakers of AR would assimilate Russian perfective morphology into English perfect and

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\* I would like to express my gratitude to the participants of the CLA conference for their questions and thoughtful remarks. All errors are mine.

Russian imperfective morphology into English progressive.<sup>1</sup> They, however, do not exhibit such behaviour.

As an alternative, Pereltsvaig (2005) proposes the Lexical Aspect Hypothesis which maintains that while in Contemporary Standard Russian (CSR) aspectual morphology encodes the perfective/imperfective distinction, in AR it encodes the  $[\pm P]$  distinction – a distinction related to the verb’s lexical meaning. Specifically, in AR the perfective morphology is used to encode the  $[+P]$  verbs, or verbs with a bounded Path, and the imperfective morphology is used to encode the  $[-P]$  verbs, or verbs without a bounded Path.

Since  $[\pm P]$  denotes lexical rather than grammatical distinction, Pereltsvaig concludes that AR has undergone lexicalization – a process whereby grammatical aspect is replaced by lexical one. She argues that lexicalization is due to restructuring of morphosyntactic structure related to aspect. Note that if attrition involves syntactic restructuring, then the linguistic competence of attriters should differ from the linguistic competence of monolingual Russian speakers. The results of the study reported in this paper, however, show that this is not so.

But before we discuss this study, let us look at the morphosyntactic structure of Russian aspect.

## 2. Morphological structure of Russian aspect

What makes the Russian aspectual system particularly complex is that although each verb typically has only two aspectual variants with the same meaning, the majority of dynamic roots can appear in three morphologically distinct forms: primary imperfective (PI), perfective (PERF) and secondary imperfective (SI). Table 1 contains examples of all three types of Russian verbs.

Table 1 Morphological types of Russian verbs

| Primary Imperfective (PI)               | Perfective (PERF)                            | Secondary imperfectives (SI)                   |
|---|--|--|
| ROOT+T/AGR                              | ASP <sub>1</sub> -ROOT-T/AGR                 | ASP <sub>1</sub> -ROOT-ASP <sub>2</sub> -T/AGR |
| <i>pisa-t</i> ‘to write <sub>PI</sub> ’ | <i>na-pisa-t</i> ‘to write <sub>PERF</sub> ’ | --   |
|   | <i>pod-pisa-t</i> ‘to sign <sub>PERF</sub> ’ | <i>pod-pisy-va-t</i> ‘to sign <sub>SI</sub> ’  |
| <i>pi-t</i> ‘to drink <sub>PI</sub> ’   | <i>vy-pi-t</i> ‘to drink <sub>PERF</sub> ’   | <i>vy-pi-va-t</i> ‘to drink <sub>SI</sub> ’    |

As can be seen from this table, primary imperfective verbs contain no aspectual morphemes, perfective verbs contain an aspectual prefix and secondary imperfective verbs contain both an aspectual prefix and the aspectual suffix *-va*.

Thus, combining the roots *pisa-* and *pi-* with the infinitival marker *-t* yields the primary imperfective forms of the verbs ‘to write’ and ‘to drink’. Adding an aspectual prefix turns these verbs into perfectives. Finally, prefixed forms can further be inflected with the suffix *-va*, which changes their aspectual status into secondary imperfectives. Note that not all prefixed stems allow for *-va* suffixation. For instance, the verb *\*na-pisy-va-t* ‘write<sub>SI</sub>’ is not attested in

<sup>1</sup> The morphosyntactic analysis of aspect assumed in this paper differs from the one proposed by Pereltsvaig (2005). Under this analysis, some phenomena found in AR can indeed be explained by transfer from English.

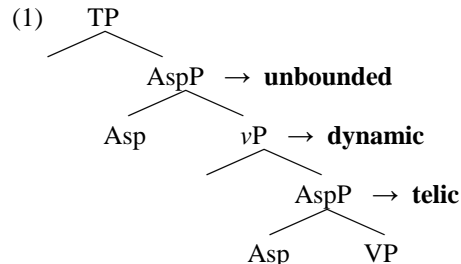
Russian. I will present the restriction that is responsible for this pattern later in this paper.

Native-like competence of Russian aspect implies knowledge of all three morphological forms, along with their syntactic structure. To pinpoint what exactly constitutes native speakers' syntactic knowledge of these verbs, we need to partake in a short excursion into recent research on the syntax of aspect.

### 3. Syntactic analysis of aspect

Recent research on aspect points to the existence of two types of aspect (Comrie 1976; Dahl 1985; Dowty 1979; Filip 1999; Krifka 1998; Pustejovsky 1991; Tenny 1992, Verkuyl 1993, Slabakova 2001, Travis 2010 among many others). On one hand, we have *situation* aspect – aspect that is concerned with inherent boundaries of events or the telic/atelic distinction. On the other hand, we have *viewpoint* aspect – aspect that is concerned with actual boundaries of events or the bounded/unbounded distinction (Verkuyl 1993, Depraetere 1995, Smith 1997, Slabakova 2001).

