On the aspectual architecture of Russian*

1. Aspectuality and aspectlessness

1.1. Slavic-style aspect

Is the English verb *read* perfective or imperfective? Most semanticists would probably agree that the only answer that can be reasonably motivated by empirical evidence is: neither. The verb, as a lexical item, is aspectless. Aspectual semantics only appears when the verb projects and clausal functional structure is built that creates (or, in some frameworks, licenses) inflectional forms like the past, perfect, progressive, etc. It is in the functional domain of a clause that some element, call it Asp, responsible for aspectual interpretation enters the derivation.

(1) [… [$_{F_{i+1}P}$ … [$_{F_iP}$ … Asp ... [$_{F_{i-1}P}$ … [$_{VP}$ … [$_{V}$ read]]]]]

Different theories available in the extensive literature on the topic may disagree on the details of tense-aspect architecture of English. However, they fundamentally share the view that *V* and *Asp* are located at a certain structural distance, as in (1).

A completely different picture emerges in the literature on aspect in Russian and other Slavic languages. The central tenet of Slavic aspectology, going back to the late XIXth and early XXth centuries is **verb-internal (im)perfectivity**: Russian verbs have a fixed aspectual value and

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come out as either perfective or imperfective. This view characterizes traditional studies of Russian/Slavic aspect (Bondarko 1971, Bondarko & Bulanin 1967, Durst-Andersen 1992, Flier & Timberlake 1985, Flier 1975, Forsyth 1970, Glovinskaya 1982, Isačenko 1960, Janda 2007, Janda *et al.* 2013, Maslov 1984, Padučeva 1996, Timberlake 1982, Zalizniak, Šmelev 2000, Švedova (ed.) 1980, to mention just a few) as well as more recent theoretical work (Altshuler 2012, 2014, Dickey 2000, Dimitrova-Vulchanova 1996, Filip 1993/1999, 2000, 2004, 2005a,b, 2008, 2017, Filip, Rothstein 2005, Grønn 2003, Klein 1995, Krifka 1992, McDonald 2008, Mezhevich 2008, Pereltsvaig 2002, Piñon 2001, Ramchand 2004, Slabakova 2005, Verkuyl 1999).

(2a-d) illustrate a few basic cases that characterize the aspectual system of Russian.

(2)		Imperfectve	Perfective	Imperfective
	a.	*pisa-t'* 'write^{IPFV}, write-INF	***na**-pisa-t'* 'write^{PFV}, PRF-write-INF	
	b.		***pod**-pisa-t'* 'sign^{PFV}, PRF-write-INF	*pod-pis-**yva**-t'* 'sign^{IPFV}, PRF-write-YVA-INF
	c.	*čita-t'* 'read^{IPFV}, read-INF	***pro**-čita-t'* 'read^{PFV}, PRF-read -INF	*pro-čit-**yva**-t'* 'read^{IPFV}, PRF-read-YVA-INF
	d.		*da-t'* 'give^{PFV}, give-INF	*da-**va**-t'* 'give^{IPFV}, give-YVA-INF

A Russian verb can contain zero or more pieces of derivational morphology, which is typically characterized as 'aspectual morphology'. Morphologically **simplex verbs** like *pisat'* 'write^{IPFV}' in (2a) and *čitat'* 'read^{IPFV}' in (2c) are imperfective; a restricted number of simplex lexical items (e.g. *dat'* 'give^{PFV}' in (2d)) are perfective.

Prefixation creates perfective verbs[1], as in (2a-c), where the prefixes *na-*, *pod-*, and *pro-* are illustrated. Here two basic patterns can be identified. In (2a) and (2c) perfectivity is the only perceivable contribution of the prefix, which transforms 'write^{IPFV}' and 'read^{IPFV}' into 'write^{PFV}' and 'read^{PFV}'. In (2b), there is more to prefixation than just perfectivity: *pod-* 'under' plus *pisa-t'* 'write^{IPFV}' is 'sign^{PFV}', a new perfective lexical item.

Perfective verbs, both simplex and prefixed, can undergo **secondary imperfectivization**, illustrated by the examples in the rightmmost column in (2). In (2b-d), 'sign^{PFV}' becomes 'sign^{IPFV}', 'read^{PFV}' — 'read^{IPFV}', and 'give^{PFV}' — 'give^{IPFV}'. Secondary imperfectivization is morphologically realized by the *-(y)(v)a-* morpheme, YVA henceforth (see Matushansky 2009 for a phonological analysis of YVA and its allomorphs). For some stems like 'read' in (2c) a triple consisting of two imperfective and one perfective verb can be derived. Many more stems can only produce pairs: a simplex imperfective / prefixed perfective pair as in (2a), prefixed perfective / derived imperfective pair as in (2b), and simplex perfective / derived imperfective as in (2d).

[1] There is a class of perfective verbs derived by what grammars of Russian refer to as the "semelfactive" suffix *nu-*. I do not discuss it in what follows, see Markman 2008 for a number of important generalizations about semelfactive verbs. My hope is that assimilating their properties to the general picture I am trying to establish throughout this paper will not require much additional effort.

In the literature, one can find various analyses of the structure of a verb stem in Russian, which are situated within the range of possibilities determined by the two theoretical extremes in (3a-b):

(3) a. Lexicalist view
A verb stem is built presyntactically

b. Anti-lexicalist view
A verb stem is built in the syntax

A strictly lexicalist analysis is characteristic of traditional Slavic linguistics, but can be found in more recent theoretical work as well (see e.g., Filip's (2000, 2005a,b, 2008, 2017) assumptions about prefixation). On this view, all the derivational affixation happens before a verb enters syntactic derivation. (4), for example, represents a stem from (2c) that contains the perfectivizing prefix *pro-* and the secondary imperfective suffix.

(4) [… [$_{F_{i+1}P}$ … [$_{F_iP}$ … [$_{F_{i-1}P}$ … [$_V$ *pro-čit-yva-*]]]]]

An anti-lexicalist position would assume that derivational affixes are syntactically represented, but the precise location of prefixes and the secondary imperfective has been much debated[2]. (5) represents the structure of the same verb that follows proposals like Ramchand 2004, Romanova 2006, Svenonius 2004, 2008. The prefix *pro-* heads the projection that *V* takes as its complement, whereas the secondary imperfective originates outside of VP.

(5) [… [$_{F_{i+1}P}$ … [$_{F_iP}$ … [$_{F_{i-1}P}$ …[$_{YP}$ … *-yva-* … [$_{VP}$ [$_V$ *čit-*] [$_{XP}$ … *pro-* …]]]]]]]]

However significant are the differences between theories along the lines of (4) and (5), they all seem to agree on the verb-internal (im)perfectivity:

(6) Verb-internal (im)perfectivity
As soon as the morphosyntactic derivation of a verb stem is complete, its aspectual value is determined.

In the world according to (4), Russian verbs are born in the lexicon as either perfective or imperfective. In the worlds that align with (5), (im)perfectivity is set up at the point where a verb is fully created, which happens when the last piece of derivational morphology is merged. In both cases, (im)perfectivity ends up being **a property of a verb**, and every verb gets specified for semantic aspect:

[2] The issue gets more complicated as soon as one recognizes that prefixes do not form a homogeneous class as to their morphosyntactic distribution. In the recent literature, compelling evidence has been presented that prefixes like *na-* in (2a), *pod-* in (2b) and *pro-* in (2c), called lexical prefixes, merge lower than superlexical prefixes (Babko-Malaya 1999, Ramchand 2004, Romanova 2004, 2006, Svenonius 2004, 2008, Tatevosov 2009, 2013). The latter, as Filip (2017) points out, convey information that "concerns measurement, vague quantity, or weak quantificational meanings that are akin to those expressed by lexical (word-internal) operators ("lexical A-quantifiers", Bach *et al.* 1995)". This distinction is not the main concern of this study, but in what follows I will address it whenever relevant.

(7) [… [F_{i+1}P … [F_iP … [F_{i-1}P … [V Asp *pro-čit-yva-*]]]]]

(8) [… [F_{i+1}P … [F_iP … [F_{i-1}P …[YP … Asp *yva* … [[V *čit*] [XP … *pro-* …]]]]]]]]

This makes Russian radically different from Germanic, Romance, Turkic, most Uralic and thousands of other languages where semantic aspects only enter the derivation when relevant functional structure of a clause is projected, as in (1). This asymmetry in how aspect is construed in natural languages is a challenge for any theory that wants to minimize ineliminable assumptions about linguistic diversity that have to be stipulated. The view that aspect in languages like Russian is verb-internal, while in other languages it is verb-external requires precisely this type of assumptions.

But what are the reasons to believe the received view in (6) is correct? That is, what are the reasons to assume that what happens in perfective sentence like (9) is either (10a) or (10b) rather than (11a) or (11b), where the perfective semantic aspect appears in the functional domain of a clause, exactly as in languages like English?

(9) Volodja **pro-čita-l** pis'm-o.
V. PRF-read-PST.M letter-ACC
'Volodja read a letter.'

(10) a. [… [F_{i+1}P … [F_iP … [F_{i-1}P … [V PFV *pro-čita-*]]]]]
b. [… [F_{i+1}P … [F_iP … [F_{i-1}P … [PFV [V *čita-*] [XP … *pro-* …]]]]]]

(11) a. [… [F_{i+1}P … [F_iP PFV … [F_{i-1}P … [V *pro-čita-*]]]]]
b. [… [F_{i+1}P … [F_iP PFV … [F_{i-1}P … [[V *čita-*] [XP … *pro-* …]]]]]]

Similarly, why do we believe that in imperfective sentences like (12), the imperfective semantic aspect is part of the semantic representation of a verb, (13a-b), but not the contribution of a functional head that is structurally higher than the verb, (14a-b)? (In (14a-b), the alternatives are shown for the secondary imperfective; the same reasoning applies to the simplex imperfective.)

(12) Volodja pro-čit-yva-l pis'm-o.
V. PRF-read-YVA-PST.M letter-ACC
'Volodja read a letter (regularly).'

(13) a. [… [F_{i+1}P … [F_iP … [F_{i-1}P …[V IPFV *pro-čit-yva-*]]]]]
b. [… [F_{i+1}P … [F_iP … [F_{i-1}P …[YP … IPFV *yva* … [[V *čit*] [XP … *pro-* …]]]]]]]

(14) a. [… [F_{i+1}P … [F_iP IPFV … [F_{i-1}P … [V *pro-čit-yva-*]]]]]
b. [… [F_{i+1}P … [F_iP IPFV … [F_{i-1}P … [YP … *yva* … [[V *čit*] [XP … *pro-* …]]]]]]]

If it is true that the less cross-linguistic variation a theory has to stipulate the more explanatory adequacy it gains, (11a-b) and (14a-b) are exceedingly superior to (10a-b) and (13a-b), since they open a way of providing a unified account for the structure and interpretation of verbs and VPs in both types of languages. In Russian, as in English, verbs and VPs are aspectless.

The main reason (and the only reason, as far as I can see) why most existing theories of Slavic aspect assume (10a-b) and (13a-b) is **aspectual invariance**. As soon as one gets a verb like *dat'* 'give^{PFV}' in (1d), *pročitat'* 'read^{PFV}' in (1c), *podpisat'* 'write^{PFV}' in (1b) and so on, no matter what one's favorite theory says about its derivation, there is no aspectual choice. Inflectional forms of these verbs can only occur in a perfective clause. In the same way, with verbs like *pisat'* 'write^{IPFV}', *pročityvat'* 'read^{IPFV}', *davat'* 'give^{IPFV}' and the like one can only build up an imperfective clause.

Aspectual invariance is what makes Russian different from English, where one is free to derive a clause with whatever semantic aspect one wants if the starting point of the derivation is a verb *read*, *write*, *sign*, *give*, etc. If Russian was like English, in other words, some of inflectional forms of a verb would have occurred in perfective, while others in imperfective configurations. We would expect to find not just (11a-b) and (14a-b), but also their mirror-images (15a-b) and (16a-b):

(15) a. *[… [$_{F_{i+1}P}$ … [$_{F_iP}$ IPFV … [$_{F_{i-1}P}$ … [$_V$ *pro-čita-*]]]]]
b. *[… [$_{F_{i+1}P}$ … [$_{F_iP}$ IPFV … [$_{F_{i-1}P}$ … [[$_V$ *čit*] [$_{XP}$ … *pro-* …]]]]]]

(16) a. *[… [$_{F_{i+1}P}$ … [$_{F_iP}$ PFV … [$_{F_{i-1}P}$ … [$_V$ *pro-čit-yva-*]]]]]
b. *[… [$_{F_{i+1}P}$ … [$_{F_iP}$ PFV … [$_{F_{i-1}P}$ …[$_{YP}$ … … *yva* … [[$_V$ *čit*] [$_{XP}$ … *pro-* …]]]]]]]

(15a-b) is an imperfective clause built on the prefixed verb stem, whereas (16a-b) is a perfective clause in which the "secondary imperfective" occurs. (15)-(16) are impossible, however. Assuming that semantic aspects appear early in the derivation, as in (10) and (13), predicts exactly this: (15)-(16) cannot be derived for the simple reason that semantic aspect is a property of the verb, *pro-čita* 'read^{PFV}' being perfectve and *pro-čit-yva* 'read^{IPFV}' imperfective[3].

Once this view has been established, everything else follows. Specifically, one is forced to analyze prefixes and the YVA morpheme as elements that contribute to aspectual interpretation. Indeed, aspect is determined, by assumption, at the level where the verb is assembled from

[3] There is a class of proposals (e.g. Filip 2004, 2005a and elsewhere, Manova 2005 and a few others) which assume that the secondary imperfective YVA is an inflectional morpheme rendering the imperfective semantic aspect. On this view, *podpisat' — podpisyvat'* in (1b), *dat' — davat'* in (1d) and similar pairs are inflectional forms of the same verb. This part of the Russian system thus shows no aspectual invariance and is not much different from languages like English. However, in all the theories of this type I am aware of the rest of the system including "simplex imperfectives" and "prefixed perfectives" like *pisat'* and *napisat'* in (1a) is assumed to be essentially the same as on the traditional "derivational" view; prefixes are never treated as instances of inflectional morphology. For such verbs, (im)perfectivity is said to be verb-internal, so they are fully characterized by the alternatives in (10)-(11) and aspectual invariance in (15).

It should be pointed out, moreover, that an inflectional analysis of YVA faces a number of independent empirical complications that are difficult to overcome. For one thing, the amount of lexical items that can be "inflected" for YVA is relatively small: according to Polivanova 1985, it does not exceed 30% of verb stems. Needless to say, this is not what one would expect from an inflectional category. Besides, some prefixes can merge on top of YVA (see Section 3), with the unwelcome consequence that a theory should admit derivational morphology outside of inflectional morphology.

relevant pieces of derivational morphology. Depending on what piece merges last (see various options in (1a-d)), a non-simplex verb comes out perfective or imperfective. Therefore, prefixes and YVA must be the items that establish an aspectual value of the verb. Some aspectologists suggest that they denote aspectual operators directly. This is the common view of the meaning of YVA, "the marker of imperfective aspect", which in many studies extends to the meaning of "perfectivizing prefixes", see e.g. Zucchi 1999 or Piñon 2001. Others assume that "aspectul morphology" contributes to the computation of aspect in a less than completely compositional way; this is what is not enfrequently said about the prefixation system at large or about subparts of it, see, e.g., Filip 2004, 2005a,b.

This reasoning is so straightforward that it is too easy to overlook that it is not the only possible way of accounting for aspectual invariance. Aspectual invariance only argues for verb-internal grammatical aspect in (10) and (13) if there is no way of excluding (15)-(16) on independent grounds. Suppose that the verb-external view in (11) and (14) is right, and in Russian, as well as in languages like English, grammatical aspect is part of the denotation of a morpheme that appears in the functional domain of a clause. Then (15)-(16) must be unavailable for some reason other than the verb having been specified for grammatical aspect.

Here is an outline of the idea. Imagine that a morpheme carrying a semantic aspect has to enter a certain type of relationship with the structure projected at earlier stages of derivation. The right type of relationship can only be established between PFV and (some projection of) the aspectless *pročita* (traditionally, a "perfective verb") as well as between IPFV and (some projection of) the aspectless *pročityva* or *čita* (traditionally, "imperfective verbs"). Whenever IPFV tries to combine with the structure projected by *pročita*, or, conversely, PFV merges with *čita* or *pročityva*, something goes wrong.

If this scenario can be given sufficient empirical motivation, (6) stops looking like an absolute truth written in stone. It can open a way of building up a theory that will hopefully avoid unattractive theoretical and cross-linguistic implications of the verb-internal (im)perfectivity. In all languages, the architecture of aspectual system would be essentially the same; aspectual morphemes would appear in the derivation at the same point and interpreted by the same mechanism. The relevant parameter of cross-linguistic variation would not be whether aspect is verb-internal or verb-external. Rather, languages will differ as to whether aspectual morphemes are sensitive to the characteristics of the structure they take as a complement. In some, English among them, (almost) any morpheme will comfortably combine with any configuration generated at earlier stages of derivation. In others, Russian being the case, aspectual morphemes will only be able to come together with a restricted range of configurations, which would exclude cases like (15)-(16). The fact that grammatical morphemes can exhibit selectional restrictions is hardly surprising, hence this view would require from a theory of aspect radically smaller amount of stipulations about cross-linguistic variation, and those stipulations will be radically less theoretically challenging.

In what follows, I will argue for exactly this type of theory. It consists of two partially independent components in (17):

(17) Verb-external aspectuality
Semantic aspects are outside of the highest position where verb-internal material can appear.

(18) *v*P-external aspectuality
Semantic aspects are outside of *v*P.

Taken together, (17)-(18) amount to (20).

(19) Aspectual architecture of Russian
[… [$_{F_{i+1}P}$ … [$_{F_iP}$ Asp … [$_{F_{i-1}P}$ … [… (α) … [$_{vP}$ … [… (α) ... [$_V$ verb root] …]]]]]
where α is the highest position where verb-internal material can appear

According to (19), grammatical aspect appears in the functional domain of a clause, presumably at the same position as in the languages like English. This position is outside *v*P and outside the highest position where verb-internal material can appear, α. I do not need to make any specific assumptions about how *v* and α are located with respect to each other. It is for this reason that in (19) α is shown in both possible positions. (19), therefore, reads as follows: semantic aspects are outside the projections of *v* and α, no matter which is higher[4].

According to (19), no piece of verbal morphology can be taken to be an exponent of semantic aspects. That is, no morphological element of a verb is interpreted as a semantic aspect in the position where it is merged. There is thus no "aspectual morphology" in Russian *sensu stricto*, contrary to what the tradition tells us. This does not mean that prefixes and YVA are not interpreted at all: as I will argue shortly, many of these elements contribute to establishing the event structure of a predication. This only means that their interpretation should not (and cannot) be characterized in terms of semantic aspect.

The only line of inquiry I know of that instantiates this type of theory can be found in Arnim von Stechow and his colleagues' work (Paslawska, von Stechow (2003), Grønn, von Stechow (2010, 2012), etc.). However, they assume a theory along the lines of (19) rather than argue for it. Below, I will try to convince the reader that (19) is preferable not just for conceptual reasons, some of which were outlined above, but because it makes better empirical predictions. In Section 1.2 I will identify a number of predictions of (19) that can be used to tell it apart from *v*P-internal and verb-internal view of Russian aspectuality. In Section 2, I present an arumgnet for (19) from deverbal nominals showing that perfectivity cannot be part of the meaning of what is traditionally called perfective verbs (*napisat'* 'write^{PFV}', *podpisat'* 'sign^{PFV}', *pročitat'* 'read^{PFV}', *dat'* 'give^{PFV}' in (1a-d)). In Section 3, a similar argument for "imperfective" verbs is built up. The concluding Section 4 addresses the problem of aspectual invariance and, relying on insights from Klein 1995, builds up an account for the fact that aspectual operators are complementarily distributed over eventuality descriptions created at earlier stages of derivation.

