Русская глагольная префиксация: A Rebuttal

Verbal Prefixation in Russian: A Rebuttal

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ABSTRACT
Zaliznjak & Mikaèljan 2014 is a critique of the model of Russian aspect found in Janda 2012 and Janda et al. 2013. In this rebuttal I give a brief overview of my model of Russian aspect and then address the criticisms made by Zaliznjak & Mikaèljan. I begin by examining the four assumptions stated by Zaliznjak & Mikaèljan, which I find to be unnecessary and lacking in theoretical gounding. Their assumption that aspectual correlation is uniformly directed from perfective to imperfective is particularly problematic. I compare Zaliznjak & Mikaèljan's assumption with the single assumption my work is based on, namely that linguistic cognition is not fundamentally different from general cognition, and present the entailments of this assumption and what they mean for an investigation of Russian aspect. I then present four further problems with Zaliznjak & Mikaèljan's model of Russian aspect: the alleged transfer of meaning from perfective to imperfective, the criteria for identifying prototypical prefixed perfectives, their claim that overlap and emptiness can be equated, and their postulation of deprefixation.

Keywords: Russian, aspect, prefixes, suffixes, verb classifiers.

1. Introduction: A CLEAR Response

I offer this response to Zaliznjak & Mikaèljan 2014 on behalf of the CLEAR (Cognitive Linguistics: Empirical Approaches to Russian) research group, in particular those members who authored and co-authored relevant publications: Anna Endresen, Julia Kuznetsova, Olga Lyashevskaya, Anastasia Makarova, Tore Nesset, and Svetlana Sokolova.

I am not in the habit of publishing critiques of other scholars' work. My approach is instead to present the results of scientific studies, and compare those results with existing claims in the scholarly literature. In this case I have been asked to prepare a rebuttal, and I thank the Editor and Secretary of *Mundo Eslavo* for this opportunity.

I respect and appreciate the work of Zaliznjak & Mikaèljan, from which I continually draw inspiration and insights. My work has been enriched by discussions with them on many topics, for example the colloquial derivation of imperfectives from so-called "perfectiva tantum" (e.g., *уцелевать* < *уцелеть* 'survive'), aspectual triplets, and the Maslov criterion.

I am most grateful to be included in the circle of Russian scholars who pursue aspectology. The recognition of my work in this milieu is something that I do not take for granted. I agree that we are allies in the challenge to make sense of Russian aspect. Our perspectives differ somewhat, and that is healthy for academic discourse. Ultimately it is the community of scholars who will decide what data and arguments they find most compelling.

Zaliznjak & Mikaèljan make a number of valuable points, especially concerning gradience, context, and aspectual triplets. For example, they describe aspectual pairedness as a scalar phenomenon: "[р]азные префиксальные глаголы обладают этой способностью в разной степени" (Zaliznjak & Mikaèljan 2014: 21). I wholeheartedly agree. Gradience is

pervasive in the structure of linguistic categories in general, so it is logical that we should find gradience in Russian aspect. They also place important emphasis on the role of context in the behavior of aspectual pairs in Russian (Zaliznjak & Mikaèljan 2014: 24). Our research has found considerable empirical evidence for such effects. Zaliznjak & Mikaèljan (2014: 20, 30) point out that aspectual triplets play an important role in the Russian aspect system, and indeed the CLEAR group has found that most prefixal pairs do admit secondary imperfectives and in some cases these imperfectives are of higher frequency than the corresponding simplex imperfectives (see sections 2.2.5 and 4.2).

However, my task is to address points in which my perspective differs from that of Zaliznjak & Mikaèljan, so I will focus on those differences. In order to set the stage for this discussion, I will first give a brief overview of the CLEAR group's analysis of Russian aspect in section 2. Section 3 is devoted to a comparison of the assumptions and theoretical grounding of Zaliznjak & Mikaèljan vs. the CLEAR group. Section 4 poses three questions that challenge Zaliznjak & Mikaèljan. Conclusions are offered in section 5.

2. A CLEAR View of Russian Aspect

The view of Russian aspect stated here in abbreviated form is based on comprehensive empirical studies, to which I refer the reader for full details (Janda 2007, Janda 2012, Janda et al. 2013). I stress that these are not assumptions or postulations, but rather facts that have emerged from analysis of data (primarily from the Russian National Corpus at www.ruscopora.ru, henceforth RNC). The cluster model (section 2.1) provides a classification of Russian perfectives, and the terminology of that model is used in our work on the semantics of Russian verbal prefixes, which we suggest behave as a system of verb classifiers (section 2.2).

2.1 The Cluster Model

Janda 2007 examined a multiply stratified sample of 283 verb clusters containing over 2000 verbs and representing all morphological classes of verbs in Russian. On the basis of this study, we observe four main types of perfectives in Russian, distinguished primarily by their semantics:

Natural Perfectives (NPs), which are found in aspectual pairs, most often formed by prefixation as in *писать*/*написать* 'write', but note also examples like *давать*/*дать* 'give'. The lexical meaning of an NP is either the same or more limited than the lexical meaning of the corresponding simplex imperfective.

Specialized Perfectives (SPs) are formed when a prefix adds a distinct meaning, as in *переписать* 'rewrite'.

Complex Act Perfectives (CAPs) are formed when a prefix merely determines a temporal boundary for an action, as in *поплакать* 'cry for a while'.

Single Act Perfectives (SAPs) are formed when a prefix or suffix specifies that an action occurs just once, as in *сглупить* 'do one stupid thing', *чихнуть* 'sneeze once'.

The Exploring Emptiness database (http://emptyprefixes.uit.no/index.php) shows prefixed NPs and associated parameters (simplex imperfective, prefix, variation, morphological

and semantic class, frequency, definition and source). A sample list of aspectual clusters is available at: http://ansatte.uit.no/laura.janda/clusters/clusterfrontpage.html.

The four main types of perfectives show different patterns in their relationships to simplex imperfectives and secondary imperfectives. Only NPs typically have simplex imperfectives as their aspectual partners (as in *писать*/*написать* 'write'). SPs, CAPs, and SAPs typically do not form aspectual pairs with simplex imperfectives. SPs typically have aspectual partners marked by suffixation (as in *переписать/переписывать* 'rewrite'). NPs can also have associated secondary imperfectives (in which case we find "triplets" like *баюкать/убаюкать/убаюкивать*'lull to sleep'), though for some NPs such secondary imperfectives are rare and/or infelicitous.