Following the insights of Hale and Keyser (1993), many researchers postulate a strong correlation between the semantics of event structure and the morphosyntactic structure of verbal predicates (Travis 2010, Slabakova 2001, Borer 2005, Ramchand 2008, Nossalik 2009). Thus, all currently existing syntactic analyses of aspect maintain that both types of aspect, situation and viewpoint, are encoded syntactically. While situation aspect is encoded by a vP-internal or simply *inner* aspect projection, viewpoint aspect is encoded by a vP-external or simply *outer* aspect projection, as shown in (1):

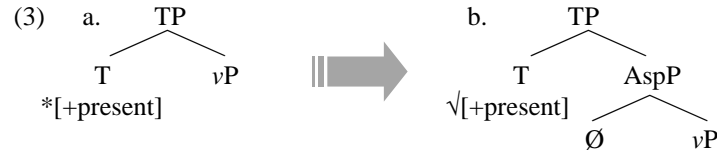


According to Borer (2005), only verbal predicates that encode *telic* events contain an inner AspP. In Nossalik (2011), I extensively argue that an outer AspP is only present in the syntactic structure of verbal predicates that encode *unbounded* events. This essentially means that while the inner AspP encodes *telicity*, the outer AspP encodes *unboundedness*.

A prominent property of dynamic verbs that lack an outer AspP is that these verbs are incompatible with the present tense. This is why in English non-progressive dynamic verbs cannot receive an ongoing-event interpretation – an interpretation where an event unfolds simultaneously with the speech time (Cowper 1998, Copley 2002). Hence, the sentences in (2) which contain simple tense forms of verbs *to play* and *to write* together with the adverbial *at this moment* are ungrammatical:

- (2) a. \**At this moment*, Mary plays piano. *activity*  
 b. \**At this moment*, Roxanne writes two letters. *accomplishment*

This being said, note that these forms are still attestable in English. They undergo a semantic shift, however. This shift results from *coercion* – an operation that alters the underlying morphosyntactic structure of a verbal predicate and, consequently, its aspectual value (Depraetere 1995, Rothstein 2004). In English, the illegitimate structure presented in (3a) is coerced into a structure that contains a phonologically null outer AspP as in (3b).



The outer AspP endows the present tense forms of English non-progressive dynamic verbs with a habitual reading (Rothstein 2004). This is why these verbs are compatible with a habitual adverbial, as shown below:

- (4) a. Mary *often* plays piano. *activity*  
 b. Roxanne *regularly* writes two letters. *accomplishment*

To conclude this section, note that apart from the two aspectual projections that we have discussed, the vP projection also plays an important role in aspectual composition. Only dynamic as opposed to stative verbs contain this projection (Travis 2010, Slabakova 2001).

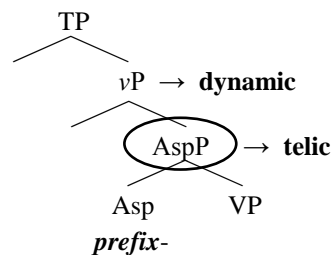
Having reviewed recent research on aspect, let us turn to the syntactic structure of Russian dynamic verbs.

#### 4. Syntactic structure of Russian verbs

##### 4.1. Syntactic structure of Russian perfective verbs

As we have already seen, Russian perfective verbs usually contain a prefix, e.g. *na-pisa-t'* 'to write<sub>PERF</sub>'. In this paper, I adopt a view according to which Russian preverbs, being telicity markers, occupy an inner AspP (Kipka 1990, Piñon 1995, Schoorlemmer 1995, Borer 2005, Nossalik 2009 among many others). This projection renders the verb both telic and perfective.<sup>2</sup>

##### (5) PERFECTIVE VERBS



<sup>2</sup> Apart from prefixes, Russian has a number of other perfective markers, e.g., the semelfactive suffix *-nu*. The existence of these other markers, however, does not refute the claim that preverbs are morphological markers of perfectivity.

Because Russian perfective verbs lack an outer AspP, they are incompatible with the present tense, similar to English non-progressive dynamic verbs. As expected, their present tense forms cannot appear with the adverbial *v nastojas'ij moment* 'at this moment' which imposes an ongoing-event interpretation, as demonstrated in (6):

- (6) \**V nastojas'ij moment* Maša **napišet** dva pis'ma.  
 At this moment Masha writes<sub>PERF</sub> two letters.  
 'Intended: At this moment, Masha is writing two letters.'

However in Russian, the illegitimate structure in (3a) is repaired differently from English. Instead of being coerced into a structure with an outer AspP, it is coerced into a structure in which the feature [+present] is replaced by the feature [+future], as in (7):

- (7) a.   b. 