I will adopt an anti-lexicalist view of verbal morphosyntax and assume that prefixes and -YVA are syntactically represented. I will treat them as heads rather than maximal projections (cf. Svenonius 2008), and assume that they are combined with the host by head movement. None of these assumptions impacts my argumentation, however. I believe that it will remain unaffected even if one adopts one of the alternative perspectives on the morphosyntactic makeup of a verb.

[4] As a matter of fact, all the verbal affixes discussed below merge lower than *v*. The only potential exception I am aware of is the distributive prefix *po-* (Tatevosov 2013b) that can arguably take scope outside *v*P. I know no facts about the distribution of this prefix that can affect the generalization I will try to establish in the rest of the paper. For this reason properties of this prefix are not discussed in what follows.

1.2. Setting the stage

Given the discussion in the previous section, my goal will be to motivate verb-external aspectuality in (17) and *v*P-external aspectuality in (18). Let us start with (17) and try to see what kind of evidence can tell verb-internal and verb-external theories apart. The two are summarized in (20)-(21):

(20) Verb-internal aspectuality

[… [$_{F_{i+1}P}$ … [$_{F_iP}$ … [$_{F_{i-1}P}$ … [$_{\alpha P}$ … Asp α … [$_V$ verb root] ...]]]]]

(21) Verb-external aspectuality

[… [$_{F_{i+1}P}$ … [$_{F_iP}$ Asp … [$_{F_{i-1}P}$ … [$_{\alpha P}$ … α ... [$_V$ verb root] …]]]]]

As before, αP is the projection of the highest non-inflectional morphological component α of a verb. According to the verb-internal theory in (20), Asp, a morpheme whose denotation || Asp || is some semantic aspect, is inside αP. According to the verb-external theory, which I want to argue for, Asp is outside αP.

The crucial difference between (20) and (21) is: in (21) but not in (20) α and Asp are located at a certain structural distance. From this fact, at least one straightforward prediction can be deduced. (21) tells us that there is a stage of syntactic derivation at which all the morphosyntactic material of a verb is already present, but semantic aspect is not. In (21), αP, $F_{i-1}P$ and all the projections in between the two, if any, are such stages. (20), in contrast, makes α and Asp inseparable and predicts that there is no such stage of derivation.

There can minimally be two ways of testing this prediction of (21). First, we can try to find a **structurally deficient configuration** (SDF) that does not contain the whole array of functional projections characteristic of fully inflected clauses. This configuration should maximally encapsulate $F_{i-1}P$ but not F_iP, where, by hypothesis, semantic aspects are located. On the other hand, it should be large enough to include the whole of αP. In such a configuration, the verb would occur without being specified for semantic aspect. If such a configuration exists, this would mean that aspect is not a built-in semantic characteristic of αP, hence the verb-internal theory in (20) cannot be correct. This would be a strong argument for a verb-external theory along the lines of (21).

To put it differently: we can try to get rid of the functional structure where, by hypothesis, semantic aspects are located. If we find out that the aspectual meaning is gone, this will show that semantic aspects are not part of the remainder:

(22) [… [$_{F_{i+1}P}$ … [$_{F_iP}$ Asp … $\underbrace{\text{[}_{F_{i-1}P} \text{ … [}_{\alpha P} \text{ … α ... [}_V \text{ verb root] …]]]]]}_{\text{SDC}}$

If the reminder, an SDC, contains a fully derived verb, we will know that this verb is aspectless.

Secondly, we can explore the properties of a syntactic head located, by hypothesis, in between F_i and α, that is, a head like F_{i-1}. If there is independent evidence that α is below F_{i-1}, whereas semantic aspects are higher up, as in (23), this would mean that the verb-internal aspectuality cannot be maintained.

(23) Asp > F_{i-1} > α

If we succeed in motivating the verb-external aspectuality, (17)/(21), we can take a further step and argue for *v*P-external aspectuality, (18).

Given (22), to establish such an argument it will suffice to show that the SDC in (24) contains *v*P:

(24) [… [$_{F_{i+1}P}$ … [$_{F_iP}$ Asp … $\underbrace{[_{F_{i-1}P} \ldots \ [_{vP} \ldots v \ldots [_{V} \text{ verb root }] \ldots]]]]]}_{\text{SDC}}$

Note that we do not have to care about how *v* and α are located with respect to each other. It will be enough to make sure that both are parts of the SDC.

In a similar way, if (23) is well-established, one can strengthen it to argue for both verb-external and *v*P-external aspectuality. To achieve that, it will be enough to show that F_{i-1} is identical to *v*.

(25) Asp > F_{i-1} = *v* > α

In what follows, I will use arguments structured along the lines of (22)-(25) to argue for the aspectual architecture in (19). I will start with an argument based on a structurally deficient configuration, (22) and (24)

Before we proceed, a note on aspectlessness is due, the notion which the subsequent argumentation will rely on. What does it mean for a certain constituent to be aspectless? Depending on the theory one assumes, the contribution of semantic aspects is either a specific relation between times (e.g., topic time and event time as in, Beck, von Stechow 2015, Klein 1994, Kratzer 2000 and elsewhere, Portner 1998, among many others), between eventualities (Altshuler 2012, Filip 1999, Landman 1992, Varasdi 2014) or between situations (Cipria, Roberts 2000, Arreui et al 2014), see a recent discussion in Altshuler 2015.

For example, the perfective is frequently conceived of as the function λP.λt.∃e[t ⊇ τ(e) ∧ P(e)] of type <<v,t>,<i,t>> (where *v* is the type of eventualities and i is type of temporal intervals, τ is a temporal trace function). It takes an eventuality description P and maps it to a predicate of times. The extension of this predicate contains times *t* such that *t* includes the time of some eventuality that falls under P. As the result, the whole temporal extent of such an eventuality will be part of the semantic content of a clause. If no semantic aspect merges on top of P, there will be no constraints on whether we are talking about complete events (t ⊇ τ(e)), about temporal parts of those events (τ(e) ⊃ t), about their posttimes (t »$_T$ τ(e)) or whatever other times that the aspectual system of a language may make use of. We expect, therefore, that an aspectless object will be compatible with any of those aspectual construals, and that interpretational restrictions, if any, can only come from the semantic requirements of a context or a larger morphosyntactic environment. “Aspectless” means “allowing whatever aspect you need”, in other words.

2. Perfectivity in a structurally deficient configuration

My first argument aims at showing, following the proposal in Tatevosov 2011, that there is a stage of syntactic derivation where a fully derived verb stem like *pročita-* (traditionally,

'read^{PFV}'), with all its "aspectual morphology", is already present, but a corresponding semantic aspect is not, as in (22) and (24). This argument, however, will only allow us to establish verb-external and *v*P-external aspectuality for the **perfective** semantic aspect. My starting point are therefore "perfective verbs".

2.1. Verb-external aspectuality

As was indicated earlier, the decisive evidence telling verb-internal and verb-external aspectuality apart would come from a structurally deficient configuration where some of the clausal functional projections are absent. Tatevosov (2011) argues that a relevant configuration is provided by **argument supporting deverbal nominals** (ASNs) like *pročtenie (knig)* 'reading (of) (the books)' or *napisanie (pisem)* 'writing (of) (the letters)'.

Much research has been done during past few years (e.g., Abney 1987, Alexiadou 2001, 2007, 2009, 2010, Alexiadou *et al*. 2010, Borer 2012, 2013, Fu *et al.* 2001, Harley 2009, van Hout, Roeper 1998, Roeper 1987, 2004, among many others) that yields extensive evidence that a substantial class of ASNs offer precisely the required type of structural deficiency. They share with fully inflected clauses the VP and possibly a restricted amount of functional structure dominating it, but crucially not the whole array of clausal functional projections, as illustrated in (26)-(27). They give us an opportunity to see properties of *v*Ps / VPs / verbs at early stages of syntactic derivation, where (at least some of) the clausal structure has not yet been built. In nominals, characteristics of uninflected *v*Ps / VPs / verbs are more transparently visible[5].

(26) Fully inflected clauses
[$_{CP}$ … [$_{F_iP}$ … [$_{F_2P}$ … [$_{F_1P}$ …[$_{vP}$ … [$_{VP}$ … [$_{V}$ … *V* …]]]]]

(27) ASNs
[$_{DP}$ … D [$_{NP}$ … N … [$_{F_1P}$ … [$_{vP}$ … [$_{VP}$ … [$_{V}$ … *V* …]]]]]

The crucial prediction is: if a verb-internal theory is correct, and aspectual operators, including PFV, appear in the derivation as early as possible, perfectivity effects is what fully inflected clauses and corresponding nominals are expected to share. If, in accordance with the verb-external view, PFV is a component of functional structure, and it is this structure that deverbal nominals are lacking (i.e., the structure above F_1P in (26)), nominals will never show perfectivity effects.

An example of the relevant type of ASNs, ***nie*-nominals**, is shown in (28):

(28) na-pisa-n-ij-e pis'm-a
PRF-write-N/T-NOUN-NOM letter-GEN
'writing (of) a/the letter'

[5] Essentially, this is the strategy suggested by Kratzer (2003) for solving the problem of indirect access discussed by Zucchi (1999: 179 *et seq.*). Zucchi indicates that the meaning of uninflected verbs and their immediate projections are not directly accessible for observation, since we normally see verbs as parts of inflected clauses, where their meaning is covered by the semantics introduced by functional heads. We end up knowing facts about the meaning of the whole, but do not have direct evidence about the meaning of the summands. Structurally deficient configurations like ASNs, or complex event nominals in Grimshaw's (1990) terms, thus offer a way of seeing verbs and VPs less indirectly.

The noun *napisa-nie* consists of the prefixed verb stem *napisa-* 'write^{PFV}', the *-n-* morpheme *nie*-nominals share with passive participles (e.g., *napisa-n* 'written', see Babby 1997), the noun morpheme *-ij-* and noun inflection[6].

This class of nominals in Russian as well as its cognates in other Slavic languages has recently attracted much attention (Babby 1997, Markova 2007, Pazelskaya 2003, 2006, Pazelskaya and Tatevosov 2006, Prochazkova 2006, Rappaport 2000, 2001, Schoorlemmer 1995, Tatevosov 2008a). What exactly their structure is is the matter of a vivid debate. I will return to this issue shortly.

Tatevosov (2011) makes use of a few diagnostics that identify semantic perfectivity in Russian and are equally applicable to both fully inflected clauses and ASNs. Here I will only show two of them, and refer the reader to Tatevosov 2011 for a more extensive sample of diagnostics.

First, the running time of an event described by a perfective clause cannot include the topic time. In (29), the topic time is specified by an adverbial clause. What we see is that the time of writing can either follow the time of coming (this is a preferable interpretation), or precede it. It cannot be the case that the time of writing includes the time of coming, as in (29.2).

(29) Kogda ja priše-l, Volodja na-pisa-l pis'm-o.
when I come-PST.M V. PRF-write-PST letter-ACC
1. 'When I came, Volodja wrote / ?had written a letter.'
2. *'When I came, Volodja was writing a letter.'

This is not the case with *nie*-nominals:

(30) Ja priše-l vo vremja na-pisa-n-ij-a pis'm-a.
I come.PFV-PST in time PRF-write-N/T-NOUN-GEN letter-GEN
'I came at the time of writing a letter.'

(31) na-pisa-n-ij-e pis'm-a v moment moego prixod-a
PRF-write-N/T-NOUN-NOM letter-GEN in moment.ACC my coming-GEN
'writing a letter at the moment of my coming.'

In (30), the noun *napisanie* occurs within a complex temporal PP. Crucially, unlike in (29), "perfectivity" of *napisa-* does not prevent the running time of a writing event from including the time of coming event. In (31), the ASN itself takes a temporal PP 'at the moment of my coming', and again, the time of coming is included into the time of writing.

[6] The hypothesis that ASNs and corresponding clauses have a constituent in common is not to be taken for granted, of course. Tatevosov (2011) presents an argument in favor of this hypothesis, which is based on the expectation that if clauses and nominals share a constituent, they should resemble each other as to the properties of that constituent. It is reasonable to suggest that the constituent in question represents an early stage of derivation – V^0, VP, or *v*P. At such a stage, (most) functional categories are not yet there, but there is at least one characteristic that is readily identifiable: event structure of a the verbal predicate, that is, its internal subevental make-up, which, as we independently know from various theories of event structure (e.g., Borer 2005, Ramchand 2008, Travis 2010), is formed at this very stage. Tatevosov (2011) examines event-structural properties of ASNs and corresponding fully inflected clauses. He observes that, first, event-structurally, ASNs are not different from clauses based on the same verbs stem, and that, secondly, differences between clauses are preserved in ASNs. Event structure projected by different types of Russian verbs will be one of the central topics of Sections 4.3-4.4.

Another perfectivity effect manifests itself in aspectual composition (Krifka 1989, 1992, 1998; Piñon 2001, 2008; Verkuyl 1972, 1993, 1999, a. m. o.), as illustrated in (32a-b):

(32) a. Volodja na-pisa-l pis'm-a…
V. PRF-write-PST.M letter-ACC.PL
1. 'Volodja wrote (all) the letters…'
2. *'Volodja wrote letters…'

b. ... *no osta-l-o-s' ešče neskol'ko.
but remain-PST-N-REFL more a.few
'… but there are a few more (letters to write).'

As (32a) indicates, perfectivity restricts the interpretation of an undetermined plural (or mass) incremental argument.[7] It must have what Filip (2005 and elsewhere) calls the unique maximal interpretation whereby the object DP is interpreted as a definite description that refers to the maximal individual consisting of all entities of a particular type available at the universe of discourse. In (32b), explicit indication that there are more letters to write yields a contradiction.

The same argument of the same stem occurring in a nominal configuration is not subject to the same restriction:

(33) na-pisa-n-ij-e pisem
PRF-write-N/T-NOUN-NOM letter.GEN.PL
1. 'writing (all) the letters'
2. 'writing letters'

In (33), the definite interpretation is an option, but not the only option. In (33.2) the incremental theme can have an indefinite interpretation similar to that of the bare plural *letters* in *write letters* in English. On this interpretation, it is not required that the maximal entity consisting of all the letters available in the universe of discourse has participated in the writing event. (33.2) only indicates that there are letters that undergo writing.

Moreover, consider (34a-b) parallel to (32a-b):

(34) a. Na-pisa-n-ij-e pisem prodolža-l-o-s' ves' den' …
PRF-write-N/T-NOUN-NOM letter.GEN.PL last-PST-N-REFL whole day
'Writing letters lasted for the whole day long...'

b. ... ^{OK}no osta-l-o-s' ešče neskol'ko.
but remain-PST-N-REFL still a.few
'… but there still are a few more (letters to write).'

In (34b), the explicit claim that there are letters not involved in writing does not yield a contradiction. The bare interpretation of 'letters', which is available in (33.2), shows up in (34a) making (34b) a felicitous continuation of the discourse.

[7] For simplicity, I ignore the well-known problem that an individual standing in the theme relation to events of creation only comes to existence at the minimal final part of the event.

Finally, perfective clauses do not allow of the habitual interpretation, but corresponging ASNs do:

(35) *Volodja na-pisa-l pis'm-o Feliks-u raz v nedelju.
V. PRF-write-PST.M letter-ACC F.-DAT once in week
'Volodja would write a letter to Felix once a week.'

(36) na-pisa-n-ij-e pis'm-a Feliks-u raz v nedelju
PRF-write-N/T-NOUN-NOM letter-GEN F.-DAT once in week
'writing a letters to Felix once a week'

To summarize, having examined various perfectivity effects, we see that ASNs do not exhibit any of them whatsoever. Other diagnostics used in Tatevosov 2011 yield the same result.

Do we have an argument for verb-external perfectivity? Unfortunately, not yet. The above evidence shows that nominalizations based on "perfective" verb stems are not semantically perfective. If they were, they would have been no way for them to differ from corresponding fully inflected clauses in terms of perfectivity diagnostics. One reason for them to pattern that way is indeed the one I have suggested: perfectivity is verb-external, and nominalizations are aspectless. Being aspecless means being compatible with whatever aspectual construal licensed in a given morphosyntactic and semantic environment. But there is another possible reason, not addressed in Tatevosov (2011), which we have to exclude: nominalizations are, in fact, imperfective. If nominalizing morphology induces imperfectivization, and if being imperfective is compatible with the properties in (29)-(36), the above observations give us little for establishing verb-external perfectivity.

A similar point has been made about the *-ing* morphology in English. Pustejovsky (1995) points out that *-ing* nominalizations are aspectually different from *-ion* nominalizations and a few other types of deverbal nominals. For example, they pattern with fully inflected clauses where the progressive comes on top of an achievement eventuality description, as in (37a). Assuming that the *-ing* nominal in (37a) is progressive, but the *al* nominal in (37b) is not accounts for the contrast in (37a-b) with no effort at all.

(37) a. *The arriving of John was greeted with mixed reactions.
b. The arrival of John was greeted with mixed reactions. (Pustejovsky 1995: 169)

Fortunately for my purposes, analyzing nominalizations in (29)-(36) like semantically imperfective is not tenable, but we will need some patience before this conclusion can be fully established.

An argument against imperfectivity of ASNs like *napisanie* comes from morphological considerations. As was mentioned above, ASN morphology consists of two pieces, *-n/t-* and *-ij-*. Neither can be reasonably analyzed as involving semantic imperfectivity.

Consider the *-n/t-* element (N/T henseforth) first. ASNs share N/T with "passive participles" (PPrt's) (Babby 1997, Pazelskata, Tatevosov 2005), as shown in (38):

(38) a. na-pisa-n-ij-e
PRF-write-N/T-NOUN-NOM
'writing'

b. ot-kry-t-ij-e
PRF-cover-N/T-NOUN-NOM
'opening'

na-pisa-n	ot-kry-t
PRF-write-N/T	PRF-cover-N/T
‘written’	‘opened’

PPrt’s can occur in a verbal passive (see Schoorlemmer 1995, Paslawska, von Stechow 2003, Borik 2012, Borik, Gehrke 2017, among others for more detail):

(39) Kogda ja vošel, vanna byla bystro na-poln-en-a.
when I walk.in-PST bathtub be-PST-F quickly PRF-fill-N/T-F
‘When I came in, the bathtub was filled fast.’

If semantic imperfectivity is part of the denotation of the N/T morpheme, the sentence in (39) would have been unable to escape being imperfective. But it is not. On the verbal construal, the sentence must be interpreted perfectively. In (39), the time of coming cannot be included in the time of filling, and the sentence cannot mean ‘When I walked in, the tub was being filled’. Therefore, there is no imperfectivity in N/T.[8]

Can it be the case that imperfectivity comes as part of the denotation of the *-ij-* morpheme, the second piece of morphology ASNs contain? Given what we know about this morpheme, it seems to be very unlikely. The *-ij-* morpheme is not only attested in ASNs. It can also derive nouns from non-derived adjectives. A few examples are shown in (40):

(40)

	Adjectival root	Deadjectival noun
a.	velik-	velič-**ij**-e
	‘big, great’	‘greatness’
b.	vesel-	vessel-**(i)j**-e
	‘funny’	‘fun’
c.	podob(n)-	podob-**ij**-e
	‘similar’	‘similarity’

[8] PPrt’ss will be taken up in Section 4.4, where their distribution will prove significant for a proper understanding of the function of the “secondary imperfective” morpheme YVA. There, following Paslawska von Stechow 2003, they will be analyzed as (result) state descriptions.

As such, they readily occur in what is traditionally called adjectival passive illustrated in (i).

(i) Kogda ja voše-l, vanna byla na-poln-en-a.
when I walk.in-PST be-PST-F bathtub PRF-fill-N/T-F
‘When I walked in, the tub was full (=in the state of having been filled)’.