Though these four types of perfectives differ in their prototypes, they overlap at the periphery. NPs and SPs are the two types that participate in aspectual pairs (*написать/писать*, *переписать/переписывать*). NPs and SPs form a continuum where NPs are least semantically differentiated from the corresponding imperfectives. For example *написать* 'write' is least semantically differentiated from *писать* 'write', as compared with the more differentiated *записать* 'write down, record', and *переписать* 'rewrite' is even more differentiated. There is also overlap between NPs and CAPs (*подумать* 'think/think for a while') and between NPs and SAPs (*крикнуть* 'shout (once)').

Aside from perfectiva and imperfectiva tantum, Russian verbs exist in clusters of aspectually related verbs. A partial example of such a cluster is *писать* 'write', *написать* 'write', *переписать* 'rewrite', *переписывать* 'rewrite', *попереписывать* 'spend some time rewriting', *дописать* 'finish writing', *дописывать* 'finish writing', *пописать* 'write for a while', etc. An aspectual relationship does not specify any directionality. Aspectual clusters of verbs give the Russian aspectual system its structure. Pairs are merely relatively salient parts of such networks. However, some clusters do not have pairs at all, cf. *стонать* 'moan' and its CAP neighbors *постонать* 'moan for a while', *застонать* 'begin moaning', etc. On the grounds that *захотеться* 'start wanting' is likewise an ingressive CAP related to *хотеться* 'want', we excluded this verb from our Exploring Emptiness database, though Zaliznjak & Mikaèljan (2014: 22) describe this relationship as an aspectual pair.

The cluster model is only one possible classification, and note that it is highly compatible with the classification reached by generativists who refer to the prefixes in NPs as "purely perfectivizing", as opposed to "lexical" prefixes in SPs and "superlexical" prefixes in CAPs (Svenonius 2004a–b, Ramchand 2004). Regardless of one's theoretical framework, it is useful to distinguish types of perfectives, and in principle either classification could be used to investigate the behavior of Russian prefixes as verb classifiers.

2.2 Russian Prefixes as Verb Classifiers

Janda 2012 and Janda et al. 2013 brought new perspectives to the debate over the status of "purely perfectivizing" prefixes by testing the alternative hypothesis that Russian aspectual prefixes constitute a verb classifier system parallel to numeral classifiers described for languages like Yucatec Maya (Lucy 2000). We tested this hypothesis by implementing extensive statistical analyses of all prefixes that form Natural Perfectives. While our work to date has focused on the "purely aspectual" prefixes, the conclusions are valid for and

extendable to all perfectivizing prefixes in Russian. This section gives an overview of the genesis of and supporting arguments for this hypothesis.

The motive behind the verb classifier hypothesis is the observation that, contrary to traditional assumptions, the so-called "purely perfectivizing" prefixes (the ones that form Natural Perfectives, cf. Janda 2007) are not semantically "empty", but instead reveal (with a few necessary gaps) the exact same system of meanings found among "lexical" prefixes. The idea that there might be an overlap between the meanings of "lexical" and "purely perfectivizing" prefixes has been around at least since Vey (1952, with reference to Czech) and van Schooneveld (1958), and more recently Majsak (2005: 298, 339-345) and Plungjan (2011: 413-416, 2012) have hinted that Russian might have verb classifiers.

The CLEAR group has presented five statistical analyses that chart the semantic, syntactic, and derivational behavior of the prefixes found in Natural Perfectives in Russian. All five studies took as their point of departure data from the RNC and the Exploring Emptiness database, and our data is available at this website: http://emptyprefixes.uit.no/methodology_eng.htm.

2.2.1 Radial Category Profiling

The first study focused on eleven of the prefixes that are less frequent, and thus more amenable to a comprehensive analysis: *в-*, *под-*, *пере-*, *при-*, *от-*, *в(о)з-*, *у-*, *из-*, *раз-*, *вы-*, *о(б)-*. This study began by mapping out the meanings these prefixes express when they are uncontroversially "lexical", in other words, when they are used to derive verbs that are not NPs. We sampled all SPs and CAPs with the eleven prefixes with ≥100 attestations in the RNC and established radial category networks for the meanings of each prefix. For example, among the meanings documented for the prefix *раз-* on the basis of 148 SPs, we find the following:

meaning of *раз-*	simplex imperfective verb	*раз*-prefixed SP
APART	*пилить* 'saw'	*распилить* 'saw apart'
CRUSH	*топтать* 'stamp one's feet'	*растоптать* 'trample, crush by stamping'
SPREAD	*катать* 'roll'	*раскатать* 'roll out (dough)'
SWELL	*дуть* 'blow'	*раздуть* 'inflate'
UN-	*грузить* 'load'	*разгрузить* 'unload'

Table 1. Some SPs and the meanings contributed by *раз-*

The next step examined the meanings of all the simplex imperfective verbs that form NPs with the same prefix and compared their meanings with the meanings of the prefix established in the first step. In the case of *раз-*, for example, this involved 73 simplex imperfectives and their NPs. These verbs form semantic groups, and each group directly corresponds to one of the meanings of the prefix *раз-* identified in Table 1: *пороть/распороть* 'tear apart' (APART), *давить/раздавить* 'crush' (CRUSH), *ветвиться/разветвиться* 'branch out' (SPREAD), *пухнуть/распухнуть* 'swell' (SWELL). Note, however, that there are no NPs attested for the UN- meaning of *раз-*. This is logical because UN- is a negator, whereas an NP per definition has the same meaning as its simplex imperfective partner verb. Since "x" and "not x" cannot have the same value, UN- cannot form NPs.

We find that all the meanings of simplex imperfectives that form NPs with the prefix *раз-* are compatible with meanings independently established for the prefix *раз-* on the basis of SPs. This finding is consistent for all eleven prefixes in the study. For two of the prefixes (*в-* and *у-*), the radial categories of the prefix and the simplex verbs are identical, showing complete overlap. Seven of the prefixes are like *раз-* in that the meanings of the simplex verbs cover all but one of the meanings of the prefix (*раз-*, *при-*, *от-*, *в(о)з-*, *о(б)-*, *вы-*, and *из-*). Two prefixes show overlap in a minority of meanings (*пере-* and *под-*). In all instances where overlap is incomplete, the prototypical meaning plus a coherent subset of neighboring meanings exhibit overlap. Thus overlap is both extensive and systematic. There is also a clear logic to the pattern of meanings excluded from overlap. The meanings where we do not find NPs are incompatible with simple perfectivization in that they involve negation, comparison, quantification, or some other special qualification.