Due to this coercion operation, the present tense forms of Russian perfective verbs receive a future tense interpretation. Therefore, they can coexist with a time adverbial that enforces a future tense reading, as shown in (8).

- (8) *Zavtra* Maša **napišet** dva pis'ma.  
 Tomorrow Masha writes<sub>PERF</sub> two letters.  
 'Tomorrow Masha will write two letters.'

Given that in Russian coercion does not produce a structure with a habitual interpretation as in English, the present tense forms of Russian perfective verbs are incompatible with the habitual reading. This is why sentences as in (9) containing a perfective verb alongside a habitual adverbial are ungrammatical in Russian.

- (9) \*Maša *regul'arno* **napišet** dva pis'ma.  
 Masha regularly writes<sub>PERF</sub> two letters.  
 'Intended: Masha regularly writes two letters.'

Since the present tense forms of Russian perfective verbs receive a future tense interpretation, perfective verbs do not allow for a so-called analytic future form – a form in which an infinitival verb is combined with a modal to signal a future reading, equivalent to the English form 'will + V'. Thus, a Russian counterpart of 'will write' presented in (10) is ungrammatical, since it contains the perfective verb *napisat'* 'to write' together with the modal *byť* 'will'.

- (10) \**Zavtra* Maša **budet napisat'** dva pis'ma.  
 Tomorrow Masha will writes<sub>PERF</sub> two letters.  
 'Intended: Tomorrow Masha will write two letters.'

Table 2 sums up behaviour of present tense forms of Russian perfective verbs that we have been discussing in this section.

Table 2 Russian PERF verbs

| Property                     | Russian perfectives |
|------------------------------|---------------------|
| <i>Ongoing-event reading</i> | *                   |
| <i>Habitual reading</i>      | *                   |
| <i>Future tense reading</i>  | √                   |
| <i>Analytic future form</i>  | *                   |

Having looked at the syntactic structure of Russian perfective verbs, we can now turn to Russian imperfective verbs.

#### 4.2. Syntactic structure of Russian imperfective verbs

As we have seen in section 2, Russian imperfective verbs come in two distinct morphological forms. While primary imperfectives contain no aspectual markers, secondary imperfectives contain two aspectual markers, i.e. an aspectual prefix and the suffix *-va*. Despite their morphological differences, these verbs behave in the same way with respect to four properties identified in the previous section.

Thus, the present tense forms of both primary and secondary imperfectives can receive an ongoing-event or habitual interpretation, as shown in (11) and (12) respectively:

- (11) a. *V nastojas'ij moment* Maša pišet pis'ma.  
At this moment Masha writes<sub>PI</sub> letters.  
'At this moment, Masha is writing letters.'
- b. *V nastojas'ij moment* Maša **podpisyvaet** svoi knigi.  
At this moment Masha signs<sub>SI</sub> self books.  
'At this moment, Masha is signing her books.'
- (12) a. Maša často pišet pis'ma.  
Masha often writes<sub>PI</sub> letters.  
'Masha often writes letters.'
- b. Maša vseгда **podpisyvaet** svoi knigi.  
Masha always signs<sub>SI</sub> self books.  
'Masha always signs her books.'

Imperfectives, however, cannot receive a future tense interpretation, as exemplified in (13). To express future, the infinitival form of an imperfective verb must combine with the modal *byť* 'will', as shown in (14). In other words, unlike perfective verbs, imperfective verbs have the analytical future form.

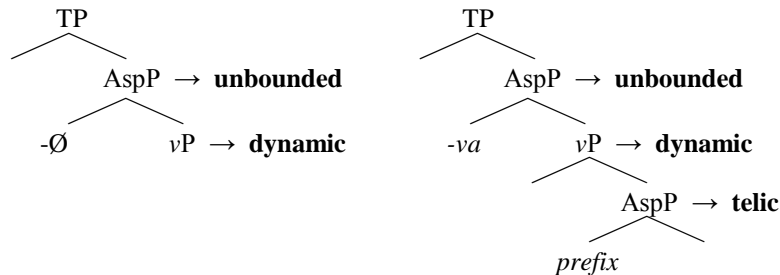
- (13) a. \**Zavtra* Maša pišet pis'ma.  
Tomorrow Masha writes<sub>PI</sub> letters.  
'Intended: Tomorrow Masha will write letters.'
- b. \**Zavtra* Maša **podpisyvaet** svoi knigi.  
Tomorrow Masha signs<sub>SI</sub> self books.  
'Intended: Tomorrow Masha will sign her books.'

- (14) a. *Zavtra* Maša **budet** pisat' pis'ma.  
 Tomorrow Masha will write<sub>PI</sub> letters.  
 'Tomorrow Masha will write letters.'
- b. *Zavtra* Maša **budet** podpisivat' svoi knigi.  
 Tomorrow Masha will sign<sub>SI</sub> self books.  
 'Tomorrow Masha will sign her books.'