(i) describes a target state attained after a filling-the-tub eventuality culminates, which is a state of being full. This state holds at the reference time. This makes (i) semantically different from (39). The latter is understood as referring to a culminated change of state that happens after the reference time.

The standard view about the derivation of sentences like (i) is that PPrt’s are integrated into a copular configuration in the same or similar way as non-derived adjectives (‘The bathtub is white’), see e.g. Paslawska & von Stechow 2003, Borik 2012, Borik & Gehrke 2017 for Russian, and Embick 2004 and Bruening 2014, among others, for a more general discussion). Whether not only (i) but also (39) can be accounted for on the assumption that PPrt’s denote target states is not entirely clear at present; see Privoznov 2015 who argues for a unequivocally positive answer to that question. I believe, however, that whatever the ultimate solution is, this does not affect the conclusion that N/T does not denote IPFV.

Adjectival stems like 'funny', 'great' etc. denote (gradable) properties of individuals. Apparently this is not the type of denotation that can be meaningfully combined with the imperfective. For cases like (40), imperfecitivy of *-ij-* would be extremely difficult if at all possible to defend, hence it will be difficult to maintain in general. One may stipulate that there are two *-ij-*'s, one occurring in ASNs and imperfecive, the other found in (40) and not specified for aspect. Plausibility of this analysis is highly dubious, however.

This is an argument against the claim that imperfectivity is built into the ASN morphology.

This leaves us with the hypothesis I want to argue for: ASNs are aspecless and it is for this reason they do not behave the way they would have if they were perfective[9]. Therefore, we have an argument for verb-external aspecuality. The empirical coverage of this argument is, however, restricted to "perfective" verbs, as it is the perfectivity effects that have been addressed in this section[10].

2.2. *v*P-external aspectuality

I hope to have convinced the reader that the perfective semantic aspect appears outside the projection that ASNs share, by hypothesis, with fully inflected clauses, which is designated as φP as in (41). Had it not been the case, ASNs would have been perfective, not aspectless.

(41) [… [$_{F_{i+1}P}$ … [$_{F_iP}$ … Asp … [$_{\varphi P}$ … verb …]]]]]

ASN

We have not yet identified φ, however. If φ=V^0 and φP = VP, we would only know that aspect is not part of V^0. This is a positive result, too: recall from the introduction that most Slvaic aspectologists tend to believe that aspect is a lexical characteristic of a verbs, hence is necessarily

[9] Cf. a similar conclusion achieved in de Valdivia *et al.*'s (2013) experimental study, namely, that "aspectual marks" in Russian nominalizations "do not have grammatical function" (de Valdivia *et al.* 2013:279).

[10] Prefixes like *na-* in *napisat'* 'write^{PFV}', *pod-* in *podpisat'* 'sign^{PFV}' and *pro-* in *pročitat'* 'read^{PFV}' in (1a-c) are lexical, as opposed to superlexical. The dominant view in the literature on Slavic prefixation (Babko-Malaya (1999), Ramchand (2004), Romanova (2004, 2007), Svenonius (2004, 2008), Tatevosov (2008, 2009, 2013a,b) and others; see, however, Žaucer (2009, 2010 and elsewhere) for an alternative view) is that superlexical prefixes are hierarchically higher, as schematized in (i):

(i) Superlexicals merge outside lexical prefixes
[Superlexical prefixes […. [Lexical prefixes]]]

If they are hierarchically higher, it can potentially be the case that Russian aspectuality is verb-external with respect to lexical prefixes, but verb-internal with respect to superlexical prefixes:

(ii) PFV external to lexical prefixes, internal to superlexical prefixes
[**PFV** Superlexical prefixes […. [Lexical prefixes]]]

However, it is not difficult to show that for superlexicals, ASNs differ from fully inflected clauses in exactly the same way as for lexically prefixed verbs. If so, the same line of argumentation as above applies to superlexicals, too, which leads to the conclusion that superlexicals cannot be as high as PFV. PFV merges outside superlexicals, which means that aspectuality is verb-external with respect to all prefixes. See Tatevosov 2013, 2015 for more detail.

a component of V^0. Now we can be sure that this is not the case. Still, PFV can be located low enough — not necessarily in the functional domain, as in (24), but in the VP-domain::

(42) $[_{VP}$ … **PFV** … $[_{V0}$ *napisa-*] …]

Therefore, we have to determine how much ASNs in Russian have in common with fully inflected clauses. If the logic behind (22) and (26)-(27) is correct, and this part of structure does not contain aspectual operators, then the larger it is, the higher those operators are located. The goal of this section is to show that ASNs minimally contain *v*P. Therefore, not only do ASNs provide us with evidence for verb-external aspectuality; they also argue for *v*P-external aspectuality.

In the literature, there is no general agreement about how much structure *nie*-ASNs and inflected clauses have in common in Russian and other Slavic languages. Rappaport (2000, 2001) argues that it is V^0 that undergoes nominalization in Russian. Polish, on the other hand, embeds VP under a nominal syntactic head. Schoorlemmer (1995) also claims that Slavic languages differs as to how many (extended) verbal projections ASNs can contain, but in her theory Russian *nie*-nominals are treated as VP embedding, while their Polish counterparts as AspP embedding. The view that deverbal nouns contain as much as AspP in Czech and Bulgarian is advocated in Prochazkova 2006 and Markova 2007, respectively. Pazelskaya and Tatevosov (2005, 2008) and Tatevosov (2008a) review previous proposals about Russian nominalizations and present arguments for an articulated structure within *nie* ASNs.

Standard diagnostics for the internal make-up of nominalizations discussed extensively in e.g. Alexiadou 2001 and much suqbsequent work, include temporal, aspectual, and agent-oriented adverbials as well as purpose adjuncts. If temporal and aspectual adverbials are VP-adjuncts (e.g., Ernst 2002, a.m.o.), their availability in nominalizations signals that the latter contain at least VP. Examples like (43) thus suggest that ASNs are minimally VP-embedding.

(43)	Jest’	pokazani-ja	dlja	okaza-n-ij-a	pomoshch-i	*nemedlenno.*
	exist.PRS	indication-PL	for	render-NMN-N-GEN	assistance-GEN	immediately

‘There are reasons for rendering assistance immediately.’

Note that non-derived event-denoting nominals like *vojna* ‘war’ do not allow for this type of adverbial modification:

(44)	net	povoda	dlja	vojny	so	Švambraniej	(??nemedlenno).
	NEG	excuse-GEN	for	war-GEN	with	Š.-INSTR	immediately

‘There is no excuse for a war with Švambrania immediately.’

The contrast in (43)-(44) suggests that licensing of the adverbial in not semantic. If (43) was acceptable because ‘rendering’ is event-denoting, (44) would be as good as (43), which is not the case. We can conclude, therefore, that the ASN in (43) contains a VP, to which the adverbial ‘immediately’ legitimately adjoins[11].

[11] It should be noted that temporal adverbials exhibit a remarkably different behavior: *nie*-ASNs and non derived event-denoting nominals both accept them, cf. *okazanie pomošči pozavčera* ‘rendering assistance the day before yesterday’ and *vojna so Švambraniej v prošlom godu* ‘the war with Švambrania last year’. Temporal adeverbials thus do not provide a suitable diagnostics for the structure of ASNs.

Crucially for our purposes, *nie*-ASNs can be combined with agent-oriented adverbials and purpose adjuncts, as in non-elicited (45) and (46), respectively:

(45) nanes-en-ij-e *umyshlenno* telesn-yx povrezhden-ij
inflict-N/T-NOUN-NOM deliberately bodily-GEN.PL injury-GEN.PL
'inflicting injuries deliberately'

(46) Na-pisa-n-i-e pis'm-a, čtoby skaza-t': "požalujsta, prosti",—
PRF-write-N/T-NOUN-NOM letter-GEN so.that say-INF please forgive.IMP
eto otličnyj sposob vyrazi-t' seb-ja.
this excellent was express-INF oneself-ACC
'Writing a letter to say "Please forgive me" is an excellent way of expressing yourself.'

(45) and (46) indicate that *nie*-ASNs are associated with an implicit agent, which licenses adverbials like 'deliberately' in (45) and infinitival purpose clauses like 'to say 'please forgive me'' in (46). To the extent that external arguments, even if implicit, are introduced by *v*, (45)-(46) and similar examples provide evidence for *v*P inside *nie*-ASNs.[12]

Given that ASNs contain *v*P, and PFV appears outside the maximal constituent ASNs share with fully projected clauses, it follows that both verb-external and *v*P-external aspectuality holds for "perfective" verbs.

2.3. Aspeclessness of "imperfective" ASNs

Can the same line of reasoning be extended to cover "imperfective" verbs as well? Specifically, can one show that "imperfective" ASNs are not imperfective, but aspectless, hence imperfectivity is as verb external as perfectivity? Unfortunately, not.

Let us discuss the complication in detail. The imperfective in Russian, like its counterparts in other languages, allow for the progressive and habitual readings. On the progressive reading, the sentence in (47), just like its English counterpart, conveys that at the right boundary of a (rather short) interval of my walking in, the writing activity has not yet reached the point where the letter has been completely written.

(47) Kogda ja vošhe-l, Volodja pisa-l pis'm-o Feliks-u.
when I walk.in-PST.M V. write-PST.M letter-ACC F.-DAT
'When I walked in, Volodja was writing a letter to Felix.'

On the habitual reading, the sentence describes a regularity, which, in (48), involves recurrent writing of a lette.

(48) Raz v nedel-ju Volodja pisa-l pis'm-o Feliks-u.
once in week-ACC V. write-PST.M letter-ACC F.-DAT
'Once a week Volodja would write a letter to Felix.'

[12] See, however, Alexiadou 2001: 111 for significant qualifications. Multiple issues surrounding syntactic reality of implicit arguments have recently been discussed in Bhatt and Pancheva 2006 and Landau 2010, among others.

(49)-(50) show that the same two readings are readily available for ASNs[13].

(49) pisa-n-ij-e pis'm-a v moment moego prixoda
write-N/T-NOUN-NOM letter-GEN in moment my coming-GEN
'writing of a letter at the time of my coming'

(50) pisa-n-ij-e pis'm-a raz v nedel-ju
write-N/T-NOUN-NOM letter-GEN once in week-ACC
'writing of a letter once a week'

In (49), the ASN *pisanije* 'writing' derived from the "simplex imperfective" stem *pisa-* 'write^{IPFV}' occurs. (49) indicates that this ASN, not surptisingly, allows for the interpretation where the time of coming is included into the time of writing. (50) shows the habitual reading of the same ASN.

Examples like (49)-(50) are compatible with ASNs being either imperfective or aspectless. In both cases, they are expected to have both readings. If the ASNs are imperective, PROG and HAB are there because they are what all imperfectives share. If the ASNs are aspecless, (49)-(50) are available because nothing in their semantics prevents them from being interpreted in whatever way we want.

Decisive evidence could have come from the availability of the perfective construal for an ASN based on an "imperfective" stem. Such a construal is indeed available for "imperfective" ASNs, as the non-elicited (51) illustrates.

(51) Ja do six por s užas-om vspomina-ju pisa-n-ij-e
I until these times with horror-INSTR remember-PRS.1SG write-N/T-NOUN-ACC
kursov-oj za dve noči.
term.paper-GEN in two nights
'The memory of writing a term paper in two nights still scares me.'

(51), unlike (47), conveys that the writing eventuality culminates and the term paper is completed. Moreover, speakers have the strong intuition is that replacing (51) with the corresponding prefixed ASN *napisanie* does not make truth-conditional difference:

(52) Ja ... vspomina-ju... na-pisa-n-ij-e kursovoj za dve noči.
I remember-PRS.1SG NA-write-N/T-NOUN-ACC term.paper in two nights
'The memory of writing a term paper in two nights still scares me.'

The problem is that examples like (51) do not show that the ASN is **not** imperfective. Apart from the progressive and habitual readings, the imperfective in Russian fully inflected clauses allows what is commonly referred to as **general factual** reading. It is illustrated in (53).

(53) — Would you like me to give you "David Copperfield"? — No, thanks.
Ja ego čita-l.
I it.ACC read-PST.M

[13] (49)-(50) are simplex imperfective stems. The pattern for secondary imperfectives is exactly the same, so for the sake of brevity we leave out corresponding examples.

'I have read it.'

What we get under the general factual construal is an interpretation reminiscent of the existential perfect in English. (53) indicates that there was an event of the speaker having read 'David Copperfield' that occurred at some interval in between the speech time and some salient time in the past.

The general factual reading of the imperfective has been much discussed in the literature (see Arregui et al. 2014, Altshuler 2012, Grønn 2003, 2014, Mehlig 1981, 1995, Padučeva 1996, among others) and analyzed in a variety of ways. What is crucial in the context of the present discussion is that under this reading accomplishment event predicates can describe culminated events. (53), given the context, implies that the speaker performed reading of the novel to completion. Therefore, on this reading, the imperfective cannot be distinguished from the perfective by whether a culmination has been attained. (Traditional Slavic aspectology describes this as "aspectual competition", see Maslov 1984 and elsewhere.) This means that examples like (51) **do not show** that ASNs are not imperfective. They can indeed pattern the way they do because they are truly aspecless, and are thus compatible with any aspectual construal including the perfective one. But they can also be imperfective, the interpretation we see in (53) being an instance of the general factual reading. There is no obvious way of telling these two options apart[14]. An argument for verb-external aspectuality based on "imperfective" ASNs cannot be built.

Does that mean that there is no way of establishing verb-external aspectuality for "imprfective" verbs? Fortunately, this is not the case. In the next section, I will make use of the second strategy mentioned in section 1.2 of showing that verb-external and *v*P-external views of aspectual interretation are correct. It is repeated as (54), where, as before, "Asp" is a grammatical element that contributes aspectual interpretation, and α is the topmost piece of structure spelled out as "verbal morphology":

(54) Asp > *v* > α

As we will see shortly, there are good empirical arguments that "imperfective" configurations reduce to (54), so verb- and *v*P-external aspectuality can be argued for even if evidence from ANSs discussed above is inconclusive.

3. Imperfectivity and "imperfective" morphology

The argument I develop in this section aims at establishing both verb-external and *v*P external imperfectivity. I will start with evidence that semantic imperfectivity, IPFV, is outside of *v*P:

(55) [… IPFV … [… *v* …]]

[14] The general factual imperfective in Russian, despite superficial similarity, does not show distributional restrictions characteristic of the existential perfect in English (Iatridou et al. 2001, Katz 2003, Klein 1992, McCoard 1978, Pancheva and von Stechow 2004, Portner 2003). It can co-occur with temporal adverbials, shows no lifetime and current relevance effects, etc. Had it been otherwise, this would have given some hope as to detecting whether (51) manifests the general factual reading of the imperfective.

This suffices to argue for *v*P-external imperfectivity. However, it is not immediately obvious how "the imperfective morphology", the secondary imperfective morpheme YVA, is located with respect to IPFV and *v*. The second part of this section will be devoted to showing that YVA is internal to *v*P:

(56) [… *v* … [… yva …]]

From (55) and (56) it follows that YVA is not interpreted as IPFV in the position where it is merged, which amounts to establishing that IPFV is verb-external.

3.1. IPFV is outside of *v*

Consider (55) first. That Asp hierarchically dominates *v* is a common assumption made in the literature on tense-aspect architecture (see e.g. a recent survey by Beck & von Stechow 2015). Semantic aspects operate on complete eventuality descriptions. An eventuality description is complete at the point where the internal make up of an event, its descriptive properties and participants are identified. The standard view is that this happens at the *v*P level, so Asp cannot be *v*P internal[15]. This idea seems to be so straightforward that it is typically accepted without being argued for.

However, given our current purposes, the IPFV > *v* ordering in (55) should not be taken for granted neither in general, nor in its application to Russian, whose aspectual architecture is, by the common view, different from that of the languages like English.

Tatevosov (2015a) explores the consequences of assuming that the opposite holds: IPFV is *v*P-internal, as in (57), and takes an incomplete eventuality description as its argument.

(57) [… *v* … [… IPFV …]]

The contribution of *v* has been much debated over the past few years. Tatevosov (2015a) relies on the literature on syntactically represented predicate decomposition, which builds on the assumption that the event structure is created in the syntax. On such a **constructionalist** view of event structure, it is possible to connect subevents to specific syntactic heads and their projections. In particular, there is a number of proposals (Folli 2002, 2014, Pylkkanen 2002, Ramchand 2008, and literature therein, see also the survey by Harley 2012) suggesting that the same head can introduce both the external argument and an activity subevent, which the external argument is a participant of[16]. To the extent that the external argument originates in spec, *v*P, the activity subevent comes out as part of *v* denotation. Tatevosov (2008b) and Lyutikova, Tatevosov (2012, 2014) discuss arguments from non-culminating accomplishments and causativization that support the view of *v* as the locus of the agent's activity. For the sake of space, I cannot review these arguments in any detail.

[15] In the systems that assume *v*P-internal aspectual head (e.g. Travis 2010 and elsewhere), such a head does not typically introduce "viewpoint aspects" like progressive, perfective, etc. Rather, its role is to contribute to the computation of (a)telicity and other aspects of meaning pertaining to the Arkionsart / eventuality type / lexical aspect domain.

[16] For Pylkkänen, though, the introduction of the external argument and the activity subevent within the same projection only happens in what she calls Voice-bundling languages. (Russian is arguably one of those.) Harley (2013) argues that the activity subevent and its participant are introduced by separate but adjacent heads in all languages. I believe that if Harley is right, the argument developed in this section will not be affected: the below discussion translates more or less mechanically into Harley's framework.

The fact that *v* introduces an activity subevent gives certain promise as to telling the two orderings in (55) and (57) apart. If (part of) the denotation of *v* is an activity, by (57), it must be outside of the scope of IPFV[17]:

(58) agent's ACTIVITY > IPFV > CHANGE OF STATE

The contribution of IPFV is the imperfective aspectual operator or, for the authors who assume the ambiguity view of IPFV, a family of operators. What follows does not depend on whether the progressive, habitual and other possible readings of IPFV are reducible to the same core meaning (see Cipria & Roberts 2000, Deo 2009, Arregui et al. 2014 for a few recent proposals on how such a unification can be achieved; see especially Klein 1995 and Grønn 2003 for an analysis of Russian imperfective). I will only need the progressive facet of the imperfective, abbreviated as $IPFV_{PROG}$.

Note that (58) restricts a class of admissible analyses of IPFV type-theoretically. Depending on the assumed architecture of the aspectual and temporal domains of a clause, existing proposals about IPFV (Altshuler 2013, 2014, Arregu et al. 2014, Cipria and Roberts 2000, Dowty 1977 and elsewhere, Landman 1992, Portner 1998, Varasdi 2014, to mention just a few) include types <<v,t>,<v,t,>>, <<v,t>,<i,t>> or <<i,t>,<i,t>>, where *v* and *i* are types of events and intervals, respectively. Some explore situation semantics, treating IPFV as a modifier of type <<s,t>,<s,t>>. With (58), however, IPFV should be a function that outputs a predicate of events, not a predicate of times or a proposition, since otherwise it will fail to be combined with the activity subevent introduced higher up in a tree by v. To be specific, one can think of Landman's analysis of the progressive where $IPFV_{PROG}$ maps event predicates to predicates of event stages, but nothing hinges on the specifics of this analysis.

One type of environment that make the fallacy of (57) visible are **ongoing attempt scenarios**. To create such an environment one needs a non-incremental predicate where the change of state happens at the minimal final part of the activity. Consider (59):

(59) Context: the lock in the door is not functioning properly, and the agent tries to open the door and get in:
Volodja otkry-va-et dver'
V. open-YVA-PRS.3SG door
'Volodja is opening the door.'