2.2.2 Semantic Profiling

The second study focused on the remaining five highly frequent prefixes: *про-*, *на-*, *за-*, *с-*, *по-*. This study explored statistical relationships between the semantic tags independently assigned to NPs in the RNC and the prefixes. This data shows that each prefix has a unique semantic profile. For example, *про-* strongly prefers verbs with the "sound&speech" semantic tag, like *прогреметь* 'thunder', *за-* prefers verbs with the "impact" semantic tag, like *заасфальтировать* 'pave with asphalt', *по-* prefers verbs with the "change of state" semantic tag, as in *поголубеть* 'turn blue', while *на-* and *с-* have a more distributed set of preferences. A chi-square test showed that there is virtually zero chance that the differences we observe are a random epiphenomenon of sampling. The Cramer's V (effect size) value for our data indicates a large effect. We furthermore find that each prefix combines with verbs that form characteristic semantic groups. We conclude that each prefix has its own semantic "signature" according to which it combines with simplex verbs to form NPs.

Taken together, the first two studies indicate that the inventory of imperfective simplex verbs that can form NPs is effectively sorted by the prefixes according to their semantics. Essentially, each prefix selects the verbs that overlap with its meanings. Conversely we can also say that each simplex verb combines with the prefix that is most compatible with its meaning. The remaining three studies lend further support to the argument that each prefix behaves differently when forming NPs.

2.2.3 Constructional Profiling

The third study looks at *грузить* 'load', which forms three NPs with three different prefixes: *на-*, *за-*, and *по-*. Despite the fact that the prefixes are traditionally considered "empty" and therefore the three NPs should be identical in meaning, we show that there are striking differences in the use of these three supposedly identical verbs in grammatical constructions.

All four 'load' verbs (the simplex imperfective and its three prefixed NPs) can appear in both the "theme-object" construction, as in *грузить ящики на телегу* 'load the boxes onto the cart', and the "goal-object" construction, as in *грузить телегу ящиками* 'load the cart

with boxes' (Nichols 2008). A logistic regression model of 1920 examples extracted from the RNC analyzed the choice of construction. Three factors were examined: the choice of the prefix (none vs. *на-* vs. *за-* vs. *по-*), the voice of the verb (active vs. passive), and whether the example named both the theme and the goal or just one of them (full vs. reduced). The analysis showed that the choice of the prefix was the strongest factor (both as a main effect and in interaction with the voice of the verb). Both *грузить* and *погрузить* favor the theme-object construction, *нагрузить* favors the goal-object construction, while *загрузить* has a more balanced distribution. This study gives strong evidence for rejecting the traditional assumption of empty equivalence in favor of recognizing the meaning of the prefix as a prominent feature of NPs.

2.2.4 Prefix Variation

There are many verbs that, like *грузить* 'load', have more than one prefixed NP. We call this phenomenon prefix variation and show that it involves all 16 prefixes and 386 (27%) of the simplex verbs in Russian that form NPs. Furthermore, skewed patterns in the data and the groups of verbs that engage in prefix variation give strong evidence that the meanings of the prefixes are the key determining factor motivating prefix variation. Some prefix combinations are very common (like *по-/с-*, as in *повалить/свалить* 'topple'), others are rare (like *о(б)-/про-* in *отрезветь/протрезветь* 'become sober'), while others are unattested (like *в-/из-*). The common combinations are motivated by possible overlaps and complementary relationships in the meanings of the prefixes, while the unattested combinations are ruled out by incompatibilities.

2.2.5 Aspectual Triplets

Whereas SPs typically form secondary imperfectives, it was long assumed that NPs do not, since under the traditional account such derived verbs, which create aspectual "triplets", would be unnecessary. The logic of this assumption is that if you have a simplex verb that means 'do x [imperfective]' and you add an "empty" prefix to form an NP, you get a verb that means 'do x [perfective]'. There is then no need to derive a secondary imperfective which would mean 'do x [imperfective]' and thus be the equivalent of the simplex verb. However, despite these expectations, scholars have reported finding such secondary imperfectives: Xrakovskij (2005) lists three triplets, Jasai (2001) lists thirteen, and Apresjan (1995) offers forty triplets. Zaliznjak & Mikaelian (2010) claim that there are thirty-nine triplets based on all the pairs listed in Ožegov & Švedova (2001), Veyrenc (1980) presents a list of 190 triplets.

We conducted a comprehensive search for aspectual triplets by forming hypothetical secondary imperfectives for all 1981 NPs listed in the Exploring Emptiness database and searching for them in both the RNC and the Google search engine, where we found attestations for 733 (37%) and 1536 (77%) of them respectively. Furthermore, many of these secondary imperfectives are attested in hundreds or even thousands of examples. A statistical study of the relative frequency of simplex imperfective vs. secondary imperfective for a sample of aspectual triplets shows striking differences: in some triplets the simplex imperfective is strongly preferred, in some the secondary imperfective predominates, and for

some there is a more balanced competition between the two forms. Crucially, the patterns we find clearly reflect the meanings of the prefixes, again supporting our assertion that they are not semantically "empty".

2.2.6 Summary of Statistical Studies

In short, there is a lot of evidence that the prefixes in NPs do not function as empty formal markers, but instead express meaning. Different prefixes exhibit different behaviors in relation to the simplex verbs they combine with, the grammatical constructions they appear in, and patterns of morphological derivation. All of these behaviors are motivated by the different meanings that the prefixes express.

2.2.7 Parallels between Russian Prefixes and Numeral Classifiers

In Janda et al. 2013 we show that Russian prefixes qualify as a classifier system according to the criteria of McGregor (2002: 16-22) and Gerner (2009: 708). Table 2 offers a series of parallels we observe between the prefixes that form NPs in Russian and sortal numeral classifiers.

sortal numeral classifiers	prefixes in Russian NPs
unmodified nouns refer to unformed substances	unmodified imperfective verbs refer to unbounded states and activities
nouns modified by classifiers refer to discrete objects	verbs modified by prefixes refer to discrete events
classifiers associated with quantification by numerals	prefixes associated with quantification by perfective aspect
classifiers often describe shape of object	prefixes often describe shape of event
classifiers sort the nouns into groups	prefixes sort the verbs into groups
some nouns can have more than one classifier	some verbs can have more than one prefix
meaning of classifiers overlaps with default type of object	meaning of prefixes overlaps with default type of event
initially considered by linguists to be semantically empty formal markers	traditionally considered to be semantically empty formal markers

Table 2. Comparison of numeral classifiers with prefixes in Russian NPs

Concerning the first two rows in Table 2, Janda (2004) showed that imperfective verbs in Russian behave like nouns that refer to substances, while perfective verbs behave like nouns that refer to objects. The identification of Russian aspect with quantification goes back at least as far as Jakobson (1957/1971: 136). The descriptions of Russian prefixes found in the remaining rows of the table are drawn from the five studies described above.