The behaviour of imperfective verbs is closely related to their syntactic structure. The fact that the present tense forms of these verbs can receive a present tense and habitual interpretation suggests that they contain an outer AspP in their syntactic structure.<sup>3</sup> This projection makes them unbounded in time and, thus, compatible with both present and habitual. Moreover, because of this projection, the coercion in (7) does not apply. As a result, the present tense forms of imperfective verbs cannot receive a coerced future tense reading and must combine with the modal *byt'* 'will' to express future.

Despite the fact that both primary and secondary imperfectives contain an outer AspP, their syntactic structures differ in two important ways.

- (15) a. PRIMARY IMPERFECTIVES      b. SECONDARY IMPERFECTIVES



As can be seen in (15), only secondary imperfectives contains an inner AspP in their syntactic structure. Moreover, only secondary imperfectives contain the overt suffix  $-va$  in their outer AspP. The outer AspP of primary imperfectives is phonologically nil. Given these differences, we can deduce a syntactic restriction that concerns the suffix  $-va$ : this suffix can only attach to a telic base – a base that contains an inner AspP. Notably, this behavior of  $-va$  is different from that of English's aspectual suffix  $-ing$ , which can attach to both telic and atelic bases.<sup>4</sup>

Table 3 summarizes behavior of present tense forms of both Russian perfective and imperfective verbs.

<sup>3</sup> This claim does not hold for stative verbs. The structure of these verbs is beyond the scope of this paper.

<sup>4</sup> Another difference between  $-va$  and  $-ing$  is that, while the former can encode both ongoing and habitual events, the latter only encodes ongoing events. Recall that in English, habitual is associated with the  $\emptyset$ -morpheme occupying an outer AspP.

Table 3 Russian PERF verbs vs. Russian IMP verbs

| Property                     | Russian perfectives | Russian imperfective |
|------------------------------|---------------------|----------------------|
| <i>Ongoing-event reading</i> | *                   | √                    |
| <i>Habitual reading</i>      | *                   | √                    |
| <i>Future tense reading</i>  | √                   | *                    |
| <i>Analytic future form</i>  | *                   | √                    |

Keep in mind that in order to treat Russian verbs as in Table 3, one needs to have native-like competence of Russian morphosyntax. Apart from perfect knowledge of morphosyntax, he/she must possess a quite extensive lexical knowledge.<sup>5</sup> Let us see why this is so.

### 5. Lexical knowledge related to Russian aspect

In section 4.1, we have seen that Russian perfective verbs are typically obtained by the process of prefixation. This process is nevertheless highly idiosyncratic. Thus, Russian roots differ as to the amount of prefixes they can combine with. While some roots can combine only with one prefix, others can combine with up to 16 different prefixes (Borik 2002).

Roots that can combine with several different prefixes usually preserve their original meaning only with one of these prefixes. For instance, the root *pisa* ‘write’ keeps its meaning only with the prefix *na-*: *na-pisa-t* ‘to write<sub>PERF</sub>’ vs. *iz-pisa-t* ‘to write all over<sub>PERF</sub>’, *pod-pisa-t* ‘to sign<sub>PERF</sub>’, *za-pisa-t* ‘to write down<sub>PERF</sub>’, *o-pisa-t* ‘to describe<sub>PERF</sub>’, etc. As if this system weren’t complex enough, the prefix which preserves meaning varies from root to root. While the prefix *na-* preserves the meaning of the root *pisa-* ‘write’, it does not do so in the case of the root *čita-* ‘read’ or, indeed, in the case of many other roots. In the case of *čita-*, it is only the prefix *pro-* which preserves the meaning ‘read’.

The information concerning which roots can combine with which prefixes, and which combinations preserve or change the original meaning of the root is stored in the lexicon. It is very important to recognize that even verbs that have acquired a new meaning in the process of prefixation are derivational by nature in that they contain a prefix in their structure. Otherwise, these perfective verbs would be computed as lacking an inner AspP or, said differently, as non-perfective verbs. Given that perfective verbs behave differently from their imperfective counterparts, such a mistake in computation would be indeed a very grave one, leading to drastic consequences.<sup>6</sup> Hence, lexical knowledge is very important for proper computation of Russian perfective verbs.

What about Russian imperfective verbs? In the previous section, we have seen a syntactic constraint that conditions *-va* attachment: *-va* cannot attach to

<sup>5</sup> To properly use Russian aspect, one also needs to know under which pragmatic conditions imperfective verbs can exceptionally appear in bounded events (Schoorlemmer 1995). Since in this study I did not investigate exceptional uses of imperfective, I will not present these pragmatic conditions here.

