Severing imperfectivity from the verb[*]

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1. Aspectual morphology and aspectual interpretation

It has been a celebrated tradition to identify the contribution of verbal derivational morphology in Russian in terms of viewpoint aspect. As Karcevski (1927/2004) indicates, "being added to a simplex verb, a prefix changes its semantic value as well as its transitivity and *aspectual* value [emphasis added]" (Karcevski 2004: 125). Prefixes perfectivize, in other words. Conversely, "suffixes, except for *-nut'* and *anut'*… are imperfective… Secondary suffixes form secondary imperfectives" (Karcevski 2004: 125). According to this traditional view, the prefix *pro-* and the secondary imperfective suffix *-yva* in (1) are phonological exponents of semantic aspects, perfective and imperfective, respectively.

(1) čita-t'   **pro**-čita-t'   pro-čit-**yva**-t'
     read-INF   PRF-read -INF   PRF-read-YVA-INF

The traditional view has been challenged many times. Filip (2000) argues that prefixes are not exponents of perfectivity since their distribution differs from what can be expected from a true inflectional morpheme: "If verbal aspect in Slavic languages is a grammatical category, as is standardly assumed, and if this also implies that aspect is an inflectional category, then prefixes cannot be aspectual (perfective) morphemes, because such markers ought to have inflectional characteristics" (Filip 2000:78). Filip's argument is mostly based on the two facts about prefixation: prefixes can stack/co-occur, as in (2), and prefixed stems can undergo secondary imperfectivization, as in (3); examples are mine:

(2) **do-pro**-čita-t'
     PRF-PRF-read-INF
     'finish reading$_{PFV}$'

(3) **pro**-čit-**yva**-t'
     PRF-read-YVA-INF
     'read$_{IPFV}$'

Two exponents of an inflectional category do not occur within the same form of a word, but this is exactly what happens in (2). Moreover, if *pro-* and *do-* in (2) both express perfectivity (possibly, in addition to something else), we end up with the perfective semantics entering twice the same derivation. In (3), the same stem contains exponents of both members of the aspectual opposition which may be taken to imply that the secondary imperfective somehow cancels out semantic perfectivity introduced by the prefix. Needless to say, this is not what we expect from inflectional categories, whose exponents normally occur once per clause and are in complementary distribution with other members of the same category.

From the conceptual point of view, therefore, I agree completely with Filip that the traditionally assumed relationship between "aspectual morphology" and aspectual semantics does not look like a favorable analytical option. However, technically, one can

easily construct a theory for which (2) and (3) are not heavily problematic. For example, if the perfective is an identity function on event predicates that takes a predicate and maps it to itself ($\lambda P_{<v,t>}.P$; cf. the discussion in Zucchi (1999)), there is nothing wrong neither in applying it twice, as in (2), nor in taking the output predicate as an input for the secondary imperfective, as in (3). (See also Piñon (2001) for an example of an analysis where the two aspectual operators are not mutually exclusive.) Filip's argumentation, however, does not show why this scenario should be impossible.

I believe that Tatevosov (2011) makes a stronger and a more radical case for separating perfectivity from prefixation. My argument is based on the predictions derivable from what I call aspect-low and aspect-high theories, represented in (4a-b). (For space considerations, in what follows I will only summarize the outline of the argument.)

(4) **Aspect-low theory**
     a. $[_{CP} \ldots [_{F_{i+1}P} \ldots [_{F_iP} \ldots [_{F_{i-1}P} \ldots [_{VP} \ldots [_V \textbf{PFV} \textit{pročita-}]]]]]$
     b. $[_{CP} \ldots [_{F_{i+1}P} \ldots [_{F_iP} \ldots [_{F_{i-1}P} \ldots [_{XP} \ldots \textbf{PFV} \textit{pro-} \ldots [_V \textit{čita-}]]]]]$