2.2.8 Extension of the Verb Classifier Hypothesis

We take the status of the "purely perfectivizing" prefixes in Russian beyond the realm of polemical debate by bringing extensive statistical data to make a compelling case that these

prefixes are not semantically empty formal markers. The comparison with classifiers offers a new way to interpret the role of Russian prefixes and opens up opportunities for typological comparisons.

In Janda 2012 and Janda et al. 2013 we limited our analysis to the "purely perfectivizing" prefixes in Russian because our goal was to prove that these prefixes are not semantically "empty". However, it is entirely reasonable and logical to extend this hypothesis in three directions: 1) to include all other types of perfectives (SPs, CAPs, and SAPs), 2) to draw parallels with both sortal and mensural numeral classifiers, and 3) to make comparisons across the Slavic languages. This is the topic of forthcoming work of the CLEAR group.

3. **Assumptions and Theoretical Grounding**

All scientific argument must proceed from a set of assumptions. We strive to use as few and as general assumptions as possible (Occam's razor) and to make sure that our assumptions are theoretically grounded.

Zaliznjak & Mikaèljan (2014) make some highly specific assumptions that are probably unnecessary, and no clear theoretical motives are invoked. By contrast, the CLEAR group restricts itself to a minimal assumption concerning the general nature of linguistic cognition, an assumption motivated by the theoretical framework of cognitive linguistics (Janda 2015, Langacker 2008).

3.1 Zaliznjak & Mikaèljan's Assumptions

Here I take up the four assumptions stated by Zaliznjak & Mikaèljan (2014) in the order they present them, first citing their original text in each case.

3.1.1 The Status of Pairedness

"Русская аспектуальная система устроена как бинарная оппозиция совершенного и несовершенного вида, и ее понимание невозможно без центрального для системы понятия видовой пары."

While the opposition between perfective and imperfective is well motivated, the status of the aspectual pair is possibly overstated here. It is a trivial fact that there is a binary opposition between perfective and imperfective in Russian, but this opposition does not necessarily entail that there must be verb pairs at all. There are certainly some aspectual relationships that are semantically closer and more salient than others (for example, the relationships in *писать/написать* and *переписывать/переписать* are arguably closer than in *писать/записать* or *писать/переписать*). The Russian aspectual system comprises many kinds of aspectual relationships. The relationships that are traditionally labeled as pairs are part of a bigger phenomenon. The aspectual cluster gives a richer account of Russian aspect and a larger perspective on how it functions.

3.1.2 The Maslov Criterion

"Тождество лексического значения как обязательное условие видовой

коррелятивности может быть установлено только на основании тех контекстов, где глагол несов. вида обозначает то же событие, что и тот глагол сов. вида, который он заменяет (критерий Маслова)."

While the Maslov criterion has led to significant progress in the study of Russian aspect, this criterion has also come under serious criticism in recent years, a fact that Zaliznjak & Mikaèljan themselves acknowledge. I will not recapitulate the debate surrounding the Maslov criterion here; instead I refer the reader to Kuznetsova 2012 and merely list the main points. The Maslov criterion both overspecifies the relationship between paired verbs (excluding pairs almost everyone would agree on) and underspecifies it (including "pairs" that no one would list in a dictionary). Different diagnostics suggested by the Maslov criterion (e.g., substitution of imperfective under negation in an imperative vs. in the use of the historical present vs. conative use, etc.) yield different pairs (Maslov 1948, Čertkova 1996: 112). Even linguists who specialize in Russian aspectology cannot agree on how to apply the Maslov criterion (Čertkova et al. 1997, Gorbova 2011), and the Maslov criterion is fairly impoverished in the way it represents the imperfective aspect (focusing on historical present, habitual, imperative and conative uses, ignoring others such as durative, on-going, processual, gnomic, general-factual, etc.).

Theoretically the Maslov criterion is a structuralist postulate akin to the neutralization of distinctive features in certain contexts in phonology. While the community of linguists has learned a lot from structuralism, we have also moved on. Today the postulates of structuralists are better understood as tendencies rather than as absolute exceptionless rules. I regard Maslov's contribution as an observation of a correlation that is common, but does not constitute a necessary criterion for identifying an aspectual pair. On theoretical and empirical grounds, I reject the notion that linguistic categories are defined in terms of absolute criteria (see section 3.2.1). Zaliznjak & Mikaèljan (2014: 27) themselves acknowledge this, since their rules that ideal NPs have only one prefix and avoid formation of secondary imperfectives admit exceptions. However, a crucial difference between the CLEAR approach and Zaliznjak & Mikaèljan's work is that we actually measure the deviations from ideal/prototypical behavior and submit them to statistical tests so that we can determine which deviations are significant and meaningful. For example, Zaliznjak & Mikaèljan (2014: 23) are implicitly relying on the relative frequency of constructions when they state that *сообразить/соображать* constitutes a pair only in metaphorical meanings. But because they do not measure this effect, their insight remains subjective and appears arbitrary (why do they accept this pair in metaphorical meanings but not in others, if both types pass the Maslov test?).

Zaliznjak & Mikaèljan try to rescue the Maslov criterion by modifying it somewhat, namely by allowing it a degree of gradience. This is certainly a valiant effort in the right direction, but of course once we make way for gradience, we cannot insist on an absolute criterion; instead we need to make use of statistical analysis of tendencies.

Note that the Maslov criterion has an inherent directional bias, since it starts from a perfective verb and tests the possibility of replacing it with an imperfective verb. This directionality apparently underlies the remaining two assumptions.

3.1.3 The Directionality of Aspectual Correlation

"Аспектуальная корреляция для префиксальных видовых пар, так же, как и для суффиксальных, устанавливается в направлении от совершенного вида к несовершенному."

This is the strongest and most unnecessary assumption made by Zaliznjak & Mikaèljan. Why should perfective aspect have such a privileged status? Why should the relationship between perfective and imperfective have a single uniform direction? Indeed, why should it have any direction at all? Where does this directionality come from: the history of the language, the mind of the speaker? The aspectual cluster model (Janda 2007) does not presuppose any directionality in aspectual relations. Aspectually related verbs are simply neighbors in a cluster. One verb in a cluster might be more strongly represented in language use, making it more salient and seemingly basic, but there is no need to assume that any one type of verb must be privileged in all clusters. Russian morphological derivation of course goes in both directions, adding affixes both to derive perfectives from imperfectives, and to derive imperfectives from perfectives.