<sup>6</sup> In my dissertation, I tested second language learners’ knowledge of Russian aspect. My results reveal that low and high intermediates often fail to recognize that Russian perfective verbs with idiosyncratic meanings contain a prefix. As a result, they mistakenly allow for these verbs to appear with ongoing-event or habitual adverbials, but not with future tense adverbials.



atelic stems. In reality, *-va* attachment is even more restricted in that *-va* cannot attach to all telic stems. For instance, as demonstrated in Table 1, it successfully attaches to the prefixed base *pod-pisa-* ‘sign’ yielding *pod-pisy-va-t’* ‘to sign<sub>SI</sub>’, but fails to attach to the prefixed base *na-pisa-* ‘write’.

In this paper I assume that the information of whether or not a given prefix-root combination can be further inflected with *-va* is encoded in the lexicon.<sup>7</sup> As any lexical information it requires extensive memorization on the part of speakers.

In conclusion, native-like use of Russian aspect presupposes native-like competence of Russian morphosyntactic structure related to aspect together with extensive lexical knowledge.

## 6. Experiment

The experiment described in this section was conducted with the purpose of determining whether attrition indeed affects linguistic competence. More specifically, I was interested to see whether it is true that attrition involves syntactic restructuring, as claimed by Pereltsvaig (2005). It was assumed that if this hypothesis is true, then Russian attriters should exhibit behaviour drastically different from that of monolingual Russian speakers not only in production, but also in comprehension. There is one obvious advantage of testing comprehension, as opposed to production. It allowed me to tease apart and test separately morphosyntactic and lexical properties related to Russian aspect. Thus, I obtained a more comprehensive view on which components of aspect are affected by attrition.

### 6.1. Participants

10 subjects participated in the experiment: 5 Russian-English bilinguals who immigrated to Canada after puberty and 5 Russian monolinguals. All bilingual speakers use English as their dominant language in their everyday life. Their use of Russian is very limited and has been so for the past 25 years or more. Because of this, they no longer sound like Russian native speakers.

I deliberately selected subjects who left Russia after puberty to ensure that they are only forgetters rather than both forgetters and incomplete acquirers. This should help us to determine whether attrition by itself indeed involves morphosyntactic restructuring and, thus, affects linguistic competence.<sup>8</sup>

### 6.2. Task

To test attriters’ comprehension, a computerized Grammaticality Judgment task was used. Participants were asked to indicate whether sentences presented to them, one at the time, were acceptable or not in Russian. They were specifically instructed to choose “don’t know” only when encountering unfamiliar vocabulary.

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<sup>7</sup> Given the time and space limitations, I cannot justify this assumption here. Readers who want to see why this assumption is valid are referred to Nossalik (2009).

<sup>8</sup> Note that it has been suggested in the literature that “pure” forgetters perform better than individuals who have not completely acquired Russian before immigration (Polinsky 1997, Zaretsky & Bar-Shalom 2008).

### 6.3. Stimuli

The test contained 250 stimuli: 200 test sentences and 50 distractors. Of the 200 test sentences, 30 contained present tense forms of primary imperfectives and 30 present tense forms of secondary imperfectives. These sentences tested whether or not attriters know that Russian dynamic imperfective verbs contain an outer AspP and, as such, are computed as unbounded in time and compatible with an ongoing or habitual, but not future, reading. This is why 10 of the PIs and 10 of the SIs appeared in ongoing contexts, as in (11), 10 in habitual contexts, as in (12), and 10 in future contexts, as in (13). 10 more PIs and 10 SIs occurred in their analytical future form, as in (14), and tested whether attriters know that Russian IMP verbs can assume this form.

Of the 60 PERF verbs that were used, 20 tested whether attriters know that Russian perfective verbs contain an inner AspP and, as such, are computed as telic, thus, incompatible with the present tense. For this reason, 20 of the PERF verbs occurred in an ongoing context, as in (6). Another 40 sentences tested whether attriters employ the Russian or English variant of coercion. Hence, 20 of these verbs appeared in a future tense context, as in (8) and 20 in a habitual context, as in (9). The last 20 PERFs tested whether attriters still remembered that Russian perfectives do not form the analytic future, as shown in (10).

Note that the PIs, PERFs and SIs all contained the same roots, e.g. *pisat'* 'to write<sub>PI</sub>' – *napisat'* 'to write<sub>PERF</sub>' – *podpisat'* 'to sign<sub>PERF</sub>' – *podpisyvat'* 'to sign<sub>SI</sub>'. One half of the PERF verbs contained a prefix that preserves the original meaning of the root, as *na-* in *napisat'* above. These verbs had PIs as their aspectual counterparts, e.g. *pisat'*. Another half of the PERFs contained an idiosyncratic prefix as *pod-* in *podpisat'*. These verbs formed aspectual pairs with corresponding SIs, e.g. *podpisyvat'*. The latter class of PERFs were used to test whether attriters can recognize that these verbs also contain a prefix and, hence, should exhibit behaviour similar to non-idiosyncratic PERFs.