(58) transeferred to (59) yields the scope relations in (60):

(60) V's ACTIVITY > $IPFV_{PROG}$ > CHANGE OF STATE of the door

(60) predicts the following semantics for (59): there is a (complete) agent's activity in the evaluation world that brings about a stage of the change of state of the door: 'Volodja did something so that the door is attaining a state of being open'. However, (59) means something

[17] Details of existing decompositional proposals vary across various dimensions. For space reasons, I cannot discuss parameters of variation and do justice to the body of arguments that determine theoretical choices in each partiand case. In (58), I am using a quasi-formal notation involving unanalizeable elements ACTIVITY and CHANGE OF STATE, which I believe to be compatible with most theoretical approaches. A more explicit model-theoretic analysis of *v*P denotations will be elaborated in Section 4.

very different: there is a stage of opening activity (which will eventually culminate in relevant worlds) and no change of state of the door at all.

Therefore, if $IPFV_{PROG}$ appears below *v* and takes a description of changes of state as an argument, one would predict the meaning which imperfective sentences in Russian do not and, in fact, cannot have. We can conclude that the Activity > $IPFV_{PROG}$ > Change of state ordering in (58) and (60) leads to unwelcome empirical consequences.

No complications emerge if $IPFV_{PROG}$ takes scope over the whole complex eventuality:

(61) $IPFV_{PROG}$ > V's ACTIVITY > CHANGE OF STATE of the door

(61) corresponds to the set of stages of a complex event consisting of an opening activity and a change of state where the door gets opened. An activity that aims at opening the door but has not (yet) brought about change does count as a stage of such a complex event. Therefore, (61) successfully captures the meaning of the imperfective under the ongoing attempt scenario in (59).

To sum up, having considered two possible orderings of IPFV with respect to the activity subevent in (55) and (59), one can conclude that the former makes wrong predictions for at least one type of imperfective environments (see more discussion in Tatevosov 2015a). This structure is interpretable, but the interpretation comes out wrong, which means that (57) cannot be maintained. This leaves us with (55) as the only viable alternative, given that it successfully captures judgments about the truth conditions of sentences like (59). The argument based on (57) is thus essentially a *reductio ad impossibilem*.

To recapitulate: if activity subevents appear as (part of) the denotation of *v*, IPFV must be outside *v*P:

(62) [… IPFV … [... *v* …]]

3.2. YVA is inside *v*P

The conclusion in (62) is compatible with two main hypotheses about the location of the "secondary imperfective" morpheme YVA, as shown in (63)-(64):

(63) [… IPFV **yva** ... [... *v* ...]]

(64) [… IPFV ... [... *v* ... [... **yva** …]]]

Both (63) and (64) amount to *v*P-external semantic imperfectivity. But in (63), YVA occurs in the same position where it is interpreted, and in this respect (63) is on the same line as verb-internal theories of Russian-aspect. Besides, the fact that YVA is located in the functional domain of a clause makes (63) some variant of a theory that treats the "secondary imperfective" morpheme as a piece of inflectional morphology (see fn. 3 in Section 1.1).

In (64), IPFV and YVA are located at a distance, *v* being structurally higher than the secondary imperfective morphology. (As before, the fact that YVA is separated from IPFV, does not entail that it is not interpreted in the position where it merges. This only means that it is not interpreted as IPFV.) To argue for verb-external and *v*P-external imperfectivity we need, therefore, to find a way of discarding (63) in favor of (64).

My strategy will again be to assume that (63) is right, test it against a new set of data and make sure that it makes unwelcome empirical predictions. To achieve this, I will take into

account the following well-known property of Russian verbal system (discussed in Karcevski 1927 already (see Karcevski (2004:122 *et seq.*); see also Isačenko 1960 for details): after "secondary imperfectivization", a verb stem can still combine with a certain class of prefixes, creating a new derived "perfective" stem. A few examples based on the "secondary imperfective" stem *otkry-va* 'open^{IPFV}' are shown in (65) (brackets indicate morphological constituency):

(65) a. **pere**-[[otkry]-va]-t'
'open one by one'
b. **za**-[[otkry] -va]-t'
'start opening'
c. **na**-[[otkry] -va]-t'
'open a quantity of sth.'
d. **po**-[[otkry]^{P} -va]$^{\mathbf{I}}$-t'
'spend some time trying to open sth.'
e. **po**-[[otkry]^{P} -va]$^{\mathbf{I}}$-t'
'open one by one'

Prefixes in (65) include what Tatevosov (2009, 2013a, b) calls selectionally restricted superlexicals, or SR-prefixes. To build any verb from (65), we begin with a (prefixed) "perfective" stem *otkry-*, perform "secondary imperfectivization", which derives *otkry-va-*, and merge a prefix on top of it:

(66) [... SR-prefixes … [… yva … [… otkry- …]]]

If, by assumption, (63) holds, (63) and (66) together amount to (67):

(67) [... SR-prefixes … [… IPFV **yva** ... [... *v* ...]]

The prediction of (67) is straightforward:

(68) a. SR-prefixes that are part of verbs like (65) would always outscope *v* ...
b. unless, being pronounced outside of *v*P, they can be interpreted below *v*.

If (68a) is shown to be a wrong prediction, (63), which entails (67) and (68a), will be falsified, and we will be left with (64), which does not run into the same complication. With (64), SR-prefixes can merge on top of YVA, but still be located within *v*P:

(69) [… [... *v* ... [... SR-prefixes … [… **yva** ... […]]]]]

The crucial prerequisite for this reasoning to work is the condition in (68b). (68b) refers to the following configuration, in which a prefix is interpreted under *v*, but is pronounced much higher:

(70) [... SR-prefixes … [… IPFV **yva** ... [... *v* ... [… || SR-prefixes|| …]]]

If (70) can be excluded, the fact SR-prefixes **do not** outscope *v* will uneqiovocally signal that (68a) is wrong, hence (63) cannot be maintained. If, on the other hand, (70) is viable, the same fact will be totally uninformative.

Does (70) look like an admissible configuration? Under the current assumptions, a piece of morphology M and its interpretation || M || need not be located in the same position. The proposal aims at justifying the view that semantic aspects are hierarchically separated from what looks like their morphological exponents, so there is no a priori reason to believe that the same cannot happen with SR-prefixes and semantic operators they are associated with.

One type of relationship between interpretation and exponence where the two are at a structural distance is known from the studies of concord phenomena. However, concord structures, as commonly understood in the literature (see, e.g., Zeijlstra 2012), involve (possibly) unpronounced but interpretable material c-commanding a semantically dependent uninterpretable morphological element. In (70), the relationship between the prefix and the associated interpretable element is exactly the opposite. If (70) is a concord structure, it is a very unusual concord structure. But independently of that, I believe it is possible to reject (70) entirely on empirical grounds.

To do that, we can employ the same logic as in the case of perfectivizing prefixes and PFV in Section 2. (6), repeated as (71), predicts that there is a stage of derivation, φ, that includes a prefix but excludes PFV.

(71) The "perfective stem" is part of α, but perfectivity is not
[… [… [… PFV [… [φ … ***na****-pisa-* …]]]]

Generalizing over this case, one can suggest a schema for determining if two elements *a* and *b* related by a certain dependency are located at a structural distance:

(72) To check whether *a* is hierarchically higher than *b*, [… a … [… b …]], find a stage of derivation containing *b*, but not *a*.

In the case at hand, (70) predicts that there is a stage of derivation where a meaning element is present, but the prefix associated with it is not:

(73) || SR-prefix || is part of φ, but SR-prefix is not
[… [… […SR-prefix …[… [φ … || SR-prefix || …]]]]]

A natural candidate for serving the relevant configuration would again be argument supporting nominalizations.

Consider one of the SR-prefixes, the inchoative *za-*[18]. The verb ***za****-otkry-va-t'* 'start opening^{PFV}' in (65b) is illustrated in the non-elicited (74):

(74)	mal'čiška	***za*-otkry-va-l**	rot	kak	ryba
	boy	PRF-open-YVA-PST.M	mouth	like	fish

'The boy started opening his mouth like a fish'.

Let INCH be the denotation of *za-*. If (70) and (73) hold, ASNs should be able to contain INCH even if the prefix *za-* is not part of their morphological make up. Indeed, ASNs, which have the structure in (52), minimally contain *v*P, and INCH is inside *v*P, according to (70).

[18] *Za-* and other prefixes in (65) can have other interpretations as well, see e.g. Kagan 2015 for a recent discussion. Those other uses of SR-prefixes are irrelevant for the argument.

Therefore, with (70) and (73), ASNs are expected to license the inchoative reading in the absence of *za-*. The prediction is not borne out, no matter if YVA is part of an ASN, as in (75b), or not, as in (75a):

(75) a. otkry-t-i-e dver-ej
open-NNM-N-NOM door-GEN.PL
1. 'opening of the doors'
2 *'starting opening of the doors'

b. otkry-va-n-i-e dver-ej
open-YVA-NMN-N-NOM door-GEN.PL
1. 'opening of the doors'
2. *'starting opening of the doors'

As is evidenced by (75), INCH cannot be part of ASNs *otkry-tie*/*otkry-vanie*. This gurantees that (70) cannot be the case with *za-*. The inchoative *za-* in (65b) and other SR-superlexicals arguably merge in the same position, since their syntactic behavior is similar enough (Tatevosov 2013). Hence, if (70) can be excluded for *za-*, one can safely extend this conclusion to other SR-prefixes:

(76) *[... SR-prefixes … [... [… || SR-prefixes|| …]]]

This means that the condition in (68b) is satisfied, and the prediction in (68a) can be properly checked. According to (68a), SR-prefixes outscope *v*. Fortunately for our purposes, at least one of the prefixes in (65), the distributive *pere-,* offers us a way of falsifying that. The distributive operator the prefix is associated with, call it DISTR, takes scope over DPs, and we can make use of this fact to detect its position with respect to the external argument and, in this way, to *v*. We do not need to make any specific assumptions about the meaning of DISTR, see Ferreira 2005, Kratzer 2007, Champollion 2010, Landman 2000, Lasersohn 1995, among many others for relevant proposals.

The crucial fact is: DISTR exhibits fairly visible subject-object asymmetry, which has been recognized in the literature on Russian "distributive Aktionsart" (see, e.g., Isačenko 1960: 287-288):

(77) Razbojnik pere-otkry-va-l (vse) dveri.
thief PRF-open-YVA-PST.M all doors
'The thief opened (all) the doors one by one.'

(78) ??(Vse) razbojniki pere-otkry-va-l-i Sezam.
all thieves PRF-open-YVA-PST-PL Sesame
'(All) the thieves opened Sesame one by one.'

Examples in (77)-(78) show that the object but not the subject falls within the scope of DISTR. On the standard assumption that the external argument DP originates in Spec, *v*P, it follows that DISTR is below *v*P:

(79) [… [$_{vP}$ DP$_{Ext.Arg.}$ *v* … [DISTR …]]]

Therefore, by (79), *v* > DISTR holds. And by (76), *pere-* cannot be higher than DISTR:

(80) *[... *pere-* … [... [… DISTR …]]]

But by the initial assumption in (67), *pere-* is higher than *v*. This brings about a contradiction, which suggests that (63) has been proven wrong.

The alternative in (64) is entirely compatible with these data. (81) brings the observations together:

(81) a. *pere-* is higher than YVA, by (66)
b. DISTR is not lower that *pere-*, by (76)
c. *v* is higher than DISTR; examples (77)-(78)

It follows that (82) holds, which is exactly what (64) predicts to be licit:

(82) [… [$_{v\text{P}}$ $\text{DP}_{\text{Ext.Arg.}}$ *v* … [… DISTR (…) *pere* ... [... yva …]]]]

To summarize, this section achieves two related goals. First, I have argued that semantic imperfectivity originates outside of *v*P, the minimal projection containing a complete event description. Merging IPFV at any lower stage of derivation would make it take a description of partial eventualities as its argument and yield inaccurate semantic predictions about the meaning of imperfective sentences. Secondly, I have developed an argument that the YVA morpheme, traditionally labeled as the "secondary imperfective", merges inside *v*P. From these two generalization both verb-external and *v*P-external imperfectivity follow, as schematized in (83):

(83) [… IPFV … [… *v* … [… yva …]]]

YVA is thus not interpreted as IPFV in the position where it is merged.

(83) can be taken to further argue that IPFV merges outside (the projection of) the simplex verbs like *pisa-* 'write' or *čita-* 'read' as well. (Recall from Section 2 that such verbs are traditionally considered imperfective, but they lack YVA and other overt "aspectual moprology".) This argument is fairly straightforward. Consider (1c), for example. A simplex imperfective verb like *čita* in (1c) first merges with the prefix and then undergoes "secondary imperfetivization". The hierarchical structure of the secondary imperfective therefore looks like (84), where YVA merges outside the lexical prefix and outside the simplex stem:

(84) [… yva … [… Prefix … [… simplex stem]]]

From (83) and (84) it follows that IPFV is external to the "simplex imperfective" just as it is external to the "secondary imperfective".

4. A neo-Kleinean theory of aspectual invariance

4.1. Emerging system

The picture that emerges from the previous two sections starts looking clearer and more consistent. Russian verbs are lexically aspectless. "Aspectual morphology" does not contribute semantic aspects and is *v*P-internal. Aspectual operators originate in the functional domain of a clause, outside of *v*P. The generalization that semantic aspects are structurally dissociated from "aspectual morphology" forces us to conclude that they are phonologically silent. Structures projected if the starting point of a derivation are verbs from (2a-d) are shown in (85)-(88):

(85) "Simplex imperfective"
a. *pisa-t'* 'write^{IPFV}, in (2a) / *čita-t'* 'read^{IPFV}, in (2c)
b. [… [… IPFV … [$_{v}$P … [… *pisa-* / *čita-* …]]]]

(86) "Simplex perfective"
a. *da-t'* 'give^{PFV}, in (2d)
b. [… [… PFV … [$_{v}$P … [… *da* …]]]]

(87) "Prefixed perfective"
a. *na-pisa-t'* 'write^{PFV}, in (2a) / *pod-pisa-t'* 'sign^{PFV}, in (2b)
b. [… [… PFV … [$_{v}$P … [… *pisa-* [… *na-* / *pod-* …] …]]]][19]

(88) "Secondary imperfective"
a. *pod-pis-yva-t'* 'sign^{IPFV}, in (2b)
b. [… [… IPFV … [$_{v}$P … [… *-yva-* .... [… *pisa-* [… *pod-* …] …]]]]]
a′. *pro-čit-yva-t'* 'read^{IPFV}, in (2c)
b′. [… [… IPFV … [$_{v}$P … [… *-yva-* .... [… *čita-* [… *pro-* …] …]]]]]
a″. *da-va-t'* 'give^{IPFV}, in (2d)
b″. [… [… IPFV … [$_{v}$P … [… *-yva-* .... [… *da-* …]]]]]

As we saw in Section 1, Russian verbs like those in (85)-(88) show aspectual invariance in the sense that there is no choice for them between PFV and IPFV. Most simplex verbs are tied up to IPFV; the rest has to appear with PFV, as in (85)-(86). Verbs where the last step of derivation is prefixation, exemplified in (87), have to take PFV; verbs where the YVA morpheme is the topmost derivational element, (88), are bound to surface with IPFV. Overall, one can identify the aspectual value of a clause by looking at the topmost element in the derivation of *v*P, which can either be a derivational morpheme, or, in the absence of such, the verb root itself.

It is this distribution that had guided the tradition towards the verb-internal view of aspect. The evidence from Sections 3-4 invites us to think that this guidance has been fundamentally mistaken. Overall, (85)-(88) make Russian look much more like other languages. But now a theory is burdened with the problem that the verb-internal view had successfully prevented from arising:

(89) Why is Russian a language that features aspectual invariance?

(85)-(88) tell us that in Russian and languages like Russian there are two hierarchically asymmetric positions that enter a certain relationship. One of them is the position where aspectual operators appear. The other one is (an element within) *v*P. So if *v*Ps in (85) and (88) can only surface with IPFV, there must be something that prevents them from successfully combining with PFV. The same mechanism should rule out a combination of *v*Ps in (86) and (87) with IPFV. We need, therefore, to come up with a hypothesis what mechanism we are dealing

[19] As before, I am assuming along the lines of Svenonius 2004, 2008, Romanova 2004, 2006, Ramchand 2004, Tatevosov 2009, 2013, Tolskaya 2014, that lexical prefixes like *na-* and *pod-* in (87) originate within the complement of V and are semantically interpreted as target state descriptions. Their target state introducing capacity will be addressed in section 4.3.

with and what makes it active in the grammar of Russian. This would reconcile aspectual invariance with verb-external and *v*P-external view of Russian aspectual system.

I see two possible ways to go at this juncture. Consider, for example, (87). (87) represents a prefixed perfective configuration. One reason for it to be the way it is could be that the prefix wants a higher operator to be perfective. The other reason could be that the perfective operator wants a lower *v*P to be prefixed. Generalizing over (87), the two approaches to aspectual invariance are:

(90) a. The topmost morpheme in the derivation of *v*P restricts the range of aspectual operators available higher up in a clause.
b. An aspectual operator imposes restrictions on a configuration generated at the *v*P level.

In the next two sections I will explore both (90a-b) and conclude that the latter faces less empirical complications and thus looks like a preferable option.

4.2. "Aspectual morphology" as agreement morphology

(90a) can be implemented by suggesting that the relationship we are trying to identify is essentially agreement in the style of Pesetsky, Torrego 2007 and elsewhere. Aspect is a formal property of "verbal" lexical items, verb stems, prefixes, and the secondary imperfective morpheme. All of them bear uninterpretable valued aspectual features. The phonologically null Asp contains their interpretable unvalued counterparts. Asp probes into its c-commanding domain, and as soon as an appropriate goal is found, it gets valued via Agree, as shown in (91)-(94).

(91) Simplex "imperfective" stem
[… [$_{AspP}$ Asp … [… [… *pisa-* … […]]]]]
*i*Asp [1] *u*Asp ipfv[1]

(92) Simplex "perfective" stem
[… [$_{AspP}$ Asp … [… [… *da-* … […]]]]]
*i*Asp [1] *u*Asp pfv[1]

(93) Prefixed stem
[… [$_{AspP}$ Asp … [… [… Prefix … […]]]]]
*i*Asp [1] *u*Asp pfv[1]

(94) Secondary imperfective stem
[… [$_{AspP}$ Asp … [… [… *-yva-* … […]]]]]
*i*Asp [1] *u*Asp ipfv[1]

A direct implication of (91)-(94) is: with respect to Asp, aspectual morphology is agreement morphology. It is not **just** agreement morphology though: pieces of morphology have intrinsic meanings on their own, even if distinct from grammatical perfectivity/imperfectivity. For instance, superlexicals have clearly identifiable and compositional meaning (see above); lexical prefixes contribute to event-structural aspects of the meaning of *v*P, express spatial and

directional qualifications and have further effects on the lexical meaning and argument structure, and so on.

A proposal along similar lines is Arsenijević 2012 and related work. Arsenijević argues, for independent reasons, that prefix is a phonological signature of an agreement relation between the verb stem, prefix and aspectual head. In his system, aspect is uninterpretable on the verb and on the prefix (analyzed as a preposition), but is interpretable (but unvalued) on Asp.

Unlike in (91)-(94), Arsenijević assumes no semantic aspects like PFV and IPFV: values that interpretable occurrences of a feature receive from their uninterpretable valued counterparts are identical to the prefixes themselves (e.g., Asp: *pod*, Asp: *pro* and so on). Besides, Asp's are sufficiently local to the projection of a preposition they agree with. Despite these differences, however, the crucial idea underlying Arsenijević's work, if I understand it correctly, is much in the spirit of (91)-(94): aspect is uninterpretable on "aspectual morphology".

However attractive this line of thinking about the relationship between aspectual morphology and aspectual interpretation may look, its advantages come at a cost. There are cases where *u*Asp does not seem to have a chance to agree with a matching *i*Asp (or, at least, quite a lot of additional stipulations are needed to establish that it does).

