

Severing Perfectivity from the Verb*

1. Introduction

When do aspectual operators enter the syntactic and semantic derivation in Russian? Ancestors' wisdom tells us that this happens as early as one could ever imagine: the vast majority of Russian verbs *are born in the lexicon as either perfective or imperfective*. In this respect, Russian and other languages possessing what is sometimes referred to in the typological literature (e.g., Bybee, Dahl 1989) as 'Slavic-style aspect' differ crucially from languages like English. Arguably, verbs in the latter type of languages, lexically aspectless, only acquire aspect in the course of syntactic derivation, when the clausal functional structure is projected that creates (or, in some frameworks, licenses) inflectional forms like the past, perfect, progressive, etc. This sharp asymmetry in how aspect is construed in natural language is a huge challenge for any theory that seeks to constrain cross-linguistics variation and to minimize ineliminable assumptions about linguistic diversity that have to be stipulated. The view that aspect in languages like Russian emerges in the lexicon, while in other languages is built syntactically clearly requires precisely this type of assumptions.

But what are the reasons to believe that ancestors' wisdom is true? That is, what are the reasons to assume that what is happening in (1) is (2) rather than (3)?

- (1) Vasja **na-pisa-l** pis'm-o.
 V. PRF-write-PST.M letter-ACC
 'Vasja wrote a letter.'
- (2) [CP ... [F_i+IP ... [F_iP ... [F_i-IP ... [VP ... [V **PFV** *napisa-*]]]]]¹
- (3) [CP ... [F_i+IP ... [F_iP ... **PFV** [F_i-IP ... [VP ... [V *napisa-*]]]]]

(1) is a paradigmatic example of perfective sentence. (2) suggests that this sentence is derived by taking the *perfective verb stem napisa-* 'write.PFV' from the lexicon and doing whatever syntactic computation is needed to build up a well-formed Russian sentence. As soon as the stem *napisa-* enters the derivation, the perfective aspect is there. (3) offers a different view. Indeed, all we know for sure from examples like (1) is that verbs like *napisa-t* 'write' end up perfective *in a clause*. So it could well be the case that perfectivity originates higher than (2) suggests: it is part of a functional domain of a clause, while the stem *napisa-* as such is lexically *aspectless*.

The crucial thing to note is that predictions (2) and (3) make with respect to the aspectual value of (1) are exactly the same: on both views, (1) comes out perfective. Yet, traditional Slavic aspectology, going back to XIX century, only admits (2), which I will call *an aspect-low theory* from

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¹ (2)-(3) and similar representations assume the standard X-bar theory, where "X" is a head that belongs to the category X, and "X'" and "XP" are its intermediate and maximal projections, respectively. (2)-(3) reflect the view that a clause (a projection of complementizer, CP) contains a sequence of functional projections symbolized as F with a subscript. I am grateful to the anonymous reviewer who encouraged me to provide this brief introduction to the formalism.

now on, as a reasonable theory of aspect. The same position is adopted in many recent studies as well, including (but not limited to) Krifka 1992, Filip 1999, 2003, 2005a,b, **2008, **Dimitrova-Vulchanova 1996, Verkuyl 1999, Piñon 2001, Ramchand 2004, Filip, Rothstein 2005, Pereltsvaig 2002, McDonald 2008, Mezhevich 2008. The mere possibility of analyzing (1) along the lines of (3), which can be labeled *an aspect-high theory*, has never been seriously taken into consideration. The only line of inquiry I know of that instantiates a version of an aspect-high theory can be found in Arnim von Stechow and his colleagues' work (Paslawska, von Stechow 2003, Grønn, von Stechow 2010).

But if it is true that the less cross-linguistic variation a theory has to stipulate the more explanatory adequacy it gains, (3) is exceedingly superior to (2). In neither English nor Russian is aspect lexically pre-attached to the verb. In both English and Russian (uninflected) verbs and VPs are aspectless. Ultimately, (3) opens a way of providing a unified account for the structure and interpretation of verbs and VPs in both types of languages. As long as one assumes (2), the way is obstructed by the PFV showing up at the V⁰ level in Russian, but not in English.²

This purely conceptual reason to favor (3) over (2) is of course not decisive by itself. Is there empirical evidence that points towards the same conclusion? The aim of this paper is to introduce such an evidence and to establish an argument that (3) is to be preferred over (2) on purely empirical grounds.³

The crux of the argument comes from the following reasoning. (2) and (3) make the same (correct) prediction that (1) is perfective. But this is not the only prediction they make, and it is here that a possibility of telling them apart emerges. (3) tells us that there is a stage of syntactic derivation where the stem *napisa-* is already there, but perfectivity is not. (2) predicts that there is no such a stage. Therefore, if we can find a configuration in which stems like *napisa-* occur without bringing in perfectivity, this would mean that aspect is not their built-in semantic characteristic, hence the aspect-low theory in (2) is not correct, hence the aspect high-theory in (3) is. And I will show that this is exactly what happens in Russian.