The remaining 40 sentences contained verbs not attested in Russian. 20 of them tested whether attriters abide by the syntactic restriction which prohibits attachment of *-va* to atelic stems. In what follows, I will refer to these verbs as to \*PI-*va*. Another 20 sentences contained SI verbs not attested in Russian, i.e. \*SI. These sentences tested purely lexical knowledge, given that these verbs do not violate any morphosyntactic restriction. For consistency, non-attested \*PI-*va* and \*SI verbs were also used in four different contexts: ongoing, habitual, synthetic future and analytic future.

Table 4 summarizes grammaticality of different types of verbs in 4 contexts used: ongoing (ONGO), habitual (HAB), synthetic future (SYNFUT) and analytic future (ANFUT).

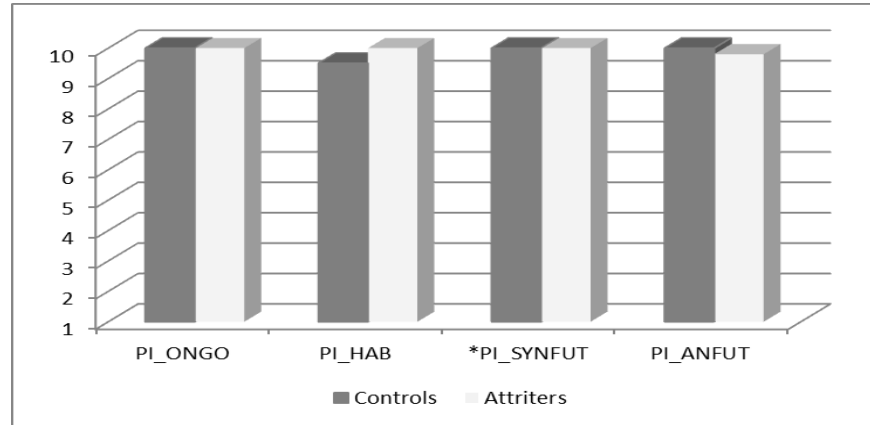
Table 4 Tested conditions

| Context | PI<br>(n = 10) | SI<br>(n = 10) | PERF<br>(n = 20) | *PI- <i>va</i><br>(n = 5) | *SI<br>(n = 5) |
|---------|----------------|----------------|------------------|---------------------------|----------------|
| ONGO    | √              | √              | *                | *                         | *              |
| HAB     | √              | √              | *                | *                         | *              |
| SYNFUT  | *              | *              | √                | *                         | *              |
| ANFUT   | √              | √              | *                | *                         | *              |

#### 6.4. Results

Figure 1 depicts performance of the participants with respect to the stimuli that contained PI verbs.

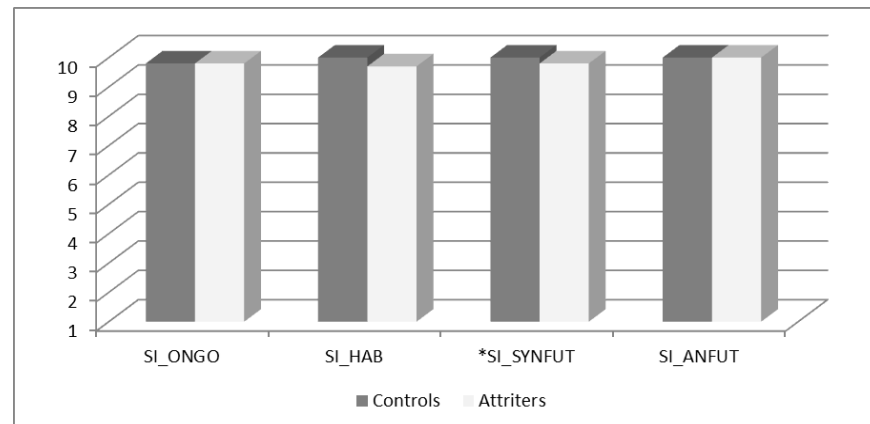
Figure 1 Group results: PI verbs, accuracy (out of 10)



As can be seen from this table, the attriters treat PI verbs indistinguishably from the controls. A two-way ANOVA confirms that there was no group effect ( $F = 1.8$ ;  $P = 0.217$ ), no condition effect ( $F = 6.6$ ;  $P = 0.015$ ), and no significant interaction between groups and conditions ( $F = 0.733$ ;  $P = 0.561$ ).

As illustrated in Figure 2, the attriters also exhibited native-like behavior with SIs.