One such case is served by ASNs, discussed extensively in Section 2. Recall the main result of this section: within nominals, clausal structure is not projected to the point where semantic aspects appear. But it is at this point where *i*Asp enters, by hypothesis, the derivation. As a result, in ASNs there is no *i*Asp for *u*Asp to agree with, as shown in (95):

(95) $[_{N}$ …-ij- $[_{Nominal}$ -n- … [… [… Prefix … […]]]]]
*u*Asp pfv

A valued uninterpretable feature that have never entered the agreement relation is supposed to cause the derivation to crash. The very fact that ASNs are well-formed starts looking unexpected and requires additional explanation. Note that assuming that *u*Asp in ASNs agrees with the nominalizing morphology itself can hardly be a solution. Had it been the case, one would predict that ASNs bear semantic aspects, contrary to the fact.

A related complication appears as soon as one recognizes an old problem with verbs that contain multiple pieces of "aspectual morphology". Consider (1c) again, repeated as (96):

(96)

čita-t' 'read^{IPFV},	*pro-čita-t'* 'read^{PFV},	*pro-čit-yva-t'* 'read^{IPFV},
read-INF	PRF-read -INF	PRF-read-YVA-INF

On the traditional view, the simplex verb is imperfective. Prefixation results in perfectivization. Seconday imperfectivization creates an imperfective verb again.

Traditional Slavic aspectology has never been very explicit about how exactly these operations work, each of which seems to cancel out the effects of the previous one. Technically, however, it is not difficult to build up a theory in which any aspectual operator can combine with the outcome of application of another aspectual operator. (97)-(99) illustrate the simplest possibility:

(97) Simplex "imperfective" stem: built-in imperfectivity:
$\lambda e. \ldots \exists e' [\ldots \wedge read(e') \wedge e \subseteq e' \wedge \ldots.]$

(98) Prefixed perfective: maximal events from the extension of the complement
a. λP. λe. … max(P)(e) …
where max(P)(e) = 1 iff P(e) ∧ ∀e′ [e ⊂ e′ → ¬P(e′)]
b. λe. … max(λe′. … ∃e″ [… ∧ read(e″) ∧ e′ ⊆ e″ ∧ ….])(e) …

(99) Imperfective: (not necessarily proper) parts of an event from the extension of the complement
a. λP. λe. … ∃e′ [… P(e′) ∧ e ⊆ e′ …]
b. λe. ... ∃e′ [… max(λe″. … ∃e‴ [… ∧ read(e‴) ∧ e″ ⊆ e‴ ∧ ….])(e′) ∧ e ⊆ e′ …]

In (98)-(99), we take both aspectual operators to be of the modifier type <<v,t>, <v,t>>. The imperfective in (99) is a partitive operator. It creates a predicate that is true of any part of some event from the original extension of its complement, (99a-b). The perfective cancels out the effect of the imperfective by extracting maximal entities in from the extension of its argument, (98a-b). It is not difficult to see that (99b) denotes the same events as (97) does. The system can be further extended (e.g. intensionalized) to handle the imperfective paradox, Slavic aspectual compositional effects, polysemy of the Russian imperfective, and so on.

If one believes that the traditional analysis is right, this seems to be the most straightforward way to go. However, the overall architecture of the theory does not look appealing, since the system is tremendously redundant. Why would a language develop a means of creating an infinite loop where morphological operations go back and forth between predicates of complete and partial eventualities?

With the verb-external architecture, the issue of multiple application of aspectual operators does not arise, since there must be one such operator per clause, but the problem re-appears through the back door. Aspect is now an uninterpretable feature on the verb stem, prefixes and secondary imperfective morpheme. What happens if they co-occur? Consider (100):

(100) [… [$_{\text{AspP}}$ Asp … [… [… yva … [… pro čita …]]]]]
*i*Asp [1] *u*Asp ipfv[1] *u*Asp pfv *u*Asp ipfv

In (100), the highest occurrence of the *u*Asp feature agrees with its interpretable unvalued counterpart. The other two do not, however. This captures the generalization that it is the topmost piece of morphology that matters for establishing (im)perfectivity of the whole. However, the features on *pro-* and *čita-* are now as offensive for the derivation as a feature that fails to agree in ASNs, (95).

One can find a way around this problem and make the system work. But all solutions that suggest themselves require substantial additional stipulations. For example, one can suggest that every piece of verbal morphology probes into its complement and agrees with a lower uAsp feature. In (100), *u*Asp on the stem *čita-* is then discarded by some feature on the prefix *pro-*, *u*Asp on *pro-* by some feature on the YVA morpheme. *u*Asp on YVA will agree with *i*Asp, as required. It is by far not clear, however, what the feature(s) are that do this job. As far as I can see, independent motivation for such features is hard to find.

One can also stipulate that every morphological element is free to enter the derivation either with our without *u*Asp. In a configuration like (100), all pieces of morphology except the topmost one will be represented by the variant that bears no *u*Asp:

(101) [… [$_{AspP}$ Asp … [… [… yva … [… pro čita …]]]]]
*i*Asp [1] *u*Asp ipfv[1]

This solution, however, amounts to duplicating every verbal element in the lexicon. Besides, one needs to put additional effort in eliminating all configurations brought about by "wrong" lexical choices, like, for example, (102):

(102) [… [$_{AspP}$ Asp … [… [… yva … [… pro čita …]]]]]
*i*Asp [1] *u*Asp pfv[1] …

In (102), the prefix, but not the secondary imperfective is represented by the variant with no *u*Asp. With (102), one would predict that the verb *pročityvat'* can occur in a perfective clause, contrary to the fact. We need, therefore, to make sure that the topmost element cannot go without *u*Asp, but it is not immediately obvious how this can be achieved.

One more alternative discussed in the literature is based on the idea of feature transmission under binding (initially proposed in Irene Heim's lecture notes (Heim 1997) and subsequently developed in Kratzer 2009, Schultz 2014, von Stechow 2009, Grønn & von Stechow 2010, 2012, 2013). Consider a simple sentence in (103) and its logical form in (104):

(103) Volodja pisa-l pis'mo.
V write-PST.M letter.ACC
'Volodja was writing a letter.'

(104) [… IPFV ~~PRO~~ λ_3 Volodja [pisal t_3] pismo]
*i*IPFV *u*IPFV *u*IPFV

The imperfective operator, IPFV, binds the event variable via the λ-operator. This operator is generated by the movement of the semantically empty pronoun PRO, which appears as a sister to V. PRO is deleted after movement to satisfy Full Interpretation. By means of the λ-operator associated with PRO, IPFV transmits the feature [*u*IPFV] to the bound variable t_3. [*u*IPFV] agrees with the feature [*u*IPFV] on the stem. In this way, IPFV licenses the formally imperfective verb stem.

However, in a configuration containing more than one piece of aspectual morphology, all the problems discussed above re-appear. The structure of a prefixed stem like *na-pisa* before PRO-movement and feature transmission would look like (105):

(105) [… [$_{AspP}$ PFV … [… [… [na PRO] [pisa PRO] …]]]]
*i*PFV *u*PFV *u*IPFV …

After PRO movement, however, the configuration becomes problematic. If the *i*PFV feature transmits to the traces of both PROs, it will fail to agree with *u*IPFV on the stem. If it only transmits to the trace of the "prefixal" PRO, *u*IPFV on the stem will not agree with anything and cause the derivation to crash.

I believe that it becomes clear at this point that there are too many issues that make the agreement theory of aspectual invariance vulnerable. We may want to take a closer look at the

alternative in (90b) and determine whether it allows us to gain the same empirical coverage without running into the same difficulties. This will be the topic of the next section.

4.3. Aspectual selection and the structure of *v*P

The logic behind the account sketched in the previous section was based on the idea that the source of aspectual invariance is to be found in "aspectual morphology". It is aspectual morphology, its topmost piece, that decides whether a clause comes out perfective or imperfective. Morphology would restrict the range of available semantic aspects merged in the functional domain of a clause, (90a).

An alternative would be to suggest that there a certain selectional relation between a higher aspectual operator and a lower configuration, a la (90b). Something goes wrong if the perfective operator applies to the constituent projected by a simplex or a "secondary imperfective" stem and if the imperfective operator takes a prefixed stem as its argument. In other words, unlike in the case discussed in the previous section, it is not formal properties of "aspectual morphemes" that impose certain conditions on the choice of an aspectual operators. It is semantic needs of aspectual operators that have to be satisfied by an aspectless configuration generated at earlier stages of derivation.

What kind of properties an aspectual operator can interact with? Nothing forces us to make any particular choice at this point. However, there is one option that seems to be the most straightforward and worth exploring. If an argument of an aspectual operator is an eventuality description, then we may expect that it is its characteristics that aspectual semantics can be sensitive to. If one further assumes that "aspectual morphology" influences characteristics of event descriptions, then it will interact with an aspectual operator, even if indirectly. This may open a way of building up a theory that accounts for the observed correlations between "aspectual morphology" and aspectual interpretation better than its rival from section 4.2.

As a point of departure I take Klein's (1995) "time-relational" theory of aspect. The theory has a number of dimensions each of which have contributed a lot to a better understanding of Russian aspectual system. In the current context, one of the ideas advanced in the paper is of special significance. Semantics of the perfective and imperfective aspect is formulated is such a way that an operator is only able to combine with a subset of event descriptions generated at earlier stages of derivation. (This idea is not entirely new of course. Various intuitions that Russian aspect is dependent in some way or other on "eventuality types" can be found in a lot of sources, including Bondarko 1971, Dickey 2000, Durst-Andersen 1992, Filip 1993/1999, 2004, 2005a,b, 2008, Flier & Timberlake 1985, Forsyth 1970, Glovinskaya 1982, Maslov 1984, Mezhevich 2008, Padučeva 1996, Timberlake 1982, Verkuyl 1999, Zalizniak, Šmelev 2000). I believe however that it was Klein who managed to convert these intuitions into a precise and meticulous theory.)

Eventuality descriptions can fall under one of the three classes Klein calls 0-state, 1-state, and 2-state predicates. Simplifying somewhat, one can identify the former two with Vendler/Dowty's states and activities, respectively. The latter comprises accomplishments and achievements, eventuality descriptions that entail culmination. A state of affairs that precedes the culmination is called **a source state**, the one following the culmination **a target state**.

Kleins (1995:689) semantics for PFV and IPFV is represented in (106):

(106) a. PERFECTIVE: Topic time **overlaps** with the **source state** and topic time overlaps with the **target state**

b. IMPERFECTIVE: Topic time overlaps with the **distinguished state** and does not overlap with the target state

According to (106), the topic time introduced by the perfective has to overlap with two intervals: an interval at which the source state holds and an interval where a target state holds. The **distinguished state** is defined as the only state of **1-state expressions** or the source state of **2-state expressions**, if the latter is "explicitly marked". Explicit marking of the source state as a distinguished state is done by merging the secondary imperfective morpheme with a 2-state description (Klein 1995: 685).

The semantics in (106) makes aspectual operators sensitive to the properties of eventuality descriptions. Putting aside 0-state descriptions (see Kelin 1995: 682 for a brief discussion) and focusing on the latter two, one can observe that event descriptions are now complementarily distributed over aspectual operators. Since the topic time introduced by the perfective must overlap with the target state, the expression it combines with must be 2-state.

The semantic imperfective, on the other hand, must apply to a distinguished state, which means that there are exactly two types of predicates it can combine with: 1-state predicates and 2-state predicates where the source state is "explicitly marked" by the YVA morpheme. This distribution is summarized in (107):

(107) a. PFV: 2-state expressions, no explicit marking of the source state

b. IPFV: { 1-state expressions; 2-state expressions, explicit marking of the source state }

Having compared (107) with (85)-(88), one can observe that they express in fact, the same generalization as long as the following equivalence holds, as stated in Klein 1995:685:

(108) a. Prefixed "perfective" stems, (87), and simpex "perfective" stems, (86) project *v*Ps that denote Klein's 2-state expressions
b. Simplex imperfective stems, (85), project *v*Ps that denote Klein's 1-state expressions
c. Secondary imperfective stems, (88), project *v*Ps that correspond to Klein's 2-state expressions with explicit marking of the source state

Therefore, relying on Klein 1995, one can hope to build up a successful account for aspectual invariance if two tasks are accomplished. First, one needs explicit semantics for PFV and IPFV that makes the two complementarily distributed along the lines of (106). Secondly, one has to develop a theory that relates morphodyntactic types of *v*Ps identified in (85)-(88) with Klein's typology of expressions along the lines of (108).

The complementary distribution of PFV and PFV is already presupposed in Klein's initial analysis. We only need to translate (106a-b) into the event-semantic format, assumed throughout this paper. I suggest Klein's PFV and IPFV from (106a-b) can be straightforwardly rendered as functions that take arguments of different logical types.

(109) Klein's imperfective operator for Russian
$\| \text{IPFV} \| = \lambda P_{<v,t>}.\lambda t.\exists e\, [P(e) \wedge \tau(e) \otimes t]$

where *v* is the type of eventualities, both events and states, τ is the temporal trace function, "⊗" is the overlap relation;

(110) Klein's perfective operator for Russian
|| PFV || = $\lambda R_{<v,<v,t>>}.\lambda t.\exists e \exists s[R(s)(e) \wedge \tau(e) \otimes t \wedge \tau(s) \otimes t]$

IPFV in (109) is the function that applies to a predicate of events P (= a 1-state expression) and yields a predicate of times. A time t falls under this predicate just in case t overlaps with the running time of an eventuality from the extension of P.

(109) differs from (106b) in that it does not contain the component "Topic time does not overlap with the target state". The reason to abandon this assumption of Klein's is Grønn's (2003:53-55) observation that it makes an adequate analysis of the factual reading of IPFV very difficult. As was discussed in section 2, on the factual reading of IPFV the topic time includes the event time. The semantics in (106b) can only yield this result for IPFV combined with 1-state predicates, since inclusion is a special case of overlap, and 1-state predicates lack a target state, thus trivially satisfying the second clause of (106b). But "secondary imperfectives" ("a 2-state description plus YVA") come with a target state, which the topic time cannot overlap with, according to (106b). Since the culmination is the initial temporal bound of a target state, the topic time should not be able to include the culmination. This seems to predict, incorrectly, the absence of factual readings for secondary imperfectves. Therefore I follow Grønn in not making the prohibition against overlapping with a target state part of the semantics of IPFV.

PFV in (110) takes a different type of argument: it is not a property of events, but a relations between two eventualities (= a 2-state expression), conceived of as events and their target states. PFV creates a property of times that overlap with the running times of both. (109)-(110) guarantee the complementary distribution of PFV and IPFV, since their arguments, being type-theoretically different, are disjoint sets.

A word of caution is due at this point. The only specific aspect of Klein's analysis of aspectual operators that is substantial for the current proposal is that PFV and IPFV take arguments of different logical types. PFV needs a relation between events and states of type <v, <v,t>>, whereas IPFV requires a predicate of events, of type <v,t>. Nothing relies on specific temporal relations Klein assumes for PFV and IPFV, nor on treating IPFV as semantically underspecified rather than ambiguous. I believe that any analysis of Russian aspectual semantics compatible with <v, <v,t>>/ <v,t> architecture will do the job, so the reader is encouraged to replace the "τ(e) ⊗ t" part of (109) and the "τ(e) ⊗ t ∧ τ(s) ⊗ t" part of (110) with whatever represents her favorite meanings of Russian aspectual operators. Specifically, a more elaborated version of PFV may need to encapsulate the notion of maximality, recently much discussed in Altshuler 2013, 2014, Filip 2008, 2017, Filip & Rothstein 2005, Tatevosov 2014[20].

Now I am in the position of giving more content to the set of equivalences stated in (108a-c). I will do that in two steps. First, I will argue for (108a) and (108b). Once (108a-b) are established, the aspectual invariance captured in (85)-(87) will follow. Then I will address (108c) and argue that secondary imperfectives are essentially derived 1-state expressions, which makes them only eligible for being combined with IPFV, just like their non-derived counterpart. This would account for (88).

[20] Tatevosov (2014) argues, specifically, that maximality, conceived of in modal terms, is needed to account for Slavic aspectual compositional effects in perfective sentences (see Section 2.1). He points out that PFV in (110) combined with a 2-state description cannot guarantee the right result.

First and formost, I take Klein's 1-state expressions to be predicates of events while 2-state expressions relations between events and states of states:

(111) a. 1-state expressions: a predicate of events
λe. … e …

b. 2-state expression: a relation between events and states
λs.λe. … e … ∧ … s … ∧ R(s)(e)

A 1-state expression, which only denotes a "source state" is this a function from eventualities to truth values of type <v,t>. 2-state expressions are functions of type <v, <v,t>> from states to functions from events to truth values. Events and states must satisfy the relation R, most typically conceived of as a causal relation. The eventive part of (111) thus corresponds to a "source state"; the state argument ranges over "target states".

With we can go back to the first three basic types of *v*Ps in (85)-(87) repeated in (112)-(114):

(112) "Simplex imperfective"
a. *pisa-t'* 'write^{IPFV}, / *čita-t'* 'read^{IPFV},
b. [… [… IPFV … [$_{vP}$ … [… *pisa- / čita-* …]]]]

(113) "Simplex perfective"
a. *da-t'* 'give^{PFV},
b. [… [… PFV … [$_{vP}$ … [… *da-* …]]]]

(114) "Prefixed perfective"
a. *na-pisa-t'* 'write^{PFV}, / *pod-pisa-t'* 'sign^{PFV},
b. [… [… PFV … [$_{vP}$ … [… *pisa-* [… *na-* / *pod-* …] …]]]]

With (111a-b), (108a-b) is transformed into (115a-b):

(115) a. Simplex imperfective stems in (112) project *v*Ps that denote predicates of events (=Klein's 1-state expressions)
b. Prefixed "perfective" stems, (113), and simpex "perfective" stems, (114), project *v*Ps that denote relations between events and states (= Klein's 2-state expressions)

*v*Ps from (112) and (114) will have, then, the denotations in (116b)-(117b), assuming Neo-Davidsonian association of events with participants via thematic relations.

(116) 1-state expression= a property of events = simplex unprefixed stem
a. Volodja pisa-l pis'm-o.
V. write-PST.M letter-ACC
'Volodja was writing a letter.'
b. || [$_{vP}$ Volodja *pisa-* pismo] || = λe. [write(e) ∧ agent(Volodja)(e) ∧ theme(letter)(e)]

(117) 2-state expression = prefixed stem = a relation between events and states

a. Volodja na-pisa-l pis'm-o.
V. PRF-write-PST.M letter-ACC
'Volodja wrote a letter.'

b. || [$_{vP}$ *Volodja na-pisa- pismo* || = λs.λe. [write(e) ∧ agent(Volodja)(e) ∧ theme(letter)(e) ∧ cause(s)(e) ∧ written(s) ∧ arg(letter)(s)].

Essentially, (116b) represents an activity event structure, whereas (117b) has the structure of accomplishments. The latter consists of the activity component identical to (116b), and the target state component, causally connected. Therefore, the predicate in (116b) denotes writing events, whose agent is Volodja and the theme is a letter. (As a simplification, all the nominal arguments are represented as individual constants.) The representation of (117b) contains, in addition, a target state of being written brought about by a writing event. The holder of that state is identical to the theme of writing. (117b) thus follows the line of inquiry initiated by Dowty (1979) with his decompositional analysis of accomplishments. An analysis of the simplex perfective configuration like (113) with *da-* 'give^{PFV}', a verb of transfer of possession, would be similar, possibly with minor adjustments.

What are the reasons to believe that *v*Ps like (116a) and (117a) are event structurally different?

One reason is that (116)-(117) allow to relate prefixation and the presence of a target state in the semantic representation. In the extensive work on prefixation in Slavic languages (Arsenijević 2007, Babko-Malaya 1999, Ramchand 2004, Romanova 2004, 2006, Svenonius 2004, 2008, Tatevosov 2009, 2013, Žaucer 2009, 2010, 2013) it has been independently argued that the role of prefixes like *na-* in (117a) and similar items is to project a structure interpreted as a target state description[21]. (117b), which differs the from (116b) by the prefix, makes this fully explicit.