Psycholinguistic evidence does not support a privileged status for the perfective. Speech errors give no evidence that either aspect is more basic in Russian: "говорить о наличии в русском языке какой-то одной базовой формы, строго противопоставленной всем остальным, представляется затруднительным" (Rusakova & Saj 2008: 207). Statistically significant results from a psycholinguistic study suggest that the imperfective is more basic in the mind of the speaker: "формы НСВ могут представлять в ментальном лексиконе формы обоих видов (т.е. служить в качестве базовой формы в надвидовой гиперпарадигме), в то время как обратное кажется менее вероятным" (Rusakova & Saj 2008: 212-213).

Zaliznjak & Mikaèljan reveal a rigid outdated attitude by adopting a strictly source-oriented model in which imperfectives are always aspectually and functionally derived from perfectives. Bybee & Slobin (1982, see also Bybee 2001: 126) have shown that languages do not rely on exclusively source-oriented schemas, but also use product-oriented schemas, which are "generalisations over non-basic forms rather than generalisations about the relation of a non-basic form to some underlying stem or base form". In other words, there is no need to postulate unidirectional derivations in language. Indeed, even if there was some advantage to postulating a uniform source-oriented derivation, the facts of Russian mitigate against this direction in the case of prefixal NPs since morphologically prefixes are added to base imperfectives.

Zaliznjak & Mikaèljan further back themselves into a logical corner when they elaborate on the directions of the morphological and functional processes: "Особое место префиксальных видовых пар в русской аспектуальной системе определяется тем, что здесь направление реальной морфологической производности и функциональной аспектуальной деривации противоположны, и это обстоятельство является ключевым." Let's presume, for the sake of the argument, that Zaliznjak & Mikaèljan are perfectly justified in making this claim. We can imagine two scenarios, one narrow (valid only for NPs), and one broad (for all types of perfectives). Let's look at each scenario in turn.

In the narrow scenario, the opposing directions are postulated only for NPs. Presumably

for SPs like *вписать* 'insert', *приписать* 'ascribe', *описать* 'describe', *переписать* 'rewrite', and the like, morphological derivation and function (meaning) go in the same direction, since it is the prefix that is adding the new meaning to the perfective verbs. We see the same situation with CAPs like *постонать* 'moan for a while' and SAPs like *сглупить* 'do one stupid thing'. This means that for some prefixed perfectives (SPs, CAPs, SAPs) the meaning goes in the same direction as the morphology, but for others (NPs) the two processes go in opposite directions. How does a verb know whether it is an NP as opposed to an SP, CAP, or SAP? How does the verb know when to make its meaning switch directions? Given the fact that NPs constitute a radial category with some more prototypical examples and some less prototypical examples, finding the place where the meaning switches directions would be hard since we would be forced to draw arbitrary boundaries. For example, in some contexts (like *Запишите мой телефон* 'Write down my telephone number') one could argue that *записать* 'write (down)' comes very close to the meaning of an NP. Does it switch the direction of its semantics only in this context? Or take the prefix *по-*, which forms both NPs like *погрузить* 'load', *построить* 'build' and CAPs (delimitatives) like *постонать* 'moan for a while'. There is a zone of overlap where there are verbs that can be interpreted both as NPs and as CAPs, as in *подумать* 'think/think for a while'. Do such verbs change the direction of their semantics when they are NPs? What is the mechanism that causes this change of direction? There is arguably some overlap also in the relationship between NPs and SAPs since for some verbs we find near-synonymy, as in *крикнуть* 'yell (once)', which competes with *прокричать* as the NP for *кричать* 'yell'. Again, how do we know when verbs have their morphology and functional relationships aligned, or when they are going in opposite directions? And what happens when new NPs emerge? For example, in colloquial Russian we find NPs such as *спечь* instead of *испечь* 'bake', *заценить* instead of *оценить* 'evaluate'. How does the semantics of such verbs get turned around when they are coined as NPs?

In the broad scenario, the meaning always goes in the same direction, so any prefixed perfective verb is always imposing its meaning on the imperfective partner. In this scenario, the perfective verb doesn't need to know anything, but the imperfective base verb still faces a challenge: how does it know from which perfective it is receiving a transfer of meaning? This is tricky even when we limit ourselves to NPs, as in cases like *грузить* 'load' with its three prefixed perfectives (see section 2.2.3). Is the imperfective base verb always used with one particular NP in mind in a given context? Or are we forced to posit several lexemes, one for each NP (*грузить*$_{на}$, *грузить*$_{по}$, *грузить*$_{за}$)? Both of these are unattractive options.

None of these problems arise if we empirically investigate the observed aspectual relations among verbs in a cluster without imposing any directionality on their relationships a priori.

3.1.4 The Status of Morphological Imperfectivization

"Морфологическая имперфективация – основной механизм установления видовой корреляции; ядро русской аспектуальной системы составляют суффиксальные видовые пары."

Historically a variety of prefixes and suffixes have co-evolved to do the job of marking

aspect in Russian verbs. There is no a priori reason to consider some of these morphemes more "basic" than others. The synchronic data also points in various directions. There are approximately ten times more aspectual pairs formed by suffixation (19,208) than by prefixation (1,981; see Janda & Lyashevskaya 2011: 727-728). So suffixation predominates in terms of type frequency. However, the median frequency of an NP (formed by prefixation) is of ten times higher frequency (107) than the median frequency (9.7) of an SP (that forms its imperfective by suffixation) (Kuznetsova 2010). So prefixation is stronger in terms of token frequency. In other words, the NPs that form prefixal aspectual pairs are typically very frequent verbs, usually more frequent than the SPs that form suffixal aspectual pairs. When we look at the distribution of nearly 6 million grammatical forms in pairs formed by prefixation vs. pairs formed by suffixation in the Russian National Corpus, we find no reportable difference (Janda & Lyashevskaya 2011). So on this measure prefixes and suffixes come out even.