Figure 2 Group results: SI verbs, accuracy (out of 10)

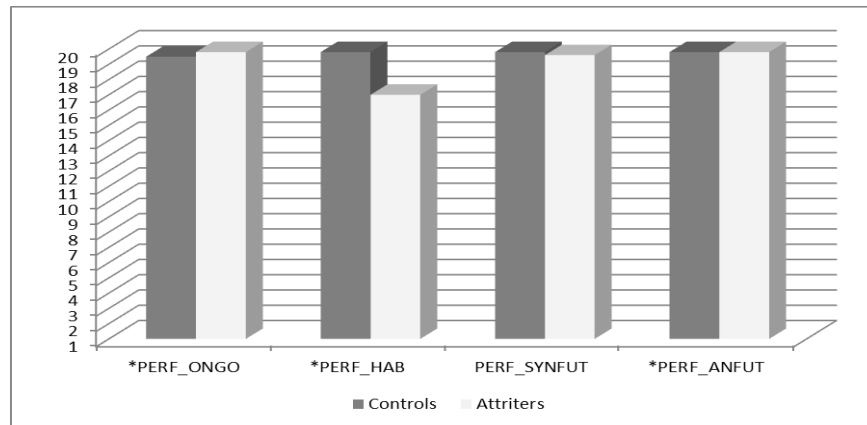


Hence, a two-way ANOVA found no significant differences between performances of the attriters and the controls ( $F = 1.09$ ;  $P = 0.327$ ) on all four

conditions ( $F = 0.610$ ;  $P = 0.627$ ). There was no significant interaction between groups and conditions ( $F = 0.369$ ;  $P = 0.777$ ).

Because the attriters treated the PERF verbs that contain an idiosyncratic prefix similarly to the PERF verbs that contain a non-idiosyncratic prefix, I collapsed together the results for these two classes of perfective verbs. The combined results can be viewed in Figure 3.

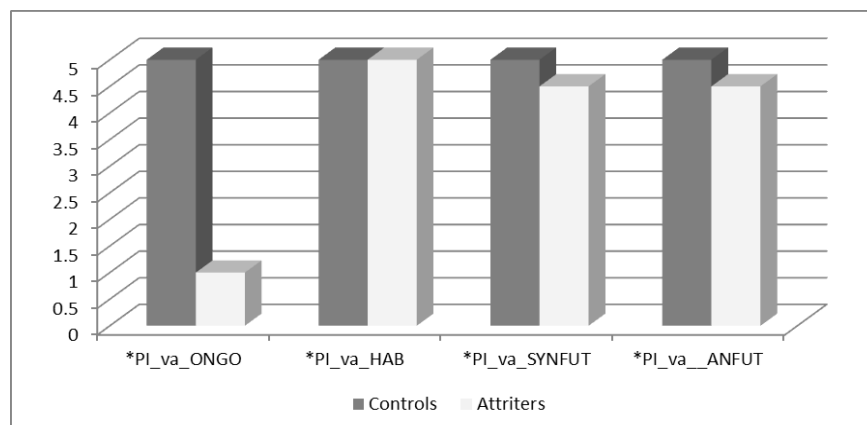
Figure 3 Group results: PERF verbs, accuracy (out of 20)



A two-way ANOVA revealed both a significant group effect ( $F = 28.252$ ,  $P = 0.001$ ) and a significant condition effect ( $F = 23.267$ ,  $P < 0.001$ ). The interaction between groups and conditions was also significant ( $F = 32.449$ ,  $P < 0.001$ ). As determined by Scheffe's post hoc test, only in habitual contexts did the behavior of the attriters diverge significantly from that of the controls.

Figure 4 reports results pertaining to the stimuli that contained verbs with illegitimate *-va* attachment.

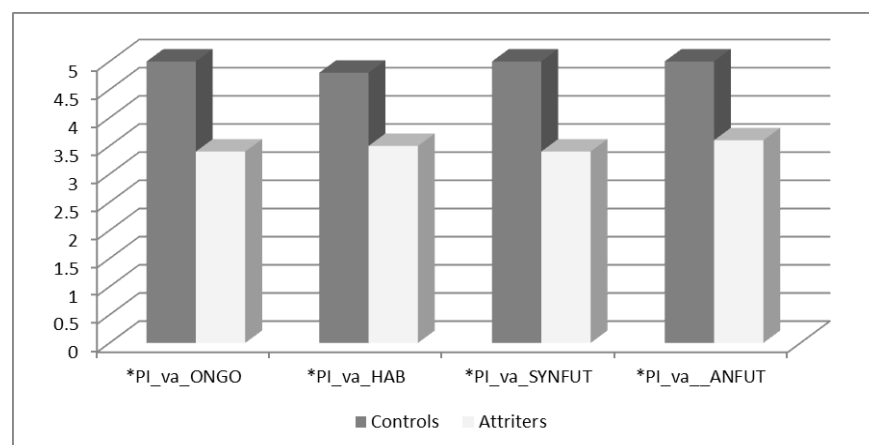
Figure 4 Group results: \*PI<sub>va</sub> verbs, accuracy (out of 5)



As can be seen from this table, the attriters often incorrectly accepted unattested \*PI-va verbs. A two-way ANOVA showed that their performance was significantly different from that of the controls ( $F = 92.593$ ;  $P < 0.001$ ). Moreover, it revealed that while the participants performed differently depending on the condition ( $F = 50.617$ ;  $P < 0.001$ ), not all of them did so ( $F = 50.617$ ;  $P < 0.001$ ). According to a Scheffe's post hoc test, while the attriters mistakenly judged \*PI-va verbs as grammatical, they did so only in ongoing context.