The rest of the paper is structured as follows. In Section 2, I will briefly outline familiar perfectivity effects, that is, prominent semantic characteristics of perfective sentences like (1). Whenever one observes these effects, one can be sure that the perfective aspectual operator is there. The empirical question that emerges in the end of this section is: is it possible that “perfective

² The Scando-Slavica anonymous reviewer rises the following question: “It seems that a crucial question... is whether the notion of perfective (and imperfective) can be applied straightforwardly to clauses/sentences cross-linguistically; isn't it rather the case that, in Russian, (verbal) aspect is seen as a binary category exactly because of the necessary choice between pf. and ipf. verbs,... i.e. a language specific category, whereas the semantic categories denoted by both these grammatical lexical grams vary in their event structure (progressive, habitual, frequentative, resultative, completive, experiential, etc.)?” I agree completely that a clear distinction is to be drawn between language-specific grams that receive a concrete morphosyntactic realization in a given language and semantic content of those grams, which, as huge typological literature teaches us (Comrie 1976, Dahl 1985, Bybee et al. 1994), is universal. On this view, we can talk about the same perfective meaning (roughly, ‘the reference time includes the event time’, Klein 1994) in languages like English and languages like Russian, despite huge differences in the morphosyntactic shape of TMA systems of those languages.

³ I share the view with the anonymous reviewer that the general theoretical desideratum of reducing the cross-linguistic variation to the absolutely necessary minimum can only be justified if the theory provides at least as good empirical coverage of the data as its less constrained alternatives. I believe that generalizations established below provide decisive evidence that a theory along the lines of (3), which admits less cross-linguistic variation in the aspectual morphosyntax than (2), gains a lot of *empirical* advantages.

stems” like *napisa-* in (1) appear in the derivation without producing perfectivity effects? In Section 3 this question receives a positive answer: I will show that this is precisely what is going on with *process deverbal nominals* in *-nie*. In Sections 4-5, I discuss structure and interpretation of these nominals, arguing that they serve exactly the type of configuration we are after: the one that contains VP and a restricted amount of functional structure above it, but crucially lacks functional projections that constitute a fully inflected clause. Since *nie*-nominals do not exhibit perfectivity effects, perfectivity is not part of the structure they share with fully inflected clauses. This means that aspectual operators come into play at later stages of derivation, when the functional structure is built that nominals *do not share* with clauses. What we get is thus (some or other variant of) an aspect-high theory.

2. Perfectivity effects

To begin with, I would like to note that while I focus on perfectivity in what follows, conclusions I reach seem to extend to any aspectual operator. Regardless of what theory — aspect-low in (2) or aspect-high in (3) — proves to be right, it is reasonable to assume as a null hypothesis that perfective and imperfective/progressive operators are derivationally symmetric. That is, either both of them combine with the verb in the lexicon (in a world according to (2)) or both merge within the same syntactic functional projection (in a world according to (3)). Therefore, for the purposes of this paper it should suffice to identify the precise location of either of them. Below I will be looking at the perfective rather than imperfective for a very simple reason: perfectivity effects are prominent, easily detectable and well-studied. As soon as we see them, we know that the perfective operator is there. And as soon as we know where the perfective is, we know about the imperfective as well.

Perfectivity manifests itself in a number of ways. First of all, the perfective has a peculiar morphosyntactic distribution: it does not occur in Periphrastic Future, (4), and as a complement of aspectual/phasal verbs, (5).

(4) *Vasja bud-et **na-pisa-t'** pis'm-o.
 V. AUX-3SG PRF-write-INF letter-ACC
 ‘Vasja will write a letter.’

(5) *Vasja nača-l **na-pisa-t'** pis'm-o.
 V. start-PST.M PRF-write-INF letter-ACC
 ‘Vasja started writing a letter.’

Secondly, whenever the topic time is introduced by an adverbial clause, this time cannot be included in the running time of an event referred to by the perfective. Thus, for instance, the time of writing in (6) can either follow the time of coming (this is a preferable interpretation), or precede it. It cannot be the case, however, that the time of writing includes the time of coming, as in (6.2).

(6) Kogda ja priše-l, Vasja **na-pisa-l** pis'm-o.
 when I come-PST.M V. PRF-write-PST letter-ACC
 1. ‘When I came, Vasja wrote a letter’
 2. *‘When I came, Vasja was writing a letter’

Thirdly, most perfectives are obligatorily telic,⁴ as the common test on co-occurrence with time-span and measure adverbials indicates:

- (7) a. Vasja **na-pisa-l** pis'm-o za dva čas-a.
 V. PRF-write-PST.M letter-ACC in two.ACC hour-GEN
 'Vasja wrote a letter in two hours.'
 b. *Vasja **na-pisa-l** pis'm-o dva čas-a.
 V. PRF-write-PST.M letter-ACC two.ACC hour-GEN
 'Vasja wrote a letter for two hours.'