[21] Given that Slavic prefixes are distributionally and semantically heterogeneous, care should be taken in determining the scope of this generalization. Tatevosov (2013) argues that all lexical prefixes are result-state introducing operators. However, only for a proper subset of superlexicals the same conclusion can be maintained in an uncontroversial way. For example, inceptive prefixes (*rabotat'* 'work' — *za-rabotat'* 'start working') do not intuitively introduce target states of working events. Rather, they creat a relation between working events and events in which the latter are initiated.

The status of the "delimitative" prefix *po-* and perdurative prefix *pro-* (*rabotat'* 'work' — *po-rabotat'* 'work for a while', *pro-rabotat'* 'work throughout a period of time') is dubious, too. Consider (i) illustrating the delimitative:

(i) Volodja po-čita-l roman.
V. PO-read-PST.M novel.ACC
'Volodja spent some time reading a/the novel.'

Unlike the vast majority of other prefixed perfective configurations, the delimitative, while being perfective, is atelic (Dickey 2000, Filip 2000, Mehlig 2006, 2012). This gave rise to two major theories of the delimitative, which potentially may call for adjustments in the current proposal.

One theory advanced by Piñon (1994) and later taken up by Filip (2000 and much further work) suggests that the delimitative prefix *po-* has the semantics of a measure adverbial underspecified for descriptive content. "The attenuative prefix *po-*," Filip 2000:50 indicates, "is most frequently used as a temporal measure, contributing roughly the meaning of a durative adverbial like 'for a (short) while'". For Piñon and Filip, *po-* is a modifier of <<v,t>,<v,t>> type. The result of its application to an event predicate is another event predicate. (109)-(110) then would wrongly predict that the delimitative has to combine with IPFV rather than PFV.

However, upon closer scrutiny, Piñon and Filip's conclusion may be premature, given non-elicited examples like (ii):

Stronger, and strictly empirical arguments for (116b)-(117b) come from the predictions derivable from the fact that these structures manifest different degrees of event-structural complexity. The body of literature on predicate decomposition starting from Dowty 1979 (see Kratzer 2000, Rapp, von Stechow 1999, Rappaport Hovav, Levin 1998, Rothstein 2004, Ramchand 2008, among many others) offers a number of diagnostics that allows to tell the two configurations apart. The list includes argument realization patterns, interpretation of participial passives, scope of adverbials like 'almost' and 'again', interpretation under negation.

Tatevosov (2016) shows that the diagnostics converge: non-prefixed items pattern together in being subeventally simplex, whereas prefixed stems exhibit higher subevental complexity. I am not able to review the whole body of arguments here. As an illustration, consider the range of interpretations of the prefixed and non-prefixed verb phrases under negation.

(118) Prefixed stem under negation: ambiguous

Volodja	ni razu	ne	**pro-čita-l**	"Kapital".
V.	not.a.single.time	not	PRF-read-PST.M	Das.Kapital.ACC

'Volodja has never read "Das Kapital".'

1. No reading activity has ever been performed.
2. No reading activity has ever been completed.

(ii)

Kniga	v	otličnom	sostojanii.	Tol'ko	nemnogo	po-čita-n-a	grjaznymi	rukami.
book	in	excellent	condition	onlu	a.little	PO-read-N/T-F	dirty	hands

'The book is in an excellent condition. (The) only (wrong thing with it is that it) has been read with dirty hands a little.'

(ii) contains the passive participle *počitana*, which looks just like a target state participle of any other prefixed verb. As discussed in section 4.4, such participles are derived from relations of type <v, <v,t>>. One can speculate that the ability of the delimitative to produce participles like (ii) is indicative of the fact that the prefix *po-* introduces a target state, too, so that after its application a relation of type <v,<v,t>> required by PFV obtains. To make this analysis work, however, one has to make sure that (ii) is not a result state, see Section 4.4.

The other theory (Mehlig 1981 and elsewhere; Dickey 2000, 2006 and elsewhere; Dickey, Hutcheson 2003) suggests that *po-* is an exponent of an aspectual morpheme. As Dickey (2006) puts it, *"po-* delimitatives perform a crucial systemic function in the Russian aspectual system — the extension of the aspect opposition to atelic activity predicates". Translating Dickey into the metalanguage of the current section, *po-* denotes PFV for 1-state descriptions. If Dickey is right, the aspectual system of Russian starts being tripartite, as in (iii):

(iii) a. $\| \text{IPFV} \| = (109)$
b. $\| \text{PFV}_{2S} \| = (110)$
c. $\| \text{PFV}_{1S} \| = \lambda P_{<v,t>}.t.\ \exists e\ [\tau(e) \subseteq t \wedge P(e)]$

According to (iii), 2-state descriptions have to be perfective, just as before, while 1-state descriptions have a choice: to be combined either with IPFV, zero marked, or with PFV expressed by *po-*.

This approach assigns the status of an inflectional morpheme to *po-*, which presupposes that *po-* forms a unique distributional subclass within the prefixal system of Russian. This can potentially be problematic, since *po-* exhibits a fair amount of lexical restrictions, not characteristic of paradigmatic instances of inflectional categories, and its hierarchical asymmetry with respect to other prefixes are difficult to motivate.

I will leave this theoretical dilemma and the surrounding issues unresolved in the current study. My hope is that any extension the theory may need to account for the delimitative will not affect the core of the proposal laid out above.

(119) Non-prefixed stem under negation: unambiguous

Volodja	ni razu	ne	**čita-l**	“Kapital”.
V.	not.a.single.time	not	read-PST.M	Das.Kapital.ACC

‘Volodja has never read Das Kapital.’

1. No reading activity has ever been performed.
2. *No reading activity has ever been completed.

(118) exhibits at least two readings. On (118.1), the sentence says that there was no reading activity and the target state of having been read has never been attained. On (118.2), the existence of the target state is negated, too, but that of the activity is not. On the analysis in (117b), this ambiguity is expected: since there are two subevental components connected by the conjunction, falsity of any of the conjuncts or both makes the whole negated sentence true, as indicated in the simplified paraphrase of (118)[22]:

(120) It is not the case that [there was a reading activity and a target state of having been read].

(119) is not ambiguous in the way (118) is. Again, (116b) predicts exactly this. Being based on the predicate of reading events with no target state component, all (119) says is (121):

(121) It is not the case that [there was a reading activity].

Note, crucially, that in (119), the imperfective clause is taken under the general factual construal, which, as we have seen before, can describe a culminated eventuality just like the perfective. This guarantees that the second reading is not unavailable because the sentence is progressive and the target state does not occur in the evaluation world. If the target state was there, on the general factual reading we would have seen it as clearly as in the perfective sentence in (118). The fact that this is not the case thus provides us with an argument for less subevental complexity of non-prefixed verbs.

To recapitulate, the assumptions about the meaning of aspectual operators (PFV and IPFV) as well as about denotations of *v*Ps projected by three classes of verb stems (simplex “imperfective”, simplex “perfective”, prefixed “perfective”) account for three cases of aspetual invariance in (108a-c) out of the four. Simplex “imperfective” stems, being 1-state expressions, can only be an argument of IPFV in (109). “Perfecive stems”, no matter simplex or prefixed, are 2-state expressions and have to combine with PFV in (110)[23]. I am ready to discuss the the fourth case, the case of secondary imperfective in (108d).

[22] The third logically possible reading (the target state holds but the activity does not) is presumably unavailable for an independent reason: a state of having been read cannot come about without a causal input from an activity.

[23] Bohnemeyer and Swift (2004, B&S) develop the default aspect theory that aims, among other things, at accounting for the aspectual system of Russian, which the authors characterize as “telicity-dependent”. According to this theory, prefixless configurations like (116) and prefixed configurations like (117) lack aspectual operators altogether. Rather, their aspectual interpretation is provided by the “default” mechanism that realizes telic event descriptions under the PFV construal. Atelic event descriptions can potentially be realized under both PFV and IPFV construals but get pragmatically strengthened to implicate IPFV. I cannot review this proposal in detail and will only mention one of its aspects that makes it problematic. Couching the analysis in terms of telicity rather than in terms of event structure makes wrong predictions, since a predicate can be telic without inducing perfectivity. For example (116b), repeated as (i), is quantized (Krifka 1989, 1992, 1998): no proper part of an eventuality in which the letter has been written is an eventuality in which the letter has been written.

4.4. A case for the secondary imperfective

So far Klein's 1-state and 2-state descriptions have been identified with predicates of events of type <v,t> denoted by morphologically simplex non-prefixed verbs and relations between events and states of type <v, <v,t>> associated with prefixed verbs. The next step is to set up an analysis of the "secondary imperfective" in (88), repeated as (122), and to give more content to (108c), repeated as (123), which says that a secondary imperfective *v*P involves "explicit marking" of the source state.

(122) "Secondary imperfective"
a. *pro-čit-yva-t'* 'read^{IPFV},
b. [… [… IPFV … [$_{vP}$ … [… *-yva-* .... [… *čita-* [… *pro-* …] …]]]]]

(123) Secondary imperfective stems project *v*Ps that correspond to Klein's 2-state expressions with explicit marking of the source state

I have argued in Section 3 that the secondary imperfective morpheme is not interpreted as IPFV in the position where it is merged. But if it does not render IPFV, what does it do? Klein (1995) suggests that it marks the source state (= the activity part) of a 2-state description as its "distinguished state". I propose that this operation amounts to to existential binding of the state variable and turning a relation between events and states into a property of events.

(124) YVA as an Eventizer
|| YVA || = λR.λe.∃s[R(e)(s)]

The YVA morpheme is thus Paslwaska, von Stechow's (2003) Eventizer, and the projection of the YVA morpheme is thus a derived 1-state description, a predicate of events:

(125) The secondary imperfective, a proprety of events
a. Volodja za-pis-yva-l diski
V. PRF-write-YVA-PST.M CDs
'Volodja was recording CDs'
b. || yva [$_{vP}$ V. zapisa- diski] || = λe.∃s[record(e) ∧ agent(Volodja)(e) ∧ theme(CDs)(e) ∧ cause(s)(e) ∧ recorded(s) ∧ arg(CDs)(s)]

Being a 1-state expression, (125b) cannot combine with the perfective operator, PFV, and has to be taken care of by the imperfective operator, IPFV. In that respect, "secondary imperfectives"

(i) || [vP Volodja pisa- pismo] || = λe. [write(e) ∧ agent(Volodja)(e) ∧ theme(letter)(e)]

Since B&S assimilate telicity to quantization, (i) is also telic. It cannot be perfective, however, as we have seen before, and must combine with IPFV. I do not see a straightforward way of fixing this drawback of B&S and conclude that it is event structure, not telicity that is relevant for calculating aspectual interpretation in Russian, exactly as Klein (1995) suggests.

are identical to non-derived 1-state descriptions like the one in (116).[24] This is made explicit in (126), which replaces the formulation in (123):

(126) Secondary imperfective stems project *v*Ps that are derived 1-state expressions

This accounts for (88) and completes the theory of aspectual invariance.

However, (124) is a radical departure from the existing views on the role of the YVA morpheme. Therefore, in the rest of this section I will try to come up with an additional argument supporting the analysis of YVA along the lines of (124). Essentially, the argument is based on the observation that if one assumes (124), this does not only explain aspectual invariance. It also open a way of building up a compelling account for a long-standing puzzle about Russian passive participles.

To fully establish this argument I will need to unfold a few additional considerations about syntax, morphology and interpretation of this class of participles.

Available types of PPrt's are shown in (127):

(127)

a. Simplex imperfective stem	b. Simplex perfective stem	c. Prefixed stem
pisa-n	da-n	pro-čita-n
read-N/T	give-N/T	PRF-read-N/T
'written'	'given'	'read'

In (127a-c), *pisan* is a PPrt derived from a "simplex imperfective" stem, *dan* from a "simplex perfective" stem, and *pro-čita-n* — from a prefixed stem. In section 2.2, the latter two types of PPrt's, labeled "perfective/past passive participles" in traditional descriptions, have already be mentioned. Let us focus on them first.

Semantically, such PPrt's describe a state of having been given or read. Paslawska and von Stechow 2003 following Kratzer 2000 argue that their derivation PPrt's involves stativization via the operator that takes a relation between events and states and turns it into a property of states. Let us call it $STAT_{2S}$ ("a stativizer for 2-state descriptions"):

(128) $\| STAT_{2S} \| = \lambda R.\lambda s.\ \exists e[R(s)(e)]$

The *v*P projected by a prefixed stem like *napisa-* 'write^{PFV}' or *pročita-* 'read^{PFV}' provides exactly the right type of denotation for $STAT_{2S}$ to combine with. Merging on top of it, $STAT_{2S}$

[24] Being a predicate of events, not a relation between events and states, in terms of subevental content the secondary imperfective patterns, however, with the prefixed perfective. A target state is introduced by the prefix once and for all. Existential binding of the state variable does not remove the target state component from the semantic representation. We correctly predict, therefore, that the secondary imperfective sentence in (i) is as ambiguous as its perfective prefixed counterpart in (118).

(i) "Secondary imperfective" stem under negation: ambiguous

Volodja	ni razu	ne	pro-čit-yva-l	"Kapital".
V.	not.a.single.time	not	PRF-read-YVA-PST.M	Das.Kapital.ACC

'Volodja has never read "Das Kapital".'

1. No reading activity has ever been performed.
2. No reading activity has ever been completed.

externalizes the stative component. For a *v*P like 'read a novel', putting aside the issues surrounding the projection of the external argument, one gets a property of states of being read brought about by a reading activity:

(129) || $STAT_{2S}$ [pročita- roman]]] || = λs. ∃e [$read_E$(e) ∧ theme(novel)(e) ∧ $read_S$(s) ∧ arg(novel)(s) ∧ cause(s)(e)]

In (129), the event variable gets existentially bound. As a result, (129) brings about the inrefence that a culminated reading event had occurred in the evalusation world (cf. Kratzer 2000, but see Beavers 2011 for significant qualifications).

Apart from PPrt's in (127b-c) based on "perfective" (both prefixed and simplex) verb phrases, Russian possesses PPrt's derived from simplex imperfective verb phases like (127a), shown in (130):

(130) Eta kinga čita-n-a raz dvadcat'.
this book read-N/T-F times twenty
'This book has been read about 20 times.'

If the above generalizations about simplex stems like *čita-* are correct, the PPrt *čitan* 'read' in (130) cannot be derived by $STAT_{2S}$. Such stems are predicates of events, of type <v,t>, as shown in (116b), while $STAT_{2S}$ needs a relation between events and states of type <v, <v,t>>.

In the formal literature, little is said about the derivation of "imperfective PPrt's like (130). Borik (2012), for example, suggests that "perfecitve" PPrt's describe "realized" and "asserted" consequent state, while for "imperfective" ones the consequent state is "potential"[25]. She leaves further elaboration of this idea for another occasion, however.

I suggest that a possible hypothesis to account for the derivation of this type of PPrt's that would make Borik's intuition more precise is Kratzer's (2000) proposal for result state participal passive in German, illustrated in (131).

(131) a. Die Gäste sind begrüsst.
'The guests are greeted.'

b. Das Theorem ist bewiesen.
'The theorem is proven.'

Kratzer argues at length that verbs like 'greet' and 'prove' in German lack a target state argument, hence corresponding participles cannot be derived by the stativizer in (128). She proposes that in the derivation of (131a-b), "resultant state passives" in her terminology, a different stativizer is used, one that derives properties of posttimes of an eventuality from the

[25] "An implicit assumption here is that participle formation is further limited only to those verbs which lexically introduce a (potential) consequent state… I will use the modifier 'potential' in the description of the lexical requirement for a consequent state, since it is plausible to assume that a potentially realized state specified for an imperfective verb becomes realized and asserted in the case of a perfective one. Undoubtedly, a potentially realized consequent state is a notion which remains to be precisely defied…

extension of a predicate. Kratzer's denotation for this stativizer, labeled here as $STAT_{1S}$ ("a stativizer for a 1-state descriptions"), is shown in (132):

(132) Kratzer's temporal denotation for $STAT_{1S}$
$|| STAT_{1S} || = \lambda P.\lambda t.\ \exists e\ [\ P(e) \wedge \tau(e) \leq t\ ]$

If Kratzer is right, an analysis of German examples in (131) should naturally extend to the Russian case in (130). An important, even if indirect evidence suggesting that (133) may be on the right track is the intuitive understanding of sentences like (130) as being semantically similar to corresponding English sentences with existential perfect.

However, as Kratzer herself points out, her system of stativizing operators implies a sharp asymmetry, since they output ontologically different entities, sets of eventualities and sets of times. $STAT_{1S}$ has thus the logical type of aspectual operators <<v,t>, <i,t>>, unlike $STAT_{2S}$. Later on, this treatment was taken up by Anagnostopoulou's (2003) in her extensive study of the participial passive in Greek.

For PPrt's like (130), I will adopt a slightly different perspective, however: to define result states as poststates rather than posttimes, which woul make the two STATs type-theoretically identical. On this conception, advanced, specifically, by Kamp *et al*. 2015, a result state s of an event e consists in "nothing more than that e has previously occurred" (Kamp *et al*. 2015: 58). $STAT_{1S}$ thus has the semantics of the perfect, as conceived of in different versions of the result state theory of a perfect (Giorgi & Pianesi 1998, Kamp & Reyle 1993, Kamp et al. 2015, Moens and Steedman 1988, Parsons 1990).

(133) State-based denotation of $STAT_{1S}$
$|| STAT\ 1S ||= \lambda P.\lambda s.\ \exists e\ [\ P(e) \wedge rs(e)(s)]$
where $rs(s)(e) = 1$ iff $\exists t\ [t = \tau(s) \wedge \tau(e) \infty t]$; "$\infty$" is the adjacency relation
(cf. Kamp et al.'s (2015:58-59) definition of their formal result states)

Therefore, the final generalization about PPrt's which should be part of the grammar of Russian looks like (134).

(134) PPrts in (127a-c) are derived by the stativizing operators $STAT_{1S}$ and $STAT_{2S}$ ("stativizaing operator for 1-state predicates" and "stativizing operator for 2-state predicates"), respectively.

In the literature, there is no general agreement as to where STATs enter the derivation. Scholars like Schoorlemmer 1995 and Paslawska and von Stechow 2003 take the exponent of STAT to be the N/T morpheme itself, cf. a similar conclusion about Greek counterparts of PPrt's in Anagnostopoulou 2003. Pazelskaya and Tatevosov (2008) argue, however, that this is unlikely to be the case, given that the same morpheme is part of the derivation of ASNs, which are eventive, as discussed in Section 2:

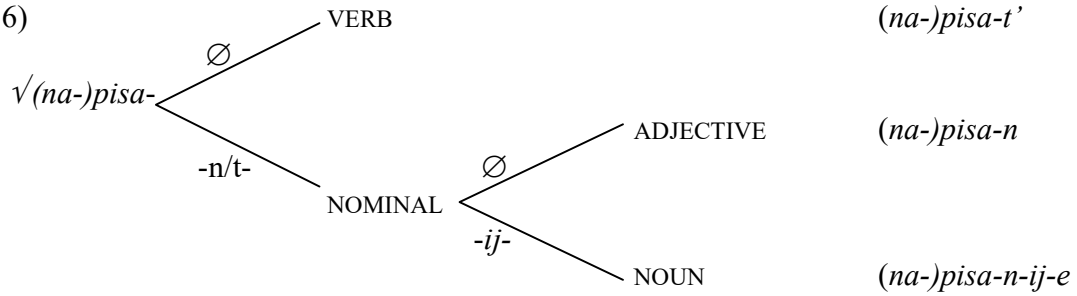
(135) a. otkry-t
open-N/T
'open'

b. ot-kry-t-ij-e
open-N/T-NOUN-NOM
'opening'

PPrt in (135a) denotes a state of being open, while the ASN in (135b) is a description of opening events. Obviously, if the N/T morpheme denotes $STAT_{2S}$, the ASNs is wrongly predicted to be as stative as the PPrt is.