(5) **Aspect-high theory**
     a. $[_{CP} \ldots [_{F_{i+1}P} \ldots [_{F_iP} \ldots \textbf{PFV} [_{F_{i-1}P} \ldots [_{VP} \ldots [_V \textit{pročita-}]]]]]$
     b. $[_{CP} \ldots [_{F_{i+1}P} \ldots [_{F_iP} \ldots \textbf{PFV} [_{F_{i-1}P} \ldots [_{XP} \ldots \textit{pro-} \ldots [_V \textit{čita-}]]]]]$

In (4)-(5), both theories appear in two variants. The (a) variants assume that prefixation of *pro-* occurs at the V^0 level, presumably, in the lexicon[1]. The (b) variants suggest that prefixation is part of syntactic derivation, whereby the prefix merges within the projection of a head more or less local to V (possibly, V itself). In (4)-(5), it is designated as X. In Ramchand (2004), Svenonius (2004, 2008), Romanova (2006), Žaucer (2009) and many others, *pro-* is VP-internal (hence X = V). For Ramchand, Svenonius, and Žaucer, the prefix is either a head or a specifier of the projection called R(esult)P, a complement of V. Romanova argues for an articulated path structure below V. For others, including Slabakova (1995) and Verkuyl (1999), the prefix heads a projection that takes VP as a complement.

What separates (4a-b) from (5a-b) is the structural distance between "aspectual morphology" and aspectual interpretation. All proposals along the lines of (4) share the defining characteristic of aspect-low theories: as soon as a prefixed verb stem is built, either in the lexicon or in the syntax, the semantic perfectivity, PFV in (4)-(5), is there. For example, Filip's theory, as I understand it, is a variant of (4a). For Filip, even though prefixes like *pro-* are not exponents of perfectivity, a lexically formed verb stem like *pročita-* must be semantically perfective. The same assumption is made by the proponents of the syntactic theories of prefixation in (4b). In assuming this, all these theories share the basic tenet of the traditional Slavic aspectology, going back to the late XIXth and early XXth centuries where Karcevski (1927), cited above, is one of the main authorities. On this view, in Slavic languages *(im)perfectivity is a property of a verb*. This makes them radically different from Germanic, Romance, Turkic, most Uralic and thousands of other languages where it does not make sense to ask whether, say, the verb *read* is perfective. In these languages verbs as such are aspectless, and semantic aspects only enter the derivation when relevant functional structure of a clause is projected.

An aspect-high theory, represented in (5), takes a neutral stand as to how the verb is built (though in what follows I will be assuming a syntactic view in (5b) rather than the lexicalist view in (5a).) But it crucially relies on the assumption that Slavic and similar languages are no different from others. Semantic aspects appear as part of the functional structure of a clause, whereas verbs as such are aspectless. 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), etc.). However, they assume this type of theory rather than argue for it.

Neither (5a) nor (5b) imply, though, that prefixes are not interpreted in the position where they are merged. But both do imply that they are not interpreted *as exponents of perfectivity*. (One possible way of thinking about prefixes is to suggest that with respect to semantic perfectivity they function as pieces of concord morphology. The pattern is thus comparable to the one observed in the languages with negative or modal concord (Zeijlstra (2008, 2009), cf. Arsenjević's (2012) proposal along similar lines).)

Tatevosov's (2011) argument for an aspect-high theory is based on a non-trivial prediction of (5a-b). (5a-b) predict that there is a stage of syntactic derivation, call it α, where the stem *pročita-* is already present, but perfectivity is not. This is shown in (6). (4a-b) predict that there is no such a stage.

(6)   **The "perfective stem" is part of α, but perfectivity is not**

$$[\ldots [\ldots [\ldots \textbf{PFV} [\ldots [_{\alpha} \ldots \textit{napisa-} \ldots] \qquad]\,]\,]$$

Assume that there exists a configuration that shares α with a fully inflected clause, but lacks some of the clausal functional projections. If *pročita-* and similar expressions do not behave like a perfective stem in such *a structurally deficient configuration*, this can only happen because PFV is not part of α, which means that an aspect-low theory cannot be correct.

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)'. These nominals arguably project as much as *v*P, but lack higher functional structure merged on top of *v*P. In this way they give us an opportunity to see properties of *v*Ps / VPs / verbs at early stages of syntactic derivation, when (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[2].