Telicity of perfective clauses like (7) can also be shown by Verkuyl's (1972) conjunction criterion. Verkuyl discusses a contrast between English telic sentences like *John ate a sandwich at 2 p.m. and at 3 p.m.* and atelic sentences like *John ran at 2 p.m. and at 3 p.m.* The former only has one reading, whereby two distinct eating events occur at 2 p.m. and at 3 p.m. The latter also allows for a the second reading: the same running event occupies the time span between 2 p.m. and 3 p.m. Consider (8):

- (8) Vasja **na-pisa-l** pis'm-o v
 V. PRF-write-PST.M letter-ACC in
 dva čas-a i v tri čas-a.
 two hour-GEN and in three hour-GEN
 'Vasja wrote a letter at 2 p.m. and at 3 p.m.'

Napisal 'wrote' combined with conjoined temporal adverbials is unambiguous: (8) can only describe two distinct events, one occurring at 2 p.m., another at 3 p.m. It cannot mean that the same writing event lasted from 2 p.m. to 3 p.m., which would have been the case if (8) were atelic.

The last perfectivity effect I would like to discuss manifests itself in aspectual composition (Verkuyl 1972, 1993, 1999; Krifka 1989, 1992, 1998, Piñon 2001, a. m. o.), as illustrated in (9)-(10):

- (9) Vasja **na-pisa-l** pis'm-a...
 V. PRF-write-PST.M letter-ACC.PL
 1. 'Vasja wrote (all) the letters.'
 2. *'Vasja wrote letters.'
 (10) ... *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 (9) indicates, perfectivity restricts interpretation of the undetermined plural (or mass) incremental argument.⁵ It must have what Filip (2005 and elsewhere) calls the unique maximal

⁴ Atelic perfectives are limited to the so called Delimitative and Perdurative Aktionsarten like *poguljat* 'walk for a while' and *prosudet* (*tri časa*) 'sit for three hours long'. These Aktionsarten are of huge significance for the overall picture of Russian verbal system (Dickey 2006, Dickey and Hutcheson 2003), but are irrelevant for the argument I am trying to establish. I ignore them in what follows.

⁵ For simplicity, I ignore the well-known problem that an individual standing in the theme relation to events in the extension of predicates of creation only exists at the minimal final part of the event.

interpretation whereby the object DP refers to a maximal individual consisting of all entities of a particular type available at the universe of discourse. Thus, in (10) explicit indication that there are more letters to write yields a contradiction.

3. Deverbal nominals

As was indicated earlier, the decisive evidence telling the two theories apart could come from a configuration where some of the clausal functional projections are absent. If we manage to get rid of (some of) the functional structure, as in (11)-(12) as compared to (2)-(3) (the “deleted” structure is shaded), and find out that perfectivity effects are gone, this can only be due to the fact that aspectual operators merge high enough – outside the *Fi-IP* residue.

(11) [CP ... [Fi+IP ... [FiP ... [Fi-IP ... [VP ... [V **PFV**-napisa-]]]]]]

(12) [CP ... [Fi+IP ... [FiP ... **PFV** [Fi-IP ... [VP ... [V napisa-]]]]]]

Therefore, what we need is a structurally deficient configuration where a clause is only partially projected. It would give us an opportunity to see properties of verbs and VPs at early stages of syntactic derivation, when (at least some of) the clausal structure is not yet there.

One option suggests itself immediately: the configuration we are after can be found in *event-denoting argument supporting deverbal nominals*. Much research has been done during past few decades (e.g., Abney 1987, Alexiadou 2001, 2005, 2009, 2010, Alexiadou *et al.* 2010, Fu *et al.* 2001, Harley 2009, van Hout, Roeper 1998, Roeper 1987, 2004, among many others) that yields extensive evidence that a huge class of such nominals 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 (13)-(14):

(13) [CP ... [FiP ... [F2P ... [F1P ... [vP ... [VP ... [V ... V ...]]]]]]]

(14) [DP ... D [NP ... N ... [F1P ... [vP ... [VP ... [V ... V ...]]]]]]]

Due to space limitations I am not able to address the theory of nominalization in any detail. I merely adopt (14) as a working hypothesis (but see Section 4 below) and will proceed directly to the next set of empirical observations.

The crucial prediction is: if the aspect-low 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 aspect-high theory, PFV is a component of functional structure, and it is this structure that deverbal nominals are lacking (i.e., the structure above F1P in (13)), nominals will never show perfectivity effects. This prediction of the aspect-high theory is summarized in (15)-(16):

(15) [CP ... [FiP **PFV** ... [F2P ... [F1P ... [vP ... [VP ... [V napisa-]]]]]]]

(16) [DP ... D [NP ... N ... [F1P ... [vP ... [VP ... [V napisa-]]]]]]]

Now we are in a position of testing the prediction. As a testing ground for evaluating (15)-(16) I take event-denoting nouns in *-nie/tie* illustrated in (17), *nie*-nominals hereafter.