It is for this reason that Pazelskaya & Tatevosov 2008 propose that to treat N/T as a category-changing device with no intrinsic semantics. N/T creates a nominal constituent and passes the denotation of its complement on. To make an ASN out of this constituent, the ij morpheme merges on top of N/T. The adjectival derivation yielding a PPrt does not require any overt morphology. This is schematized in (136):

(136)



With this background on stativizers, we are ready to take into account the crucial fact about the distribution of PPrt's, which is stated in (137) and illustrated in (138).

(137) Passive participles cannot be derived from YVA stems.

(138) a. *pro-čit-yva-n
PRF-read-YVA-N/T
'read'

b. *otkry-va-n
open-YVA-N/T
'open(ed)'

c. *da-va-n
give-YVA-N/T
'given'

As (138a-c) show, as soon as YVA enters the derivation, a PPrt can no longer be formed.

The constraint illustrated in (138) cannot be phonological or morphosyntactic. It is not that the N/T morpheme cannot appear in this configuration at all. Unlike PPrt's, ASNs can be derived from YVA-stems: (139a-c) show that N/T morpheme can readily merge on top of YVA:

(139) a. pro-čit-yva-n-i-e
PRF-read-YVA-N/T-NOUN-NOM
'reading'

b. otkry-va-n-i-e
open-YVA-N/T-NOUN-NOM
'opening'

c. da-va-n-i-e
give-YVA-N/T-NOUN-NOM
'giving'

In the light of (138)-(139), the fact that PPrt's are stative, whereas ASNs are eventive, starts being of crucial significance. It allows us to relate ungrammaticality of (138a-c) to the failure of an attempt to create a description of states out of the constituent projected by YVA. PPrt's have to be stative, but once YVA is there, a description of states cannot be built.

Why would YVA render a stative description unavailable? The paradigm in (127) and (138) has always been a big mystery in the study of Russian verb, since YVA has always been understood as an exponent of IPFV. It is not at all clear what an aspectual operator *par*

excellance can have to with the gap in the participial paradigm. However, if YVA manipulates event structure, the perspective changes.

I propose to view ungrammaticality of PPrt's in (138a-c) as the outcome of the following two properties of the grammar of Russian.

(140) a. YVA is an eventizer
b. The stativizers and the eventizer are members of the same category and as such are complementarily distributed

(140b) captures the complementary distribution of YVA and the stativizers. (140b) explains **why** (140b) holds. Once one of the stativizer's is there, which is necessary for building up a PPrt, there is no room for the eventizer. The other way around, as soon as the eventizer merges, the structure cannot be stativized, hence a PPrt cannot be built. I suggest that it is for this reason that YVA-PPrt's are not derivable in Russian.

A comment on (140b) is due at this point, since at first glnce it may look superfluous. An alternative to (140b) could be (141), which is, as far as I can tell, what Pawlawska, von Stechow tacitly assume in their treatment of Russian PPrt's about the interaction of their stativizer and eventizer with the rest of the structure:

(141) The stativizers and eventizer merge freely provided that the resulting configuration is semantically interpretable.

If Russian only possessed $STAT_{2S}$ there would have been no need for (140b) indeed; (140a) would suffice. Both $STAT_{2S}$ and YVA take a relation between events and states and output a predicate of events, which means that they stay in the mutual bleeding relationship. If YVA takes a relation of type <v, <v,t>> and returns a predicate of type <v,t>, this predicate cannot be a legitimate argument of $STAT_{2S}$, and the other way around. Their complementary distribution follows.

However, (141) makes wrong predictions with respect to YVA and $STAT_{1S}$. Had (141) been correct, $STAT_{1S}$ could have been fed by YVA. Yva would first derive a predicate of events out of a 2-state description. $STAT_{1S}$ would then combine with that predicate to yield a property of poststates. "Secondary imperfective" PPrt's would have been available, and their interpretation would have been roughly the same as that of PPrt's derived from simplex 1-state descriptions like (130). I conclude therefore that it is impossible to maintain (141) and some or other variant of the generalization in (140b) is unavoidable.

To conclude, I believe that analyzing YVA as an Eventizer gives us a number of empirical advantages. First, together with the assumption in (109)-(110) that aspectual operators in Russian require different types of arguments, it accounts for the fact that YVA-clauses end up imperfective. It is thus a significant component of the theory of aspectual invariance developed in this section. Second, it solves a hitherto unexplained puzzle about the lack of PPrt's based on YVA-stems. Specifically, it allows us to connect this gap in the participial paragidm to the evntizing semantics of YVA. This result is difficult to achieve if YVA is viewed as an aspectual morpheme, since it is not clear why an aspectual morpheme should be complementarily distributed with stativizers.

It should be pointed out that nothing that has been said so far presupposes that eventization exhausts the semantic contribution of YVA. It may turn out that we will need to assign more

semantic content to it. At the moment, however, it is not immediately obvious what this additional content can be.

To sum up, in this section I have offered a theory of aspectual invariance based on the insights from Klein 1995 theory. I established a few generalizations about the event structure of three types of verbal predicates: morphologically simplex verbs, both "imperfective" and "perfective", the core cases of prefixed "perfective" verbs, and "secondary imperfectives". The two "perfective" configurations serve a relation between events and target states of type <v, <v,t>>, the "imperfective" *v*Ps, both simplex and secondary, are predicates of events of type <v,t>. This difference provides a semantic basis for a system where aspectual operators are sensitive to the type of the denotation of a *v*P. One specific way of building up such a system is the analysis inspired by Klein 1995 whereby IPFV takes a predicate of events as an argument, while PFV apples to a relation between events and states. The role of the "secondary imperfective" YVA morpheme is to bind existentially a state variable turning a relation (type <v,<v,t>>) into an event predicate (<v,t>). This non-canonical understanding of "secondary imperfectivization" provides is a substantial component of accounting for aspectual invariance, and shows an additional advantage: it allows to explain out the otherwise mysterious gap in the passive participles.

5. Summary

I believe that with the aspectual architecture advanced in the previous sections, Russian and languages like Russian should no longer be viewed as outliers among languages that encode aspectual distinctions in the grammar.

This view is, in a nutshell, as follows. Semantic aspects appear in the functional domain of a clause. Verbs and their extended projections at least up to the *v*P level are aspectless. Derivational morphology (at least the derivational morphology discussed in this paper) is *v*P-internal and it does not directly contribute to the computation of the aspectual value of a clause. Russian shares these properties, identified above as verb-external and *v*P-external aspectuality, with English and languages like English. This reduces aspectual peculiarity of Russian in a principled way. It is not the case that for some unclear reason it encodes aspect, a functional category, at the lexical level.

I believe there are good empirical reasons to think that this view of Russian is on the right track. Evidence from structurally deficient configurations like ASNs discussed in Section 2 suggests that that semantic perfectivity cannot be part of the meaning of verbs traditionally labeled as "perfective". Morphosyntactically, such verbs are fully built *v*P-internally, but at this stage of derivation PFV is not part of the structure. Section 3 establishes a similar conclusion about semantic imperfectivity and "imperfective morphology", the YVA morpheme. Essentially, the right interpretation of imperfective sentences is only predicted if semantic imperfectivity appears outside of *v*P. YVA, however, arguably merges within the complement of *v*.

Once this all has been said, the theory faces a problem of aspectual invariance. If semantic aspects are part of the functional structure of a clause, why is it not the case that any type of *v*P can combine with any semantic aspect? Instead, *v*Ps projected by prefixed verbs have to combine with PFV, *v*Ps where the topmost piece of morphology is YVA must be taken care of by IPFV, and so on. I proposed, taking up the idea suggested by Klein 1995, that the invariance is an outcome of the simple fact that PFV and IPFV have different event-structural expectations about their complements. The perfective takes a relation between events and target states denoted by

prefixed *v*Ps, the imperfective combines properties of events. The latter are either projected by simplex "imperfective stems" or derived by the YVA morpheme, the Eventizer.

If correct, this analysis allows to reduce the differences between Russian and similar languages and English and similar languages to the following two characteristics. First, aspectual morphemes in Russian are type-theoretically different and apply to arguments of distinct logical types. Second, aspectual morphemes in Russian are phonologically silent.

I believe these two items exhaust the list of substantial differences between the two types of aspectual systems. Both of them look like idiosyncratic properties of language-specific pieces of functional morphology. Lexical idiosyncrasies are attested in the languages of the world and have to be recognized by the theory anyway. But hopefully, the weird Slavic-style system where aspect is encoded verb-internally is no longer empirically inevitable.

References

Abney, Steven. 1987. The English Noun Phrase in its Sentential Aspect. Ph.D. dissertation, MIT.

Alexiadou, Artemis, Gianina Iordăchioaia, and Elena Soare. 2010. "Number/aspect interactions in the syntax of nominalizations: A Distributed Morphology approach". Journal of Linguistics 46: 537–574.

Alexiadou, Artemis. 2001. Functional Structure in Nominals. Amsterdam-Philadelphia: John Benjamins.

Alexiadou, Artemis. 2007. Argument structure in nominals. In Noun Phrase in Generative Perspective, edited by Artemis Alexiadou, Liliane Haegeman, Melisa Stavrou. Berlin: Mouton, pp. 477-546.

Alexiadou, Artemis. 2009. "On the role of syntactic locality in morphological processes: the case of (Greek) derived nominals". In Quantification, Definiteness and Nominalization, edited by Anastasia Giannakidou and Monika Rathert. Oxford: Oxford University Press, pp. 253-280.

Alexiadou, Artemis. 2010. Nominalizations: A Probe into the Architecture of Grammar Part I: The Nominalization Puzzle". Language and Linguistics Compass 4: 496–51

Altshuler, Daniel. 2012. Aspectual meaning meets discourse coherence: A look at the Russian imperfective. Journal of Semantics 29(1), 39–128.

Altshuler, Daniel. 2013. There is no neutral aspect. Semantics and Linguistic Theory 23. 40-62.

Altshuler, Daniel. 2014. A typology of partitive Aspectual operators. Natural Language and Linguistic Theory 32: 735–775.

Altshuler, Daniel. 2015. Does viewpoint aspect make reference to time? Paper presented at Cornell Workshop on Aspect. Cornell University, September, 25, 2015.

Anagnostopoulou, Elena. 2003. Participles and voice. In Perfect explorations, eds. Artemis Alexiadou, Monika Rathert, and Arnim von Stechow, 1–36. Berlin: Mouton de Gruyter.

Arregui, Ana, María Luisa Rivero and Andrés Pablo Salanova. 2014. Cross-linguistic variation in imperfectivity. Natural Language and Linguistic Theory 32: 307–362.

Arsenijević, Boban. 2007. Slavic verb prefixes are resultative. Cahiers Chronos 17: 197-214.

Arsenijević, Boban. 2012. Verb prefixation of the Slavic type in terms of concord and relativization. Ms., Universitat Pompeu Fabra, Barcelona.

Babby, Leonard. 1997. Nominalization in Russian. In Formal Approaches to Slavic Linguistics, The Cornell Meeting 1995, edited by W. Browne, E. Dornisch, N. Kondrashova, and D. Zec. Ann Arbor: Michigan Slavic Publications, pp. 53-85.

Babko-Malaya, Olga. 1999. Zero Morphology: A Study of Aspect, Argument Structure, and Case. Doctoral dissertation, Rutgers University.
Bach, Emmon, Eloise Jelinek, Angelika Kratzer, and Barbara Partee. 1995. Quantification in Natural Languages. Kluwer Academic Publishers, Dordrecht
Beavers, John. 2011. On Affectedness. Natural Language and Linguistic Theory. 29: 335-370.
Beck, Sigrid and Arnim von Stechow. 2015. Events, Times and Worlds - An LF Architecture. In C. Fortmann (Hg.): Situationsargumente im Nominalbereich. Linguistische Arbeiten Bd. 562, Berlin: De Gruyter, pp. 13-46.
Bhatt, Rajesh and Roumyana Pancheva. 2006. "Implicit Arguments". In The Blackwell Companion to Syntax, vol. 2, edited by Martin Everaert and Henk van Riemsdijk. Blackwell, pp. 554-584.
Bohnemeyer, J., Swift, M., 2004. Event Realization and Default Aspect. Linguistics and Philosophy 27, 263–296.
Bondarko, Alexander V. and Lev L. Bulanin. 1967. Russkij glagol. [Russian verb] Leningrad: Prosveščenie.
Bondarko, Alexander V. 1971. Vid i vremja russkogo glagola. [Tense and aspect of Russian verb.] Moskva: Prosveščenie.
Borer, Hagit. 2005. Structuring Sense. Vol. 2. The Normal Course of Events. Oxford: Oxford University Press.
Borer, Hagit. 2012. In the Event of a Nominal. In Martin Everaert, Marijana Marelj & Tal Siloni (eds.), The Theta System. Argument Structure at the Interface, 103–149. Oxford: Oxford University Press.
Borer, Hagit. 2013. Derived nominals and the domain of content. Lingua. 1–26. doi:10.1016/j.lingua.2013.10.007.
Borik, Olga, und Berit Gehrke. 2017. Imperfective past passive participles in Russian. In Proceedings of FDSL 12, ed. Radek Simík et al. Frankfurt am Main: Peter Lang.
Borik, Olga. 2013. Past participles and the eventive/adjectival passive in Russian. In Proceedings of Sinn und Bedeutung 17, ed. Emmanuel Chemla, Vincent Homer, and Gregoire Winterstein, pp. 115–132
Bruening, B. 2014. Word formation is syntactic: Adjectival passives in English. *NLLT* 32: 363-422.
Champollion, Lucas. 2010. Parts of a whole: Distributivity as a bridge between aspect and measurement. Ph.D. dissertation, University of Pennsylvania.
Cipria, Alicia, and Craige Roberts. 2000. Spanish imperfecto and preterito: Truth conditions and aktionsart effects in a situation semantics. Natural Language Semantics 8: 297–347.
Deo, Ashwini. 2009. Unifying the imperfective and the progressive: Partitions as quantificational domains. Linguistics and Philosophy 32: 475–521.
Dickey, Stephen and Julie Hutcheson. 2003. "Delimitative Verbs in Russian, Czech and Slavic". In American Contributions to the 13th International Congress of Slavists. Volume 1: Linguistics, edited by Robert A. Maguire and Alan Timberlake. Bloomington: Slavica, pp. 23--36.
Dickey, Stephen. 2000. Parameters of Slavic Aspect: A Cognitive Approach. Stanford: CSLI.
Dickey, Stephen. 2006. "Aspectual Pairs, Goal Orientation and PO- Delimitatives in Russian". Glossos 7.
Dimitrova-Vulchanova, Mila. 1996. Verb Semantics, Diathesis, and Aspect. Ph. D. dissertation, Norwegian University of Science and Technology.

Dowty, David R. 1977. Toward a Semantic Analysis of Verb Aspect and the English "Imperfective" Progressive. Linguistics and Philosophy 1.45-78.
Dowty, David R. 1979. Word Meaning and Montague Grammar. The Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ. Dordrecht: Reidel.
Durst-Andersen, Per. 1992. Mental Grammar. Russian Aspect and Related Issues. Columbus, Ohio: Slavica Publishers.
Embick, David. 2004. On the structure of resultative participles in English. Linguistic Inquiry 35: 355–392.
Ernst, Thomas. 2002. The syntax of adjuncts. Cambridge: Cambridge University Press
Ferreira, Marcelo. 2005. Event quantification and plurality. PhD dissertation. Massachusetts Institute of Technology.
Filip, Hana, and Susan Rothstein. 2005. "Telicity as a semantic parameter." In Formal Approaches to Slavic Linguistics. The Princeton Meeting 2005, edited by James Lavine, Steven Franks, Mila Tasseva-Kurktchieva and Hana Filip. Ann Arbor: Michigan Slavic Publications, pp. 139-156.
Filip, Hana. 1999. Aspect, eventuality types and noun phrase semantics. New York & London: Garland Publishing.
Filip, Hana. 2000. The Quantization Puzzle. In Events as grammatical objects, from the combined perspectives of lexical semantics, logical semantics and syntax. edited by James Pustejovsky and Carol Tenny Sandord: CSLI Press, pp. 39-97.
Filip, Hana. 2003. "Prefixes and the Delimitation of Events". Journal of Slavic Linguistics 12: 55-101.
Filip, Hana. 2005a. "The Telicity Parameter Revisited". In Semantics and Linguistic Theory (SALT) XIV. Ithaca: CLC Publications, Department of Linguistics, Cornell University, pp. 92-109.
Filip, Hana. 2005b. "On accumulating and having it all". In Perspectives on Aspect, edited by Henk Verkuyl, Henriette de Swart, and Angeliek van Hout. Dordrecht: Springer, pp. 125-148.
Filip, Hana. 2008. "Events and maximization: The case of telicity and perfectivity." In Theoretical and Cross-Linguistic Approaches to the Semantics of Aspect, edited by Susan Rothstein. Amsterdam: John Benjamins, pp. 217-256.
Filip, Hana. 2017. The Semantics of Perfectivity. Italian Journal of Linguistics 29.1: 167-200.
Flier, M. S. and A. Timberlake. 1985. The Scope of Slavic Aspect. Columbus, Ohio: Slavica Publishers.
Flier, M. S. 1975. Remarks on Russian verbal prefixation. *Slavic and East European Journal* 19, 218-229.
Folli, Rafaella. 2002. Constructing Telicity in English and Italian. PhD dissertation. University of Oxford
Forsyth, J. 1970. A Grammar of Aspect. Usage and Meaning in the Russian Verb. Cambridge: Cambridge University Press.
Fu, Jingqi, Thomas Roeper and Hagit Borer. 2001. "The VP within Process Nominals: Evidence from Adverbs and VP anaphor Do-so". Natural Languages and Linguistic Theory 19: 549-582.
Giorgi, Alessandra and Fabio Pianesi. 1998. Tense an Aspect: From Semantics to Morphosyntax. Oxford: Oxford University Press.
Glovinskaja, Marina Y. 1982. Semantičeskie tipy vidovyx protivopostavlenij russkogo glagola. [Semantic types of aspectual opppositions in Russian.] Moskva: Nauka.