One can argue on morphological grounds that aspectual suffixation is a less complex and less constrained process than prefixation. The three imperfectivizing suffixes *(-а(й)*, *-ва(й)*, *-и/ыва(й)*) arguably behave as near-allomorphs since their distribution is largely determined by the morphological class of the verb with relatively little overlap. The *-ва(й)* variant is observed in syllabic resonant stems (*одеть/одевать* 'dress') and *-е(й)* stems (*успеть/успевать* 'succeed'). The *-а(й)* variant is observed in obstruent stems (*перепечь/перепекать* 'overbake'), "disappearing" *-ну* stems (*привыкнуть/привыкать* 'get used to'), and non-syllabic stems (*пожать/пожимать* 'press'). The *-и/ыва(й)* variant is observed in all remaining types of stems. Additionally, *-и* stem verbs can take both the *-а(й)* and the *-и/ыва(й)* variants (*оставить/оставлять* 'leave', *спросить/спрашивать* 'ask'), and *-е* stem verbs can use all three variants (*заболеть/заболевать* 'start to hurt', *сгореть/сгорать* 'burn down', *осмотреть/осматривать* 'inspect'; cf. Townsend 1975: 137-140). And sometimes a single verb will have more than one suffixed imperfective (as in *заготовить* 'stockpile', with both *заготовлять* and *заготавливать*). There is no morphological constraint preventing the derivation of a suffixed imperfective from any prefixed (or *-ну* suffixed) perfective. In this sense, the suffixes are straightforward and "universal", and Gorbova (2015) has argued that they play a dominant role in the Russian aspectual system.

Zaliznjak & Mikaèljan's fourth assumption captures a real relationship between prefixes and suffixes, but again overstates a trend as an absolute principle. As a result, Zaliznjak & Mikaèljan try to force prefixes to conform to suffixes by postulating deprefixation (see section 4.4).

3.2 The CLEAR Assumption

As the title of our research group suggests, CLEAR's investigations are framed by the theory of cognitive linguistics. Cognitive linguistics makes only one assumption, namely that linguistic cognition is not fundamentally different from general cognition. This entails that all linguistic phenomena should be explained in terms of general cognitive mechanisms that have been independently established. This assumption has three main corollaries concerning the structure of categories, the role of meaning, and the nature of linguistic evidence. Each of these corollaries is taken up in turn in the following three sections.

3.2.1 The Structure of Categories

Aristotelian categories are defined by necessary and sufficient features and crisp boundaries between items that do vs. do not have these features. Such categories are useful in certain kinds of formal systems. However, categorization in human cognition doesn't work that way. Research in psychology shows that human beings instead use categories with a radial structure motivated by relationships to a prototype or central exemplar (Rosch 1973a-b, 1978).

Given that linguistic cognition is part of general human cognition, this means that linguistic categories have the same radial structure. This structure has been established for both predominantly lexical and predominantly grammatical linguistic categories. As regards Russian, for example, these include categories such as near-synonyms (Divjak 2010), case (Janda & Clancy 2002), prefixes (Janda et al. 2013), and aspect (Janda 2004). Zaliznjak & Mikaèljan are certainly correct in claiming that some prefixed perfectives are better examples of paired perfectives than others (though their identification of prototypical NPs presents some problems; see section 4.2).

3.2.2 The Role of Meaning

From the perspective of cognitive linguistics, meaning plays a central role in all linguistic phenomena. A language consists of form-meaning units at various levels of complexity, also known as "symbolic assemblies" (Langacker 2008: 5) or "constructions" (Goldberg 1995, 2006). Crucially, all such units have both a form and a meaning. As a result, cognitive linguists posit neither forms without meanings (cf. Langacker's "content requirement" 2008: 24-26), nor meanings without forms. For this reason, we do not expect that any linguistic units are semantically empty, and this can be tested empirically. We return to this issue in connection with Russian "пустые приставки"/"empty prefixes" in section 4.3.

3.2.3 A Usage-based Approach

Cognitive linguistics is a usage-based model of language. This means that knowledge of a language, both for speakers and linguists, is built up from the observation of actual usage events. The object of study for linguists is these events, rather than some abstract unobservable competence. Generalizations over usage events structure grammar, not absolute rules and postulates.

3.2.4 What the CLEAR Assumption Means

Each investigation undertaken by the CLEAR group starts from one or more research questions that combine theoretical and descriptive aims. The CLEAR research questions relevant to this rebuttal are: 1) "What is the structure of the Russian aspectual system?", and 2) "What is the role of prefixes in that system?" Zaliznjak & Mikaèljan focus on the question: "What is the nature of the aspectual pair in Russian?" Note that the questions posed by

the CLEAR group are of a more general nature, unconstrained by specific assumptions and potentially more relevant to practical applications such as language learning and processing.

The work of the CLEAR group rests on the single assumption that linguistic cognition is facilitated by the same capacities as general human cognition. Because cognitive linguistics is a usage-based model of language, our task is to collect data and search for patterns in that data, often with the help of statistical models. Our empirical methods have enabled us to identify aspectual clusters, the four main types of perfectives, and the various effects of the meanings of prefixes described in section 2. In all of our investigations we have gathered as much data as possible (ranging from hundreds to millions of examples), and reported statistically significant results and effect sizes where relevant. Numbers do matter. Zaliznjak & Mikaèljan (2014: 28) mention, for example, that the formation of certain secondary imperfectives is rare ("редко"), but they have not measured this phenomenon or explored the statistical structure in the data. The CLEAR group has done just that, both for this phenomenon (see section 2.2.5) and for many others.

What emerges from the collective efforts of the CLEAR group is the model described in brief in section 2. Comparison of our data with descriptions of languages with verb classifier systems yields compelling parallels. These parallels motivate our hypothesis that Russian has a verb classifier system, and this hypothesis is gaining acceptance also among Russian linguists (Gorbova 2015).

4. **Queries**

Zaliznjak & Mikaèljan make a number of claims that raise further questions. These include the semantic relationship between verbs in a prefixal pair, the identification of the prototype for NPs, the status of the so-called "пустые приставки"/"empty prefixes", and the postulation of deprefixation. I call each of these claims into question in the following four subsections.

4.1 The Transfer of Meaning from Perfective to Imperfective

Zaliznjak & Mikaèljan make the following claim about the semantic relationship between an NP and its base imperfective: "Русские префиксальные глаголы образуют префиксальную пару в той мере, в какой они способны транслировать свое значение исходному простому имперфективу." This is a strong and unusual claim. Why should such a transfer of meaning take place and what independent evidence do we have for such a transfer? What would be the mechanism for such a transfer? Is there any precedent for postulating such a transfer? Do we know of any other examples in Russian or in any other language where such a semantic transfer takes place? We do observe a semantic relationship between the verbs in an aspectual pair. What further insight do we gain by modeling this relationship as a directional transfer? Does Zaliznjak & Mikaèljan's model of this relationship as a transfer reduce our ability to understand the true complexity of this relationship rather than enhancing it? And if the meaning of the perfective is more specific than that of the imperfective, as Zaliznjak & Mikaèljan (2014: 21) correctly observe, how does the imperfective get a broader meaning if its meaning is transferred from the perfective?