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

The noun *napisa-nie* consists of the verb stem *napisa-* (the same as in the clause in (1) and similar examples), the *-n-* morpheme *nie*-nominals share with perfective past participles (e.g., *napisa-n* 'written', see Babby 1997), the noun morpheme *-ij-* and noun inflection.

This class of nominals in Russian as well as its cognates in other Slavic languages have recently attracted much attention (Schoorlemmer 1995, Babby 1997, Rappaport 2000, 2001, Pazelskaya 2005, 2006, Pazelskaya and Tatevosov 2005, Prochazkova 2006, Markova 2007, Tatevosov 2008), and debates are going on on what exactly their structure is. I will return to this issue shortly, in Section 4. At the moment, let us simply apply to *nie*-nominals the tests that identify perfectivity effects in (4)-(10). The striking result is: all the tests come negative⁶.

First, morphosyntactic distribution. For obvious reasons one cannot run the periphrastic future test for nouns: periphrastic nominalizations in Russian are ill-formed in the first place no matter what the verbs stem is. But the test on co-occurrence with phasal verbs is applicable, and (18) shows that unlike the infinitival clause in (5), the *nie*-nominal based on the "perfective" stem *napisa-* 'write' is readily available.

- (18) Vasja nača-l **na-pisa-n-ij-e** pis'm-a.
 V. start-PST.3SG PRF-write-N/T-NOUN-ACC letter-GEN
 'Vasja started writing a letter.'

Secondly, interval properties. We saw in (6) that the running time of an event described by the perfective clause cannot include a topic time (e.g., specified by an adverbial). This is not the case with *nie*-nominals:

- (19) 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
 Lit. 'I came at the time of writing a letter.'

In (19), the noun *napisa-nie* occurs within a complex temporal PP. Crucially, unlike in (6), "perfectivity" of *napisa-* does not prevent the running time of a writing event from including the time of coming event.

Thirdly, telicity. Testing for telicity of nominals by using the in/for diagnostic faces a complication. While *in*-adverbials are compatible with telic *nie*-nominals (e.g., *napolnenie vannы (vsego) za pjat' minut* 'filling up the tub in (only) five minutes'), *for*-adverbials are odd regardless

⁶ In this respect, deverbal nominals contrast sharply with most non-finite verbal forms like infinitives, participles and gerunds, which exhibit the same perfectivity effects as finite perfective verbs. Given that these items occur in syntactic configurations that preserve most of the structure of finite clause (see a recent survey Babby 2010 and references therein), this fact is by no means surprising. I am grateful to the Scando-Slavica anonymous reviewer for turning my attention to this issue.

of the telicity of the nominal. Even clearly atelic nominals like *guljanie* ‘waking’ are certainly awkward for most speakers in combination with *dva časa* ‘for two hours’. Yet, we have the conjunction criterion at our disposal, and the result it yields is again sharply different as compared to what we got in (8) with the fully inflected clause:

- (20) **na-pisa-n-ij-e** pis'ma v dva čas-a i v tri čas-a.
 PRF-write-N/T-NOUN-NOM letter-GEN in two hour-GEN and in three hour-GEN
 ‘writing a letter at 2 p.m. and at 3 p.m.’
 1. OK: two distinct events
 2. **OK: a single continuous event**

(20), in parallel with (8), does allow a reading whereby two distinct writing events occur at 2 p.m. and at 3 p.m. But it is also fully compatible with a single event scenario whereby writing continues from 2 p.m. to 3 p.m. This range of interpretations shows that unlike the corresponding fully inflected clause in (8), the *nie*-nominal is not necessarily telic.

Finally, aspectual compositional effects. In (9), the incremental argument of *napisa-* obligatorily receives the unique maximal interpretation in the clausal environment. The same argument of the same stem occurring in a nominal configuration does not:

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

In (21), the unique maximal interpretation is an option, but not the only option. In (21.2) 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. (21.2) only indicates that there are letters that undergo writing.

The crucial support for this generalization comes from examples like (22)-(23):

- (22) **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...’

- (23) ... ^{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).’

(22)-(23) are parallel to (9)(10), where the explicit claim that there are letters not involved in writing yields a contradiction. This is not so in (22)-(23): given that the bare interpretation of ‘letters’ is available in (21.2), it is this interpretation that shows up in (22) making (23) a felicitous continuation of the discourse.

We are in a position of drawing a generalization from examples like (18)-(23): *nie*-nominals are aspectless. Whatever diagnostics for perfectivity we take (morphosyntactic

distribution, interval properties, telicity, aspectual composition), we see no perfectivity effects whatsoever in *nie*-nominals. Aspectual operators are thus not part of their semantic structure.⁷ If, as (15)-(16) above suggest, fully inflected clauses and *nie*-nominals share a piece of structure, α in (24)-(25), PFV must be located outside α .

(24) [CP ... [HP ... **PFV** ... [α ... *napisa-* ...]]]]