Having examined various perfectivity effects, Tatevosov (2011) concludes that ASNs do not exhibit any of them whatsoever, which means that semantic aspect is not part of the structure they share with fully inflected clauses. Aspectual operators come into play at later stages of derivation, when the functional structure is projected that nominals *do not share* with clauses. Since ASNs contain at least a *v*P, PFV must be located outside *v*P, in accordance with the predictions of an aspect-high theory.

Prefixes like *pro-* in *pročitat'* are lexical. Tatevosov (2013a) extends the same reasoning to superlexical prefixes. The class of superlexicals in Russian minimally includes those listed in (7):

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[2] Essentially, this is the strategy suggested by Kratzer (2003) for solving the problem of indirect access discussed by Zucchi (1999). 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 us a way of seeing verbs and VPs less indirectly: since Abney (1987), Alexiadou (2001) and much subsequent work, we have known that such nominals minimally contain VP but crucially lack some or all of functional projections.

(7) *Za-*   inceptive   ***za-**pet'* 'start singing'
    Po-   delimitative   ***po-**guljat* 'walk for a while'
    Na-   cumulative   ***na-**brat'* 'take a lot'
    Pere-   distributive   ***pere-**lovit'* 'catch one by one'
    Pro-   perdurative   ***pro-**sidet'* 'sit for a long time'
    Do-   completive   ***do-**pisat'* 'complete writing'
    Po-   distributive   ***po-**brosat'* 'throw one by one'
    Pri-   attenuative   ***pri-**otkryt'* 'open slightly'
    Pod-   attenuative   ***pod-**zabyt'* 'forget slightly'

In the literature on Slavic prefixation a vivid debate is going on about the position of superlexicals. Žaucer (2009, 2010 and elsewhere) consistently argues that superlexicals merge within the same resultative projection as lexical prefixes. However, the mainstream view of superlexical prefixation advanced in Babko-Malaya (1999), Ramchand (2004), Romanova (2004, 2007), Svenonius (2004, 2009), Tatevosov (2008, 2009, 2013a,b) and others is that this type of prefixes is hierarchically higher, as schematized in (8):

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

In Tatevosov (2013a), I establish the following generalization: for superlexicals, ASNs differ from fully inflected clauses in exactly the same way as for lexical prefixes. This means that the same line of argumentation as above applies to superlexicals, too, which leads to the conclusion that superlexicals cannot be as high as PFV, as in (9). Rather, PFV must merge outside superlexicals, (10).

(9)   **PFV is as high as SLPs**
      [... [... **PFV** SLP ... [... [... LP ...]]]]

(10)   **PFV is higher than SLPs**
      [... [... **PFV** ... [... SLP ... [... LP ...]]]]

(9) and (10), taken together, lead us to the final generalization: the position of the perfective semantic aspect is outside the position of any prefixes. Having said this, we face, however, a further question: what about the secondary imperfective?

2. Secondary imperfectives

2.1 Setting the problem

In the literature where a special focus is put on the inflectional vs. derivational status of Slavic verbal morphology, most authors agree that the secondary imperfective morpheme more looks like a piece of inflectional morphology than "perfectivizing" prefixes do. Hana Filip, who, as we have already seen, rejects both the inflectional status and perfectivity of prefixes, takes a different stand with respect to the secondary imperfective. The secondary imperfective, she indicates, is unlike prefixes in that semantic aspect is its only contribution: "While the simple imperfective verb *pisat'* and the perfective prefixed verb *vy-pisat'* differ from each other in aspect and lexical semantics, the only difference between *vy-pisat'* and *vy-pisyvat'* is in aspect" (Filip 2000:73). In a 2005 paper, the same generalization appears in a strengthened form: "Imperfective suffix *–va-* … is the only morpheme that has a constant and only aspectual meaning in all of its occurrences". (Filip 2005: 145).

If Filip and other scholars who share this position with her are right, the aspectual system of Russian starts looking as shown in (11a-b).