4.2 Which Natural Perfectives are Prototypical?

Zaliznjak & Mikaèljan use the formation of secondary imperfectives in aspectual triplets as a diagnostic for determining whether aspectual pairs are relatively prototypical vs. peripheral. They claim that prototypical NPs do not form secondary imperfectives and therefore that the most prototypical NPs are atelic verbs such as *увидеть* 'see', *побледнеть* 'turn pale' (Zaliznjak & Mikaèljan 2014: 19).

CLEAR's work on aspectual triplets shows that their formation cannot be used as a simple diagnostic, and it appears that Zaliznjak & Mikaèljan agree (2014: 21). It is not possible to sort prefixed perfectives into two discrete groups, one that forms secondary imperfectives and one that does not. There is no morphological restriction on the formation of secondary imperfectives in Russian (see section 3.1.4), and the observation of secondary imperfectives seems to depend largely on the size of your corpus. Furthermore, the frequency of secondary imperfectives in triplets also varies: relative to the base imperfective, the secondary imperfective in a triplet can account for <1% of imperfectives (when the base imperfective accounts for >99%, as in the case of *выругивать* as opposed to *ругать* 'curse'), or the secondary imperfective can account for >99% of use (with the base accounting for <1%, as in the case of *замолкать* as opposed to *молкнуть* 'fall silent'), or the distribution can fall anywhere between these two extremes, including a very even distribution (as in the case of *убаюкивать* as opposed to *баюкать* 'lull to sleep'). There may indeed be some relationship between the formation of secondary imperfectives and the prototypicality of NPs, but this relationship is likely to be complex and will require more research to establish.

Furthermore, the claim that atelic perfectives are prototypical NPs is counterintuitive and note that Zaliznjak & Mikaèljan (2014: 22) contradict themselves on this point elsewhere in their article when they state that *сделать*'make, do' (a telic verb) is a prototypical NP. They do so on the semantic grounds that the prefix in *сделать* engenders a minimal semantic shift. This argument is probably more sound (see section 2).

4.3 Can Overlap and Emptiness be Equated?

Zaliznjak & Mikaèljan claim that there is no difference between overlap and semantic emptiness: "это спор о словах, а не о сути явления, т.е. гипотеза «семантической пустоты» приставки (emptiness hypothesis) и гипотеза «наложения» значений (overlap hypothesis) – это одна и та же гипотеза". While the effect might seem to be the same, namely that a prefixed NP shares the lexical meaning of the base imperfective, from the perspective of cognitive linguistics it is a mistake to claim that emptiness and overlap are identical situations. Semantic emptiness violates the content requirement (see section 3.2.2) since it presumes the existence of forms without meanings. However, redundancy is pervasive in language and it is frequently the case that two or more forms overlap conceptually (Langacker 2008: 187-188). A common example of redundancy in language is agreement phenomena, and in essence our verb classifier hypothesis suggests that the base verb and the prefix in an NP agree semantically.

Overlap and semantic emptiness are not the same. CLEAR has argued this case in great

detail in Janda et al. 2013. If the prefixes in NPs were empty, that would mean that they have the same zero value and we could not distinguish among them in any systematic way. Instead, the prefixes in NPs overlap in meaning with the verbs they associate with, leading to the robust patterns characteristic of classifier systems. Zaliznjak & Mikaèljan (2014: 25) criticize the overlap hypothesis on the grounds that we cannot always predict precisely which prefix will be associated with a given verb, but it does mean that there are strong systematic patterns and meaningful generalizations that can be made. Ignoring those generalizations would be like ignoring the weather report whenever the prediction of rain is less than 100%.

4.4 Do We Need Deprefixation?

Zaliznjak & Mikaèljan claim that base imperfectives are formed from prefixed NPs by a process they call deprefixation. This claim suffers from some of the same drawbacks as their claim concerning the directionality of aspectual correlation (see section 3.1.3), namely: Why should imperfectives be formed from NPs via deprefixation while SPs and CAPs are formed via prefixation? Even if we lay aside these concerns and accept deprefixation, what does it buy us? Does it improve our model of Russian aspect? I would argue that on the contrary, rigid insistence on unidirectional derivations blinds us from the real complexity of the aspectual system, where relationships exert forces in multiple directions. Where else in Russian or in other languages do we see such derivation via truncation? Why is it the case that newly borrowed verbs tend to create NPs via prefixation, and that the choice of prefixes correlate with the meanings of the verbs? For example, *моделировать* 'model' has grown two NPs, one with the prefix *за-* to describe the creation of computer models (creating something stable, parallel to *запланировать* 'plan'), and another with the prefix *с-* to describe modeling by hand to create a physical object (parallel to NPs like *сшить* 'sew'). In Zaliznjak & Mikaèljan's model, what meaning could *моделировать* have had before its NPs came into existence? How would it know which prefixes to take in the NPs that would then cast those prefixes off so that *моделировать* could serve as their imperfective partner verb? These questions are not trivial.

5. **Conclusions**

In sum, the CLEAR group has set a more general research agenda concerning the structure of the Russian aspectual system and the role of prefixes in that system, rather than focusing narrowly on the nature of aspectual pairs. The work of the CLEAR group is theoretically grounded in the framework of cognitive linguistics, which makes the minimal assumption that linguistic cognition is not fundamentally different from human cognition, avoiding specific assumptions concerning Russian aspect. CLEAR research takes as its starting point empirical observations enhanced by statistical modeling. The result is a set of generalizations that are complex, nuanced, and flexible, reflecting the real complexity and dynamic state of the Russian aspect system. These generalizations are directly applicable to practical goals such as language teaching and processing and yield valuable typological comparisons to other languages.

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REFERENCES

Apresjan, Jurij D. (1995). Traktovka izbytočnyx aspektual'nyx paradigm v tolkovom slovare. *Izbrannye trudy* 2 (Integral'noe opisanie jazyka): 102–13.

Bybee, J. L. (2001). *Phonology and language use*. Cambridge: Cambridge University Press.

Bybee, Joan & Dan Slobin (1982). Rules and schemas in the development and use of the English past tense. *Language* 58, 265–289.

Čertkova, Marina Ju. (1996). *Grammatičeskaja kategorija vida v sovremennom russkom jazyke.* Moscow: Moscow State University.

Čertkova, M. Ju. and V. A. Plungjan, A. A. Rjabčikov, D. O. Kuznecov. (1997). Otvety na anketu aspektologičeskogo seminara filologičeskogo fakul'teta MGU im. M. V. Lomonosova. *Voprosy jazykoznanija* 3.

Divjak, Dagmar. (2010). *Structuring the Lexicon: A Clustered Model for Near-Synonymy*. (= *Cognitive Linguistics Research* 43). Berlin: De Gruyter Mouton.