(25) [DP ... D [NP ... [N *ij*] [NominalP [Nominal *n*] ... [α ... *napisa-* ...]]]]

When a clause is build, at some point the projection of a head H that hosts the aspectual operator appears in the derivation, as in (24), and it is at this point where the perfectivity effects come in. But nominals involve a smaller fragment of structure: they merge with nominal heads before HP is projected. At this stage, aspect is not yet there. This provides a principled explanation for why *nie*-nominals do not exhibit perfectivity effects.

Do we have already evidence for the aspect-high theory? Not yet. After all, the generalization that *nie*-nominals are aspectless is not a great news. Traditional Slavic linguistics, including Švedova (ed.) (1980), is not unaware of this fact: “Aspectual meaning of a motivating verb is not reflected in the semantics of a corresponding noun” (Švedova (ed.) 1980, §261)). Therefore, for the proposal to work, more has to be said.

First, so far I have been assuming (reasonably, I believe) that *if* nominals and fully inflected clauses are analyzed along the lines of (13)-(14), *then* properties of the former can be a source of information about properties of the latter. But I have not yet shown that fully inflected clauses and *nie*-nominals in Russian *must* be analyzed that way, that is, that nominals and clauses do indeed share structure (α in (24)-(25)). For if nominals are derived completely independently from clauses, the very fact that they lack aspectual operators does not tell us anything about the location of these operators within a clause. Only if up to some point in the derivation, α in (24)-(25), clauses and nominals are *literally the same*, the fact nominals are aspectless provides us with an evidence that within clauses the aspectual operator is located outside α .

Secondly, we have to be sure that the α is sufficiently large to discriminate between the aspect-high and aspect-low theories. For if $\alpha=V^0$, then all we know is that aspect is not part of V^0 . This is not bad, too: recall from the introduction that most Slavic aspectologists tend to believe that aspect is a lexical characteristic of a verbs, hence is necessarily a component of V^0 . Now we can be sure it is not. Yet, the aspectual operator can be low enough – not necessarily in the functional domain, as in (24), but still, say, in the VP-domain. One option that emerges if $\alpha=V^0$ is shown in (26):

(26) [VP **PFV** [V' ... [V^0 *napisa-*] ...]]]

Therefore, we have to determine what part of clausal structure, if any, *nie*-nominals in Russian contain and how much they have in common with fully projected clauses. If the logic behind (15)-(16) and (24)-(25) is correct, and this part of structure does not contain aspectual operators, then the larger it is, the higher those operators are located.

⁷ Among other things, this provides an independent support for the claim that prefixes in Russian are not morphological exponents of the perfective aspect (Filip 1999 and elsewhere, Paslawska, von Stechow 2003). Had this been the case, *nie*-nominals based on prefixed stems would have inevitably been perfective.

Therefore, next two sections will be devoted to establishing, first, that *nie*-nominals and fully inflected clauses do indeed share structure, and secondly, that this piece of structure is fairly large.

4. *Nie*-nominals vis-à-vis fully inflected clauses

The argument I am trying to establish throughout this paper is: given the premise that fully inflected clauses and *nie*-nominals share a piece of structure α (see (24)-(25)), and given the fact the former contain an aspectual operator and the latter are aspectless, it follows that aspect cannot be part of α . Vladimir Plungian (p.c.) raises the following question: Why cannot things be the other way round, and why cannot the whole argument be reversed? Assume that clauses are perfective/imperfective because verbs are, exactly as the tradition teaches us. It follows from this premise and from the fact that nominals are indeed aspectless that verbs / clauses and nominals cannot share structure. They must be derived fully independently from each other.

Therefore, the fact that *nie*-nominals are aspectless acquires different theoretical import depending on what the premise is. If the premise is that clauses and nominals are derivationally related, then the conclusion is that aspect is not part of the structure they share, hence the aspect-high theory must be correct. But if the premise is that the aspect-high theory is wrong, and its aspect-low alternative is correct, then the conclusion is that nominals and clauses do not have a constituent in common. The question emerges at this juncture: can these theoretical options be told apart empirically? Can the view behind (24)-(25) be independently motivated? In this section, I will try to establish an empirical argument supporting the positive answer to this question.

The argument relies on the following reasoning. So far, in Sections 2-3, we have been dealing with systematic *differences* between fully inflected clauses and *nie*-nominals. Only looking at the differences is indeed insufficient to determine if the derivation of clauses and *nie*-nominals is the same up to some point: whatever differences we take, they tell us what is going on *above* that point. However, if we take into account *similarities*, things change. The view that clauses and nominals share a constituent predicts that they must resemble each as to the properties of that constituent. We expect that such similarities must be easily observable and fully systematic. Identifying them would thus yield a crucial argument for the structure-sharing between clauses and nominals, hence for the whole proposal I am developing in this paper. The alternative view — no structure-sharing — predicts random variation. Different nominals should differ from different verbs in different ways. These are kind of predictions we can test empirically.