Lastly, consider Figure 5 which depicts the results for the stimuli containing unattested secondary imperfective verbs.

Figure 5 Group results: \*SI verbs, accuracy (out of 5)



With these verbs too, the performance of the attriters significantly diverged from that of controls ( $F = 57.541$ ;  $P < 0.001$ ). A two-way ANOVA, however, found no significant condition effect ( $F = 0.122$ ;  $P = 0.946$ ), or interaction between groups and conditions ( $F = 0.343$ ;  $P = 0.795$ ). This means that the attriters performed differently from the controls in all four conditions.

Having seen the results, let us now turn to their discussion.

## 7. Discussion

As revealed by the results, the attriters treated PIs and SIs similarly to monolingual Russian speakers. Their native-like performance suggests that they accurately compute these verbs as being unbounded in time. In other words, they recognize that these verbs contain an outer AspP – the projection responsible for unboundedness in dynamic verbs. Thus, we must conclude that attrition does not affect the outer AspP, contra Pereltsvaig (2005).<sup>9</sup>

<sup>9</sup> Consistently with Pereltsvaig's (2005) analysis, one may assume that attriters compute imperfective verbs as simply being atelic, i.e. as lacking both inner and outer aspect, and further argue that atelic verbs exhibit behaviour similar to unbounded verbs. He/she would need to explain, however, why dynamic verbs do not undergo coercion in (7). Or, even more problematically, where do attriters put *-va* in SIs?

As for the PERF verbs, the attriters did mistakenly allow for these verbs to occur in habitual contexts. Does this behavior imply that they no longer know that these verbs contain an inner AspP? Not necessarily. Recall that attriters still have an outer AspP. But why would attrition affect inner aspect first, given that it is outer aspect that should be more “vulnerable” to attrition? The outer AspP is both dependant on the inner AspP and is acquired much later by Russian children than the inner AspP (Kazanina & Phillips 2003). But if syntactic restructuring is not to blame for attriters’ errors, then how can we account for them? The non-native like behavior of the attriters can be explained by interference from English. While these subjects correctly coerce the present tense forms of PERF verbs into the structures with a future reading (as revealed by the performance in the PERF\_SYNFUT condition), they occasionally coerce these forms into the structures with a habitual reading, as they would in English.

Transfer from English can also explain why the attriters accepted illegitimate \*PI-*va* forms, but only in the ongoing context. In this scenario, they occasionally treat *-va* on a par with English *-ing*. As has been mentioned before, unlike *-va*, *-ing* can attach to atelic stems, but yields only an ongoing reading. This is precisely why attriters make errors only in the ongoing context.

What I found especially fascinating about the results of this study is that while the attriters produced only a marginal amount of errors when tested on purely morphosyntactic properties related to aspect, they did struggle with lexical properties. Although they were very successful at recognizing that even idiosyncratic PERF verbs contain a prefix, they were less so in recognizing secondary imperfectives that are not attested in Russian. It looks as if they have forgotten which among SIs are attested and which are not. Since we are dealing with memory capacity here, it is not surprising that there was individual variation as to how the attriters treated the unattested verbs, with even one of the attriters performing indistinguishably from the controls. This variation suggests that some individuals are more successful at retaining lexical information than the others.

## 8. Conclusion

In conclusion, the results of this study show that pure first language attrition only affects lexical but not morphosyntactic properties related to aspect. While attriters do make some mistakes in their computation of Russian aspect, these errors can be explained by transfer from their dominant English. These findings argue against Pereltsvaig’s (2005) claim that L1 attrition involves syntactic restructuring. On the bigger scale, they suggest that linguistic competence is not affected by L1 attrition.

There are different possibilities as to why the results of this study do not support findings by Pereltsvaig (2005) and to some extent Polinsky (1997, 2006). First, in this study I did not test all properties related to Russian aspect. Second, it might well be that production is affected by L1 attrition more severely than comprehension. Third, since subjects in Pereltsvaig’s and Polinsky’s studies immigrated to the US when they were much younger than the subjects tested in this study, it could be that they have never completely acquired Russian aspect to begin with.

The next step for this study would be to test production data of Russian attriters who moved to North America after puberty. Such a study would help clarify whether in such individuals production of aspect is more severely affected than its comprehension.

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