(11) a. [$_{FP}$ … PFV …   [$_{vP}$ … [… **pro**-čita …]]]
      b. [$_{FP}$ … IPFV **yva** …   [$_{vP}$ … [… **pro**-čita … […]]]
where IPFV is the imperfective operator (or a family of operators if one assumes with, e.g., Paslawska, von Stechow (2003) or Grønn (this volume) that Slavic Imperfective is ambiguous).

In (11b), the location of *yva* is within the functional domain of a clause, presumably, in the same position where aspectual morphology appears in languages with inflectional aspect. Besides, it can naturally be identified with the position of PFV in (11a). The key characteristic of (11b) is that *yva* occurs in the same position where it is interpreted, and in this respect (11b) is on the same line as the aspect low theory of perfectivity in (4).

However attractive (11a-b) may look, no empirical facts mentioned in Filip's reasoning would exclude an alternative to (11b) represented in (12):

(12) [$_{FP}$ … IPFV … [... **yva** … [… **pro**-čita … […]]]

In (12), semantic imperfectivity, IPFV, occurs at the same location as in (11b). But *yva* merges lower (even though still outside the prefix). (As before, the fact that *yva* is hierarchically separated from IPFV, does not entail that it is not interpreted in the position where it merges[3]. This only means that it is not interpreted as IPFV.) What we need, therefore, is to find a way of telling (11b) and (12) apart.

2.2 Prefixation and secondary imperfectivization

One fact problematic for (11b) but not for (12) has to do with a well-known property of Russian verbal system. After "secondary imperfectivization" happens, a verb stem can still combine with a certain class of prefixes, creating a new derived perfective stem. This fact has been known for decades: it has been discussed in Karcevski (1927) already (see Karcevski (2004:122 *et seq.*), a lengthy discussion can also be found in Isačenko (1960)). In the present context it acquires a new weight, however. Consider examples in (13):

(13) Ja <poka ždal   mašinu iz   servisa, peresidel vo vsex mašinax v   zale,>
      I   while waited car   from service sat   in all cars   in hall
      ***pere*-otkry-va-l**   vsë, čto   xotel   [forums.drom.ru]
      PERE$_{DISTR}$-open-YVA-PST.M   all   that   want-PST.M
      'I <…> opened all I wanted, one thing after another'

(14) <Xrustnuli rebra, vydavilsja poslednij vozdux iz legkix,> i   mal'čiška
      crackled   ribs   extruded   last   air   from lungs   and boy
      ***za*-otkry-va-l**   rot   kak   ryba   [http://213.21.201.4/i]
      ZA$_{INCH}$-open-YVA-PST.M   mouth like   fish
      '<…,> and the boy started opening his mouth like a fish'.

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[3] On that view, alleged inflectional properties of *yva* mentioned by Filip are not to be taken very seriously. The fact that *yva* more regularly combines with verb stems than prefixes do does not, if effect, tell us much. Nor does the fact that *yva* does not affect lexical meaning and event structure of the verb. If the meaning of *yva* is not too specific to be incompatible with certain lexical classes of verbs, regularity in application and no visible impact on the lexical meaning are expected. *Yva* would exhibit inflectional-like behavior without being an inflectional morpheme, as (12) suggests.

(15) <Ne znaju, kto kak,> no ja ***na*-otkry-va-l** štuk dvadtsat'
not know who how but I NA_{CUM}-open-YVA-PST.M piece-GEN.PL twenty

potentsial'no interesn-yx post-ov vo vkladk-ax brauzer-a.
potentially interesting-GEN.PL post-GEN.PL in tab-LOC.PL browser-GEN

'<…>, but I opened about 20 potentially interesting posts in my browser.'

(16) <Liš' pod paru pesen> mne uda-l-o-s' nemnogo
only under couple songs I.DAT manage-PST-N-REFL a.bit

***po*-otkry-va-t'** rot, <podpevaja>. [zhazh.ru]
PO_{DELIM}-open-YVA-PST.M mouth.ACC singing

'<…> I only had a chance to open my mouth for a while'

(17) Durak vlez v dom, ***po*-otkry-va-l** vse okna,
idiot broke.in in house, PO_{DISTR}-open-YVA-PST.M all window-ACC.PL

po-rastvor-ja-l dveri, xodit po dom-u. [feb-web.ru]
PO_{DISTR}-open-YVA-PST.M door-ACC.PL walk-PRS.3SG over house-DAT

'The idiot broke into the house, opened all the windows one by one, opened all the doors, and is walking inside.'