What kind of phenomena do we have to look at if we want to detect systematic similarities between clauses and nominalizations, hence to defend the analysis along the lines of (24)-(25)? It is reasonable to suggest that if clauses and deverbal nominals share a constituent at all, it should be a constituent created at a (relatively) early stage of derivation – V^0 , VP, or vP . At such a stage, (most) functional categories are not yet there, but there is at least one characteristic that should be 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.

If this assumption is correct, we know what to do next. Take two verbs creating clauses that differ admittedly in terms of event structure. Build corresponding nominals. If the difference between clauses is not preserved in nominals, there are good reasons to conclude that there is no structure-sharing. If, on the other hand, the difference is preserved, and this happens recurrently, whatever lexical material we deal with, this can be taken as a reliable evidence that clauses and

nominals undergo the same derivation up to a certain point. If *nie*-nominals never differ from corresponding clauses event-structurally, this would mean that the constituent responsible for building a complete event structure is literally identical in both cases.

Implementing this strategy we can in principle take any verbs and corresponding *nie*-nominals for our event structure study. But for ease of exposition I will use derivationally related items – transitive incremental verbs like *napisa-t* ‘write’, their non-prefixed counterparts like *pisa-t* ‘write’, and corresponding *nie*-nominals, *na-pisanie* and *pisanie* ‘writing’, respectively.⁸ I will first discern the event structural difference between *napisa-t* and *pisa-t* ‘write’, and then show that the same difference characterizes *na-pisanie* and *pisanie* ‘writing’.⁹

As Pazelskaya, Tatevosov 2006 and Tatevosov 2011 argue, non-prefixed stems like *pisa-* are essentially transitive activities involving a single subevent. Their prefixed counterparts like *na-pisa-* create an accomplishment event structure consisting of two subevents. In neo-Davidsonian event semantic framework *pisa-* and *napisa-* can be analyzed as follows:

(27) $\| pisa- \| = \lambda y \lambda x \lambda e [write(e) \wedge agent(x)(e) \wedge theme(y)(e)]$

(28) $\| na-pisa- \| = \lambda y \lambda x \lambda e \exists s [write(e) \wedge agent(x)(e) \wedge theme(y)(e) \wedge cause(s)(e) \wedge written(s) \wedge arg(y)(s)].$

According to (27), *pisa-* denotes a simplex event structure, which is a three-place relation between two individuals, agent and theme, and writing events. In contrast, (28) involves a complex event structure consisting of two causally related subevents, the activity subevent, and the result state subevent. Subevents share a theme participant. The activity part of (28) is identical to that in (27), and what makes (28) different from (27) is a state of being written brought about by the activity. (For simplicity, I assume that the state variable is existentially bound to begin with. As Paslawska and von Stechow (2003) argue at length, the real state of affairs is considerably more complex, but this is not relevant for the present discussion.)

There are a lot of standard diagnostics designed to separate these two types of event structure, including the scope of negation and adverbials like ‘almost’ (Dowty 1979 and much subsequent work), scope of ‘again’ (see especially von Stechow 1996), and argument realization patterns (Rappaport Hovav and Levin 1998 and elsewhere). Essentially, most of these diagnostics point towards the same general observation: there exist operators that can take scope over one of the components of accomplishment structure not affecting another component. Combined with accomplishment predicates, these operators are scopally ambiguous. Activities, being simplex, are unable to give rise to scope ambiguities.

Space limitations prevent me from demonstrating all these diagnostics at work (see Tatevosov 2011 for a more detailed survey). I will only show that (27)–(28) are justified by the range of interpretations of *pisa-* and *napisa-* under negation. Consider (29):

(29) Vasja ne **na-pisa-l** kursov-uju.
V. not PRF-write-PST.M term.paper-ACC

⁸ What I say about *napisa-t* fully extends to other verbs that fall within this class; see Tatevosov 2011.

⁹ In doing so, I will be abstracting away from the fact that *napisa-* creates perfective and *pisa-* imperfective clauses. Event structure is a semantic characteristic orthogonal to grammatical aspect, and it is event structural but not aspectual considerations that are relevant to the argument being worked out in this section.

‘Vasja did not write his term paper.’

1. No writing activity has been performed.
2. The writing activity has not been completed.

- (30) Vasja ne **pisa-l** kursov-uju.
V. not write-PST.M term.paper-ACC
‘Vasja did not write his term paper.’
1. No writing activity has been performed.
2. *The writing activity has not been completed.

(29) demonstrates the standard ambiguity whereby the negation can scope either above or below the activity subevent. On the wide scope reading, (29.1), the sentence indicates that neither activity nor result state have occurred. On the narrow scope reading, (29.2), the result state only falls under negation. No such ambiguity can be detected in (30): (30) does not allow a reading corresponding to (29.2). (27)-(28) account for this in a principled way: the accomplishment event structure in (28), but not the activity event structure in (27), provides the negation with a subevental content that introduces different scope possibilities.