Endresen, Anna. (2014). *Non-standard Allomorphy in Russian Prefixes: Corpus, Experimental, and Statistical Exploration*. PhD dissertation, UiT The Arctic University of Norway.

Gerner, Matthias. (2009). Instruments as verb classifiers in Kam (Dong). *Linguistics* 43(3): 697–743.

Goldberg, Adele E. (1995). *Constructions: A construction grammar approach to argument structure.* Chicago: University of Chicago Press.

Goldberg, Adele E. (2006). *Constructions at work: The nature of generalizations in language.* Oxford: Oxford University Press.

Gorbova, E. V. (2011). Vidovaja parnost' russkogo glagola: problemy i rešenija. *Voprosy jazykoznanija* 4: 20-45.

Gorbova, E. V. (2015). Vidoobrazovanie russkogo glagola: prefiksacija i/ili suffiksacija? *Voprosy jazykoznanija* 1, 7-38.

Jakobson, Roman O. (1957/1971). Shifters, verbal categories, and the Russian verb. *Roman Jakobson: Selected writings.* Vol. 2. The Hague: Mouton, 130–47.

Janda, Laura A. (2004). A metaphor in search of a source domain: The categories of Slavic aspect. *Cognitive linguistics* 15(4): 471–527.

Janda, Laura A. (2007). Aspectual clusters of Russian verbs. *Studies in language* 31: 607-648.

Janda, Laura A. (2012). Russkie pristavki kak sistema glagol'nyx klassifikatorov. *Voprosy jazykoznanija* 6, 3-47.

Janda, Laura A. (2015). Cognitive Linguistics in the Year 2015. Forthcoming in *Cognitive Semantics*.

Janda, Laura A., Steven J. Clancy. (2002). *The Case Book for Russian*. Bloomington, IN: Slavica.

Janda, Laura A. and Olga Lyashevskaya. (2011). Grammatical profiles and the interaction of the lexicon with aspect, tense, and mood in Russian. *Cognitive linguistics* 22(4): 719–63.

Janda, Laura A. and Anna Endresen, Julia Kuznetsova, Olga Lyashevskaya, Anastasia Makarova, Tore Nesset, Svetlana Sokolova. (2013). *Why Russian aspectual prefixes aren't empty: prefixes as verb classifiers*. Bloomington, IN: Slavica Publishers.

Jasai, L. (2001). O specifike vtoričnyx imperfektivov i vidovyx korreljacij. I. V. Nedjalkov, ed. *Issledovanija po jazykoznaniju: K 70-□- letiju A. V. Bondarko.* St. Petersburg: Institut lingvističneskix issledovanij, 106–18.

Kuznetsova, Julia. (2010). *Natural and non-natural perfectives: Prefix statistics.* Presentation, Tromsø, Norway.

Kuznetsova, Julia. (2012). *Linguistic profiles: Correlations between form and meaning.* PhD Dissertation, University of Tromsø.

Langacker, Ronald W. (2008). *Cognitive grammar: A basic introduction.* Oxford: Oxford University Press.

Lucy, John A. (2000). Systems of nominal classification: A concluding discussion. Gunter Senft, ed. *Systems of nominal classification.* Cambridge: Cambridge University Press, 326–41.

Majsak, Timur A. (2005). *Tipologija grammatikalizacii konstrukcij s glagolami dviženija i glagolami pozicii.* Moscow: Jazyki slavjanskix kul'tur.

Maslov, Ju. S. (1948). Vid i leksičeskoe glagola v russkom jazyke. Izvestija AN SSSR. Serija literatury i jazyka, t. 7, No. 4, 303-316.

McGregor, William B. (2002). *Verb classification in Australian languages.* Berlin:Mouton de Gruyter. [*Empirical Approaches to Language Typology*, 25.]

Nichols, Johanna. (2008). *Prefixation and the locative alternation in Russian contact verbs.* Presentation at the annual conference of the American Association of Teachers of Slavic and East European Languages, San Francisco.

Ožegov, Sergej I. and Natalija Ju. Švedova. (2001). *Slovar' russkogo jazyka.* Moscow: Russkij jazyk.

Plungjan, Vladimir A. (2011). *Vvedenie v grammatičeskuju semantiku: Grammatičeskie značenija i grammatičeskie sistemy jazykov mira.* Moscow: Rossijskij gosudarstvennyj gumanitarnyj institut.

Plungjan, Vladimir A. (2012). Predislovie. Vladimir Plungjan et al., eds. *Issledovanija po teorii grammatiki: Tipologija aspektual'nyx sistem i kategorij.* Vol. 6. St. Petersburg: Rossijskaja akademija nauk.

Ramchand, Gillian. (2004). Time and the event: The semantics of Russian prefixes. *Nordlyd* 32(2): 323–61.

Rusakova, M. V., S. S. Saj. (2008). Глагольная парадигма в индивидуальных системах носителей русского языка и проблема грамматического вида. Vestnik Sankt-Peterburgskogo universiteta. Serija 9: Filologija. Vostokovedenie. Žurnalistika. vyp. 2-II, 205-214.

van Schooneveld, Cornelius H. (1958). The so-called 'préverbe vides' and neutralization. *Dutch contributions to the Fourth International Congress of Slavistics.* The Hague: Mouton, 159–61.

Svenonius, Peter. (2004a). Slavic prefixes and morphology: An introduction to the Nordlyd volume. *Nordlyd* 32(2): 177–204.

Svenonius, Peter. (2004b). Slavic prefixes inside and outside VP. *Nordlyd* 32(2): 205–53.

Townsend, Charles E. (1975). *Russian word-formation.* Columbus, OH: Slavica.

Vey, M. (1952). Les préverbes 'vides' en tchéque moderne. Revue des études slaves 29: 82–107.

Veyrenc, Jacques. (1980) *Études sur les verbe russe.* Paris: Institut d'etudes slaves.

Xrakovskij, V. S. (2005). Aspektual'nye trojki i vidovye pary. *Russkij jazyk v naučnom osvjaščenii* 9(1): 46–59.

Zaliznjak, Anna A. and I. L. Mikaèljan. (2010). O meste vidovyx troek v aspektual'noj sisteme russkogo jazyka. Dialog 2010. Moscow. http://www.dialog-21.ru/digests/dialog2010/materials/html/21.htm

Zaliznjak, Anna. A. and Irina Mikaèljan. (2014). Russkaja glagol'naja prefiksacija i problema vidovoj parnosti. *Mundo Eslavo* 13: 19-33.