The morphological structure of the verbs in (13)-(17) is shown in (18)-(22):

(18) **pere**-[[ot-kry]^P-va]^{**I**}-t'
'open one by one'
(19) **za**-[[ot-kry]^P -va]^{**I**}-t'
'start opening
(20) **na**-[[ot-kry]^P -va]^{**I**}-t'
'open a quantity of sth.'
(21) **po**-[[ot-kry]^P -va]^{**I**}-t'
'spend some time trying to open sth.'
(22) **po**-[[ot-kry]^P -va]^{**I**}-t'
'open one by one'

All of these verbs involve the same steps of derivation. We begin with a (prefixed) perfective stem *otkry-*, perform "secondary imperfectivization", which derives *otkry-va-*, and merge a prefix on top of it. Prefixes that can merge outside the "secondary imperfective" include what Tatevosov (2009, 2013a, b) calls *selectionally restricted superlexicals*, or SR-prefixes, listed in (23), and the distributive *po-*.

(23) **Selectionally restricted superlexicals**
cumulative *na-*, distributive *pere-*, delimitative *po-*, perdurative *pro-*, inceptive *za-*

The data in (13)-(22) are uncomfortable for (11b) in many ways. I will mention a few of them.

First, if Filip is right, and all prefixes are derivational morphemes, but the secondary imperfective is inflectional, we find ourselves in an awkward situation where a piece of derivational morphology attaches to an inflected verb form.

Secondly, with the analysis in (11b) we are forced to assume a higher layer of aspectual structure to handle prefixed perfective verbs in (13)-(22):

(24) [_{F'P}... PFV … **na-/za-/**… [_{FP}… IPFV **yva** … [_{vP} … [… **ot**-kry … […]]]

(24) immediately breaks the parallelism between PFV and IPFV achieved in (11a-b), since at least in case of verbs in (13)-(22) PFV can no longer be at the same hierarchical level as IPFV: IPFV is, by assumption, where *yva* is, but SR-superlexicals are higher.

Thirdly, (11b) makes it evident that PFV must be able to combine with the output of imperfectivization via IPFV. Filip's desideratum — "one aspectual operator per clause" — can no longer be maintained.

As a result, fourthly, additional semantic assumptions about the interaction between PFV and IPFV in (24) are to be made.

None of these complications emerges under (12), where *yva* has the same status as the prefixes. As a piece of derivational morphology, it is free to occur at any stage of derivation as long as the derivation converges at the interfaces. Since it is not interpreted as IPFV where it is merged, just as prefixes are not interpreted as PFV, the system will be consistent with the view that there is exactly one semantic aspect per clause. Nothing would complicate the reasonable assumption that semantic aspects are located within the same functional projection and, as such, are in complementary distribution. (25)-(27) schematize the structure of different verbs discussed so far:

(25)   [… PFV …   [… **pro-**čita … [...]]] (=11a)

(26)   [… IPFV ... [... **yva** … [… **pro**-čita … […]]]] (=12)

(27)   [… PFV ... [… **za-/na-/…** [... **yva** … [… **ot**-kry … […]]]]] (cf. (18)-(22))

If this reasoning is correct, we can conclude that separating *yva* and IPFV opens a way of building up a theory that faces less complications than its alternative in (11b). However, I have not yet shown any positive evidence suggesting that (12) can be the right way to go. The next section is devoted to establishing an argument that (12) looks like a correct analysis of the secondary imperfective independently of considerations laid out above.

3. Separating *yva* and IPFV

The main result of the previous section is that there are reasons to believe that a theory in (28), based on (11b), runs into difficulties.