Now that we established that stems like *pisa-* and *napisa-* are associated with different event structures in the clausal environment, the further expectation is straightforward. Event structure is what nominals share, by hypothesis, with fully inflected clauses. If this is indeed the case, *nie*-nominals like *pisanie* and *napisanie* ‘writing’ should exhibit the same contrast under negation as fully inflected clauses in (29)-(30). The expectation is borne out, as (31)-(32) illustrate.

- (31) **Ne-na-pisa-n-ij-e** kursov-oj (k dedlajnu) budet imet’ serjeznyje posledstvija.
not-PRF-write-N/T-NOUN-NOM term.paper-GEN to deadline will have serious consequences
‘Not writing a term paper (before the deadline) will have serious consequences.’
Scenario 1: A warning to the students before they start writing.
Scenario 2: A warning to the students who are in the midst of writing.

- (32) **Ne-pisa-n-ij-e** kursovoj budet imet’ serjeznyje posledstvija.
not-write-N-NOUN-NOM term.paper-GEN will have serious consequences
‘Not writing a term paper will have serious consequences.’
Scenario 1: A warning to the students before they start writing.
*Scenario 2: A warning to the students who are in the midst of writing.

The prefixed nominal in (31) is ambiguous in exactly the same way as (29): negation can take scope either over both subevents, as on the scenario 1, or over the result subevent, as on the scenario 2. The non-prefixed counterpart of (31), as we see from (32), is again unambiguous.

The reader can easily check for herself that applying this test to other pairs of verbs and *nie*-nominals would yield exactly the same result. The significance of this evidence is difficult to overestimate. (29)-(32) show conclusively that the event structure of nouns and fully inflected clauses co-varies in the same way, and differences between clauses based on *pisa-* and *napisa-* are mirrored by corresponding nominals. If the story I am telling is true, and fully inflected clauses and *nie*-nominals partially undergo the same derivation, the strict parallelism observed in (29)-(32)

follows naturally. Event structure is created at early stages of syntactic derivation, and it is exactly these stages that nominals and clauses share. Differences (aspectual differences, in particular) emerge at later stages, when clausal functional structure, not present in *nie*-nominals, is projected.

The alternative analysis — no structure-sharing, verbs and deverbal nouns are independent lexical items — predicts the differences, but fails to explain the parallelism. The systematic pattern observed in (29)-(32) comes out as a mysterious coincidence.

To sum up, what I have shown in this section is that there are serious reasons to believe that fully inflected clauses and *nie*-nominals are derivationally related in a way represented in (24)-(25), repeated as (33)-(34):

(33) [CP ... [HP ... **PFV** ... [_α *napisa-*]]]]]

(34) [DP ... D [NP ... [N *ij*] [NominalP [Nominal *n*] [_α ... *napisa-* ...]]]]]

The α constituent they have in common is where the event structure is computed, and the aspect is not part of it. But what exactly α is? As was pointed out in section 3, the answer to this question provides a clue to determining the position of aspectual operators. To this issue I now turn.

5. Structure of *nie*-nominals

There is no general agreement about how much structure *nie*-nominals 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 the nominal syntactic head. Schoorlemmer (1995) also claims that Slavic languages differs as to how many (extended) verbal projections nominalizations 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 (2008) review previous proposals about Russian nominalizations and present novel arguments for an articulated structure within *nie*-nominals. Here follows a brief outline of their proposal.

Standard diagnostics for the internal make-up of nominalizations discussed extensively in, e.g., Alexiadou 2001 and much subsequent work, include temporal, aspectual, and agent-oriented adverbials as well as purpose adjuncts. Since 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 (35) thus suggest that *nie*-nominals are VP-embedding.

(35) 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.'

Furthermore, *nie*-nominals can be combined with agent-oriented adverbials and purpose adjuncts, as in (36) and (37), respectively:

(36) **nanes-en-ij-e** *umyshlenno* telesn-yx povrezhden-ij
 inflict-N/T-NOUN-NOM deliberately bodily-GEN.PL injury-GEN.PL

‘inflicting injuries deliberately’

- (37) **otkry-va-n-ij-e** okn-a, *čtoby* *vpusti-t’* *svež-ij* *vozdux*
open-IVA-N/T-NOUN-NOM winsow-GEN so.that let.in-INF fresh-ACC air.ACC
‘opening the window to let the fresh air in’

(36) and (37) indicate that *nie*-nominalls are associated with an implicit agent, which licenses adverbials like ‘deliberately’ in (36) and infinitival purpose clauses like ‘to let the fresh air in’ in (37). To the extent that agents, even if implicit, are introduced by *v*, (36)-(37) and similar examples provide evidence for *v*P inside *nie*-nominals.¹⁰

What we have seen so far is that *nie*-nominals minimally contain VP and that at least some of them (e.g., ‘rendering’ and ‘opening’ in (36)-(37)) also include *v*P. To determine the upper limit for the *nie*-nominalization – the maximal constituent it can embed – let us take into account evidence from verbal derivational morphology.