Grimshaw, Jane. 1990. Argument Structure. Cambridge, Mass.: MIT Press.
Grønn, Atle 2003. The Semantics and Pragmatics of the Russian Factual Imperfective. Doctoral dissertation. University of Oslo.
Grønn, Atle and Arnim von Stechow. 2010. "Complement tense in contrast: The SOT parameter in Russian and English". In Russian in Contrast, edited by Atle Grønn and Irena Marijanovic (Oslo Studies in Language 2-1), pp. 1–45.
Grønn, Atle and Arnim von Stechow. 2012. Adjuncts, attitudes and aspect: Some additions to a tense theory for Russian. Oslo Studies in Language, 4(1), 2012, pp. 263-304.
Grønn, Atle and Arnim von Stechow. 2013. Tense in Adjuncts Part 1: Relative Clauses. Language and Linguistics Compass, 7(5), pp. 295-310.
Grønn, Atle. 2015. On (in)definite tense and aspect in Russian. In Zybatow, Gerhild, Petr Biskup, Marcel Guhl, Claudia Hurtig, Olav Mueller-Reichau, and Maria Yastrebowa (eds.) Formal Description of Slavic Languages: Proceedings of FDSL 10, Leipzig 2013. Frankfurt: Peter Lang, pp. 175–196.
Harley, Heidi. 2009. The morphology of nominalizations and the syntax of *v*P. In Anastasia Giannakidou & Monika Rathert (eds.), Quantification, definiteness and nominalization, 321–343. Oxford: Oxford University Press.
Harley, Heidi. 2012. Lexical decomposition in modern syntactic theory. In: W. Hinzen, M. Werning and E. Machery (eds.) The Oxford Handbook of Compositionality. Oxford: Oxford University Press, pp. 328-350.
Harley, Heidi. 2013. External argument and the Mirror and Principle: On the distinctness of Voice and v. Lingua 125: 34-57.
Heim, Irene. 1997. Tense in compositional semantics: MIT lecture notes.
Iatridou, S., Anagnostopoulou, E. & Izworski, R. 2001. Some observations about the form and meaning of the perfect. In M. Kenstowicz (ed.), Ken Hale: A life in language, 189–238. Cambridge MA: The MIT Press.
Isačenko, A.V. 1960. Grammaticheskij stroj russkogo jazyka v sopostavvlenii so slovatskim. Bratislava.
Janda, Laura, Anna Endresen, Julia Kuznetsova, Olga Lyashevskaya, Anastasia Makarova, Tore Nesset, and Svetlana Sokolova. 2012. Russian 'purely aspectual' prefixes: Not so 'empty' after all? Scando-Slavica 58:2: 231-291.
Janda, Laura. 2007. "Aspectual clusters of Russian verbs". Studies in Language 31.3: 607-648.
Kagan, Olga. 2015. Scalarity in the verbal domain: The case of verbal prefixation in Russian. Cambridge: Cambridge University Press
Kamp, Hans and Uwe Reyle. 1993. From Discourse to Logic. Amsterdam: Kluwer.
Kamp, Hans, Uwe Reyle and Antje Rossdeutscher. 2015 Perfects as Feature Shifting Operators. Ms. University of Stuttgart.
Karcevski, S. I. 2004. Iz lingvističeskogo nasledija {From linguistic legacy}. Moscow: Jazyki Slavjanskix kultur.
Karcevski, Serge. 1927. Systeme du verbe Russe. Prague: Plamja.
Katz, Graham. 2003. A modal analysis of the English present perfect puzzle. In Semantics and Linguistic Theory XIII, ed. by Robert B. Young and Yuping Zhou, 145– 161. Ithaca: CLC Publications, Cornell University.
Klein, Wolfgang. 1992. The Present Perfect Puzzle. Language 68: 525-551.
Klein, Wolfgang. 1994. Time in Language. London: Routledge.
Klein, Wolfgang. 1995. A time-relational analysis of Russian aspect. Language 71: 669-695.

Kratzer, Angelika. 2003. The Event Argument and the Semantics of Verbs. Ms. UMass-Amherst.
Kratzer, Angelika. 2007. On the plurality of verbs. In Dolling, Johannes and Tatjana Heyde-Zybatow (eds.) Event structures in linguistic form and interpretation. . Berlin: Mouton de Gruyter, pp. 269– 300
Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. Linguistic Inquiry 40(2), 187–237.
Kratzer, Angelika. 2000. Building Statives. Berkeley Linguistic Society 26.
Krifka, Manfred. 1989. Nominal Reference, Temporal Constitution and Quantification in Event Semantics. In Semantics and Contextual Expression, edited by R. Bartsch, J. van Benthem, and P. van Emde Boas. Dordrecht: Foris Publications, pp. 75-115.
Krifka, Manfred. 1992. Thematic relations as links between nominal reference and temporal constitution. In Lexical Matters, edited by Ivan Sag and Anna Szabolsci. Stanford: CSLI, pp. 29-53.
Krifka, Manfred. 1998. The origins of telicity. In Events and Grammar, edited by Susan Rothstein. Dordrecht: Kluwer Academic Publishers, pp. 197-235.
Landau, Idan. 2010. “The explicit syntax of implicit arguments”. Linguistic Inquiry 41: 357-388
Landman, Fred. 1992. The progressive. Natural Language Semantics 1: 1-32.
Landman, Fred. 2000. Events and plurality: The Jerusalem lectures. Dordrecht: Kluwer.
Lasersohn, Peter. 1995. Plurality, conjunction and events. Dordrecht: Kluwer.
Lyutikova, Ekaterina and Sergei Tatevosov. 2012. A finer look at predicate decomposition: evidence from causativization. In Christopher Piñon (ed.) Empirical Issues in Syntax and Semantics 9.
Lyutikova, Ekaterina and Sergei Tatevosov. 2014. Causativization and event structure. In Causation in Grammatical Structures, edited by Bridget Copley and Fabienne Martin. Oxford: Oxford University Press, pp. 279-327.
MacDonald, Jonathan. 2008. “Domain of aspectual interpretation”. Linguistic Inquiry 39: 128-147.
Manova, Stela 2005: ‘Derivation versus Inflection in three Inflecting Languages’. Wolfgang Dressler, Dieter Kastovsky, Oskar Pfeiffer and Franz Rainer, eds. Morphology and its Demarcations. Amsterdam: John Benjamins. 233-52.
Markman, Vita G. 2008. On Slavic semelfactives and secondary imperfectives: Implications for the split ‘AspP’. University of Pennsylvania Working Papers in Linguistics: Vol. 14 : Iss. 1 , Article 20.
Markova, Angelina. 2007. Deverbal Nominals in Bulgarian: A Syntactic Analysis. MA thesis, Universitat Autɪnoma de Barcelona.
Maslov, Jurij S. 1984. Očerki po aspektologii. Leningrad: Izdatel’stvo Leningradskogo universiteta.
Matushansky, Ora. 2009. On the featural composition of the Russian back yer. In G. Zybatow, U. Junghanns, D. Lenertová and P. Biskup (eds.) Studies in Formal Slavic Phonology, Morphology, Syntax, Semantics and Information Structure. Proceedings of FDSL 7. Frankfurt: Peter Lang, pp. 397-410.
McCoard, Robert W. 1978. The English Perfect: Tense-Choice and Pragmatic Inferences. Amsterdam: Norht Holland.
Mehlig Hans Robert. 2012. Hybrid predications in Russian, Journal of Slavic linguistics, vol. 20, 2: 171-227.

Mehlig, Hans Robert. 1981. Satzsemantik und Aspektsemantik im Russischen. Zur Verbalklassifikation von Zeno Vendler, Slavistische Linguistik 1980, P. Hill, V. Lehmann (eds.), München 1981 (Slavistische Beiträge, 147), 95-151.

Mehlig, Hans Robert. 1995. Gomogennost i geterogennost v prostranstve i vremeni. In S. Karolak (ed.) Semantika i struktura slavyanskogo vida. Vol. I. Kraków, pp. 131-158.

Mezhevich, Ilana. 2008. "A feature-theoretic account of tense and aspect in Russian". Natural Language and Linguistic Theory 26: 359–401.

Moens, Marc and Mark Steedman. 1988. Temporal ontology and temporal reference. Computational Linguistics 14: 15–28.

Paducheva, E. 1996. Semantičiskie issledovanija. Moskva: Jazyki russkoj kul'tury

Pancheva Roumyana. 2003. The aspectual makeup of Perfect participles and the interpretations of the Perfect.

Pancheva, Roumyana & Arnim von Stechow. 2004. On the Present Perfect Puzzle. In K. Moulton & M. Wolf (eds.), Proceedings of NELS, vol. 34, 469–484.

Pancheva, Roumyana. 2003. The aspectual makeup of perfect participles and the interpretations of the perfect. In A. Alexiadou, M. Rathert & A. von Stechow (eds.), Perfect explorations. Berlin: Mouton de Gruyter, pp. 277–306.

Parsons, Terence. 1990. Events in the semantics of English: a study in subatomic semantics. Cambridge: MIT Press.

Paslawska, Alla, and Arnim von Stechow. 2003. Perfect Readings in Russian. In Perfect Explorations, edited by Monika Rathert, Artemis Alexiadou, and Arnim von Stechow. Berlin: Mouton de Gruyter, pp. 307-362.

Pazelskaya A. and S. Tatevosov. 2006. Uninflected VPs, deverbal nouns and aspectual architecture of Russian. In Lavine J., Franks S., Tasseva-Kurktchieva M., Filip H. (eds.). Formal approaches to Slavic Lingustics. The Princeton Meeting 2005. Ann Arbor: Michigan Slavic Publications, 258-277.

Pazelskaya, Anna and Sergei Tatevosov. 2008. Otglagol'noe imya i struktura russkogo glagola {Deverbal nouns and the structure of Russian verb}. In Issledovaniya po Glagol'noj Derivazii. {Studies in verbal derivation}, edited by Vladimir Plungjan and Sergei Tatevosov. Moscow: Yazyki slavyanskich kul'tur, pp. 284-312.

Pazelskaya, Anna. 2003. "Aspectualnost' i russkije predicatnyje imena" {Aspectuality and Russian deverbal nouns}. Voprosy Jazykoznanija 4: 72-90.

Pazelskaya, Anna. 2006. Nasledovanie Glagolnyx Kategorij Imenami Situacij. {Verbal categoties in event nominals.} Doctoral dissertation. Lomonossov Moscow State University.

Pereltsvaig, Asya. 2002. "On the Semantics of Russian Tense and Aspect Morphology". Ms., Stanford University.

Pesetsky, David, and Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In Simin Karimi, Vida Samiian, and Wendy K. Wilkins (eds.) Phrasal and clausal architecture. Amsterdam: John Benjamins, pp. 262–294.

Piñón C. 2008. Aspectual Composition with Degrees // McNally L., Kennedy C. (eds.) Adjectives and Adverbs: Syntax, Semantics and Discourse. Oxford: Oxford University Press.

Piñòn, Christopher. 1996. Aspectual composition and the 'pofective' in Polish. In Sergey Avrutin, Steven Franks & Liljana Progovac (eds.). Formal Approaches to Slavic Linguistics, 341-373. Ann Arbor: Michigan Slavic Publications

Piñon, Christopher. 2001. A Problem of Aspectual Composition in Polish. In Current Issues in Formal Slavic Linguistics, edited by Gerhild Zybatow, Uwe Junghanns, Grit Mehlhorn, and Luka Szucsich. Frankfurt/Main: Lang, pp. 397-415.
Polivanova, Anna. 1985. Vybor vidovykh form glagola v russkom jazyke. Russian Linguistics 9: 209-223.
Portner, Paul. 2003. The (temporal) semantics and (modal) pragmatics of the perfect. Linguistics and Philosophy 26: 459–510.
Portner, Paul.1998. The Progressive in Modal Semantics. Language, 74. 4:760-787.
Privoznov, Dmitrij. 2015. Participle Passives and Passive Participles in Russian: Aspect. Ziková Markéta , Pavel Caha and Mojmír Dočekal (eds.) Slavic Languages in the Perspective of Formal Grammar. Proceedings of FDSL 10.5, Brno 2014. Peter Lang Verlag, Frankfurt am Mein.
Prochazkova, Vera. 2006. Argument structure of Czech event nominals. MA thesis, University of Tromso.
Pustejovsky, J. 1995. The Generative Lexicon. Cambridge, Mass.: MIT Press.
Pylkkänen Liina. 2002. Introducing arguments. Ph.D. dissertation. MIT.
Ramchand, Gillian. 2004. Time and the event: The semantics of Russian prefixes. Nordlyd 32-2. Special issue on Slavic prefixes: 323-366.
Ramchand, Gillian. 2008. Verb Meaning and the Lexicon: A First Phase Syntax. Cambridge: Cambridge University Press.
Rapp, Irene and Arnim von Stechow. 1999. Fast 'almost' and the Visibility Parameter for Functional Adverbs. Journal of Semantics 16: 149-20
Rappaport Hovav, Malka and Beth Levin. 1998. Building verb meanings. In The Projection of Arguments: Lexical and Compositional Factors, edited by Miriam Butt and Wilhelm Geuder. Stanford: CSLI, pp. 97–134.
Rappaport, Gilbert. 2000. "The Slavic NP". In G. Fowler (ed.) Comparative Slavic Morphosyntax. Bloomington: Slavica Publishers.
Rappaport, Gilbert. 2001. "The Geometry of the Polish Nominal Phrase: Problems, Progress, and Prospects". In Generative Linguistics in Poland: Syntax and Morphosyntax, edited by Piotr Banski and Adam Przepiorkowski (eds.) Warsaw: Polish Academy of Sciences, pp. 173-89.
Roeper, Thomas. 1987. "Implicit arguments and the head-complement relation". Linguistic Inquiry 18: 267–310.
Roeper, Thomas. 2004. "Nominalizations: how a marginal construction rebuilds primary principles". Ms., University of Massachusetts.
Romanova, Eugenia. 2004. Superlexical vs. lexical prefixes. Nordlyd 32-2. Special issue on Slavic prefixes: 255-278.
Romanova, Eugenia. 2006. Constructing Perfectivity in Russian. Ph.D. dissertation, University of Tromsø.
Rothstein, Susan. 2004. Structuring Events: A Study in the Semantics of Lexical Aspect. Malden, MA: Blackwell publishing.
Schoorlemmer, Maaike. 1995. Participial Passive and Aspect in Russian. Doctoral dissertation, Utrecht, OTS.
Schulz, Katrin. 2014. Fake tense in conditional sentences: A modal approach. Natural Language Semantics 22(2). 117–144.Starke, Michal. 2010. Nanosyntax: A short primer to a new approach to language. Nordlyd 36. 1. Svenonius, Peter; Gillian Ramchand; Michal Starke; and Knut T. Taraldsen (eds.). Special issue on Nanosyntax, 1–6.

Slabakova, Roumyana. 2005. Perfective prefixes: what they are, what flavors they come in, and how they are acquired. Franks, Steven, Gladney, Frank and Tasseva-Kurktchieva, Mila (eds.) Formal Approaches to Slavic Linguistics 17, pp. 324-341.
Švedova, N. J. et al. (eds.) 1980. Russkaja grammatika, V. 1. Moscow: Nauka.
Švedova, Natalia (ed.). 1980. Russkaja Gramatika {Grammar of Russian}. Moscow: Nauka.
Svenonius, Peter. 2004. Slavic prefixes inside and outside VP. Nordlyd 32-2. Special issue on Slavic prefixes: 323–361.
Svenonius, Peter. 2008. Russian prefixes are phrasal. In Proceedings of Formal Descriptions of Slavic Languages 5, edited by Gerhild Zybatow, Luka Szucsich, Uwe Junghanns, and R. Meyer. Frankfurt am Main: Peter Lang, pp. 526-537.
Tatevosov, Sergei. 2008. "Nominalizaziya i problema nepryamogo dostupa" {Nominalization and the problem of indirect access}. In Dinamicheskije Modeli. Slovo. Predlozhenie. Text. Sbornik statej v chest' E.V.Paduchevoy. Moscow: Yazyki slavyanskich kul'tur, pp. 750-772.
Tatevosov, Sergei. 2008. Subevental structure and non-culmination. In Olivier Bonami and Patricia Cabredo Hofherr (eds.) Empirical issues in syntax and semantics 7: 393–422.
Tatevosov, Sergei. 2009. Mnozhestvennaya prefiksaziya i anatomiya russkogo glagola {Multuple prefixation and the anatomy of Russian verb}. In Korpusnye Issledovaniya po Russkoj Grammatike {Corpus-based Studies in the Grammar of Russian}, edited by Xenia Kisseleva, Vladimir Plungian, Ekaterina Rakhilina, and Sergei Tatevosov. Moscow: Probel, pp. 92-156.
Tatevosov, Sergei. 2011. Severing Perfectivity from the Verb. Scando-Slavica 57: 216-244.
Tatevosov, Sergei. 2013b. Destruktivnyie zametki o raspredelitelnom sposobe deystviya. {Destructive notes on the distributive Aktionsart.} Russkij jazyk v nauchnom osveshchenii. №2, pp. 24-44.
Tatevosov, Sergei. 2013a. Množestvennaja prefiksatsija i ee sledstvija: Zamentki o fiziologii russkogo glagola. { Multuple prefixation and its consequences. Remarks on the physiology of Russian verb}. Voprosy jazykoznanija 2013-3: 42-89.
Tatevosov, Sergei. 2014. Perfectivity in Russian: A modal analysis. Proceedings of the 44th Annual Meeting of the North East Linguistic Society. Edited by Jyoti Iyer and Leland Kusmer. Volume 2. Amherst: GLSA. Pp. 196-210.
Tatevosov, Sergei. 2015a. Severing imperfectivity from the verb. In Zybatow, Gerhild, Petr Biskup, Marcel Guhl, Claudia Hurtig, Olav Mueller-Reichau, and Maria Yastrebowa (eds.) Formal Description of Slavic Languages: Proceedings of FDSL 10, Leipzig 2013. Frankfurt: Peter Lang, pp. 465-494.
Tatevosov, Sergei. 2015b. Akcional'nost' v Leksike i Grammatike {Actionality in lexicon and grammar}. Moscow: Jazyki Slavjanskoj Kultury.
Tatevosov, Sergei. 2016. Glagol'nye klassy I tipologija aktsionalnosti. Moscow: JSK.
Timberlake, A. 1982. "Invariance and the syntax of Russian aspect." Hopper, P. J. (ed.) Tense-Aspect: Between Semantics and Pragmatics. John Benjamins Publishing Co. Amsterdam/Philadelphia.
Tolskaya Inna K. 2014. Verbal prefixes in Russian: Conceptual structure versus syntax. Jornal of Linguistics :1-31.
Travis, Lisa. 2010. Inner Aspect: The Articulation of VP. Dordrecht: Springer.
Valdivia, Glòria de, Joan Castellví and Mariona Taulé. 2013. Morphological and lexical aspect in Russian deverbal nominalizations. In Kor Chahine, Irina (ed.) Current Studies in Slavic Linguistics. Amsterdam: John Benjamins.

van Hout, Angeliek and Thomas Roeper. 1998. “Events and Aspectual Structure in Derivational Morphology”. In Papers from the UPenn/MIT Roundtable on Argument Structure and Aspect, edited by Heidi Harley. Cambridge, MA: MIT Press, pp. 175-200.
Varasdi, Károly. Making progressives: necessary conditions are sufficient. Journal of Semantics 31:179–207.
Verkuyl, Henk. 1972. On the Compositional Nature of the Aspects. Dordrecht: Reidel.
Verkuyl, Henk. 1993. A Theory of Aspectuality. The Interaction between Temporal and Atemporal Structure. Cambridge Studies in Linguistics, Vol. 64. Cambridge: Cambridge University Press.
Verkuyl, Henk. 1999. Aspectual Issues. Structuring Time and Quantity. CSLI Lecture Notes, Vol. 98. Stanford: CSLI Publications.
von Stechow, Arnim. 1996. The different readings of wieder ‘again’: A structural account. Journal of Semantics 13: 87-138.
von Stechow, Arnim. 2009. “Tenses in Compositional Semantics.” In: The Expression of Time. Ed. by Wolfgang Klein and Ping Li. Berlin: De Gruyter, pp. 129–166.
Zalizniak, Anna A. & Alexei D. Šmelev. 2000. Vvedenije v russkuju aspectologiju. [Introduction to the Russian aspectology.] Moscow:Studia Philologica.
Žaucer, Rok. 2009. A VP-internal/resultative analysis of 4 VP-external uses of Slavic verbal prefixes. PhD thesis, University of Ottawa.
Žaucer, Rok. 2010. The reflexive-introducing na- and the distinction between internal and external Slavic prefixes. In Formal Studies in Slavic Linguistics, edited by Anastasia Smirnova, Vedrana Mihaliček and Lauren Ressue. Newcastle: Cambridge Scholars, pp. 54-103.
Žaucer, Rok. 2013. A case for result-modifying prefixes. In Podobryaev et al. (eds.) Formal Approaches to Slavic Linguistics 20. Ann Arbor: Michigan Slavic Publications
Zeijlstra, Hedde. 2012. There is only one way to agree. The Linguistic Review 29: 491–539.
Zucchi, Sandro. 1999. Incomplete events, intensionality, and imperfective aspect. Natural Language Semantics 7: 179–215