Recent literature on the structure of Slavic verb (Babko-Malaya 1999, Svenonius 2004, 2008, Ramchand 2004, Romanova 2004, 2006, Tatevosov 2008, Žaucer 2009, a.m.o.) suggests that verbal prefixes fall into at least two types, lexical and superlexical. Relevant for our current topic is the distribution of superlexicals. In appropriate configurations (see Tatevosov 2009) they merge outside the “secondary imperfective” *-iva-*, as in (38)¹¹:

- (38) a. [[zabi]-va]-t’ (gvozdi)
 hammer-IVA-INF nail.ACC.PL
 ‘hammer (the) nails’
 b. [na-[[zabi]-va]]-t’ (gvozdej)
 CUM-hammer-IVA-INF nail.GEN.PL
 ‘hammer a quantity of nails’

In (38a), the verb stem *zabi-* ‘drive in, hammer’ merges with *-iva-* to form the derived stem *zabiva-*, and in (38b), the latter combines with the cumulative prefix *na-*. The result is *na-zabi-va-*, the stem producing perfective fully inflected clauses with the (ac)cumulate meaning. (Bracketing in (38) and in examples below represents morphological relations between different verb stems rather than syntactic constituency.)

In (39), the ordering of *na*-prefixation and *iva*-suffixation is reverse. First, the stem *dari-* ‘give’ merges with the cumulative prefix, and then the output of this operation serves as an input to the affixation of *-iva-*:

¹⁰ Following Alexiadou 2001, one can assume that the *v* head that shows up in nominalizations is deficient in a sense that it cannot host an argument DP in its specifier and cannot assign the accusative case. Postulating such a head, restricted to nominal configurations, could potentially be problematic; Alexiadou argues, however, that this very type of *v* occurs in *finite clauses* in ergative languages. Finding an ultimate solution to these problems goes far beyond the scope of this paper, however. Multiple issues surrounding syntactic reality of implicit arguments have recently been discussed in Bhatt and Pancheva 2006 and Landau 2010, among others.

¹¹ “Secondary imperfective” is a traditional category label assigned to *-iva-*. By continuing using this label I do not commit myself to the view that *-iva-* is an exponent of the imperfective aspect. The other way round, I consider *iva*-stems semantically aspectless – as aspectless as their “perfective” counterparts like *napisa-* discussed throughout this paper. Tatevosov and Ivanov (2009), following key ideas of Bar-el et al. 2005, propose that *-iva-* should be analyzed as an exponent of inertia/continuation modality operator.

- (39) a. [**na-dari**]-t' (kuč-u podark-ov)
 CUM-give-INF heap-ACC gift-GEN.PL
 'give (a lot of gifts)'
 b. [[**na-dar**]-**iva**]-t' (kuč-u podark-ov)
 CUM-give-IVA-INF heap-ACC gift-GEN.PL
 'give (a lot of gifts; regularly)'

The same pattern obtains with the distributive prefix *pere-*, which merges outside *-iva-* in (40b), but inside *-iva-* in (41b):

- (40) a. [[otkry]-**va**]-t' (banki)
 open-IVA-INF can.ACC.PL
 'open (the cans)'
 b. [**pere**-[[otkry]-**va**]]-t' (vse banki)
 DISTR-open-IVA-INF all can.ACC.PL
 'open (all the cans one by one)'
- (41) a. [**pere-my**]-t' (vsju posud-u)
 DISTR-wash-INF all.ACC dishes-ACC
 'wash all the dishes one by one'
 b. [[**pere-my**]-**va**]-t' (vsju posud-u)
 DISTR-wash-IVA-INF all.ACC dishes-ACC
 'wash all the dishes one by one (regularly)'

The reason why the prefix merges after the *-iva-* suffix in (38) and (40), but the other way round in (39) and (41) is irrelevant for the plot of this story (see Tatevosov 2009 for details). What is relevant is the grammaticality contrast between corresponding *nie*-nominals in (42)-(45):

- (42) ***[na-zabi-va]**-n-ij-e
 (43) ^{OK}[[**na-dar**]-**iva**]-n-ij-e
 (44) ***[pere-otkry-va]**-n-ij-e
 (45) ^{OK}[[**pere-my**]-**va**]-n-ij-e

In grammatical *nie*-nominals in (43) and (45), the prefix attaches before the “secondary imperfective”. In ungrammatical (42) and (44) *-iva-* combines with the stem before the prefix. Crucially, there is nothing wrong with the stems *na-zabi-va-* in (42) and *pere-otkry-va* in (44) by themselves: they are perfectly appropriate in the verbal environment in (38b) and (40b). Therefore, (42) and (44) represent a genuine restriction associated with *nie*-nominals: any material that merges outside *-iva-* blocks their formation. In other words, evidence from (42)-(45) allows to establish a constraint on the size of a constituent *nie*-nominals can embed:

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