(28)   [$_{FP}$ … IPFV **yva** …   [$_{vP}$ …]]

In what follows, I want to develop a positive argument for the alternative analysis in (12), represented as (29):

(29)   [… IPFV …   [$_{XP}$ … [… **yva** ...]]]

Furthermore, I believe that the evidence I present supports an even stronger generalization, namely, (30), which says that *yva* merges inside *v*P, while IPFV is outside.

(30)   [… IPFV …   [$_{vP}$ … [… yva ...]]]

(30) has an obvious advantage: if it is correct, the overall picture starts looking clear and consistent. Together with (31), based on (5) and (11a), it suggests that, first, all Russian verbal derivational morphology is inside *v*P, and secondly, that semantic aspects are outside.

(31)   [… PFV …   [$_{vP}$ … [… Prefix ...]]]

The structure of the argument is as follows. To establish (30), we need to show that *yva* is inside *v*P, but IPFV is outside. In achieving this, I will take two steps. The first part of the argument is to demonstrate that *yva* is internal to *v*P, as in (32):

(32)   [*v*P ... *v* ... [... *yva* ...]]

The argument for (32) is based on the observation from the previous section that under relevant circumstances *yva* occurs below SR-superlexicals from (23):

(33)   [... SR-superlexicals ... [... *yva* ...]]

One of those prefixes is the distributive *pere_DISTR*. I show that *pere_DISTR* is below *v*P:

(34)   [*v*P ... *v* ... [... *pere_DISTR* ...]]

From (33) and (34), (32) follows.
The second part, which is presented in section 3.2, will establish that IPFV is outside *v*P:

(35)   [... IPFV ... [*v*P ... *v* ...]]

To get this, I will assume, to the contrary, that IPFV is internal to *v*P and show that this assumption yields wrong predictions as to the interpretation of certain classes of imperfective predicates. This problem does not arise with (35). (32) and (35), taken together, amount to (30).

3.1 *Yva* is inside *v*P

One of the facts discussed in section 2 is: under relevant circumstances *yva* merges below SR-superlexicals; see (18)-(22), all based on *otkry-* 'open'.

(36)   [... SR-prefixes ... [... yva ... [... otkry- ...]]]

Of the five SR-prefixes in (23), the distributive *pere_DISTR* exemplified in (13) is of special interest. Let us say that *pere_DISTR* is associated with the distributive operator $DISTR_{pere}$. $DISTR_{pere}$ takes scope over DPs, and we can make use of this fact to detect its position. We do not need to make any specific assumptions about its semantics, see Lasersohn (1995), Landman (2000), Champollion (2010) among many others for relevant proposals. The substantial fact significant for the argument is: $DISTR_{pere}$ exhibits fairly visible subject-object asymmetry, recognized in the literature on Russian "distributive Aktionsart" (see, e.g., Isačenko 1960: 287-288).

(37)   Razbojnik   **pere-otkry-va-l**   (vse)   dveri.
        thief $PERE_{DISTR}$-open-YVA-PST-PL   all   doors
        'The thief opened (all) the doors one by one.'

(38)   [??]Razbojniki   **pere-otkry-va-l-i**   Sezam.
        thieves $PERE_{DISTR}$-OPEN-YVA-PST-PL   Sesame
        'The thieves opened Sesame one by one.'

Examples in (37)-(38) show that the object but not the subject falls within the scope of DISTR$_{pere}$. On the standard assumption that the external argument DP originates in Spec, vP, it follows that DISTR$_{pere}$ is below vP:

(39)   [… [$_{v\mathrm{P}}$ DP$_{\mathrm{Ext.Arg.}}$ v … [DISTR$_{pere}$ …   ]]]

Therefore, we have established that $pere_{DISTR} > yva$, (36), and $v >$ DISTR, (39). If $pere_{DISTR}$ is interpreted as DISTR$_{pere}$ in its surface position, (40) follows, which means that (32) has been shown to be correct.

(40)   [… [$_{v\mathrm{P}}$ DP$_{\mathrm{Ext.Arg.}}$ v … [$pere_{DISTR}$ DISTR$_{pere}$ … [... yva …]]]]

This conclusion may turn out to be premature, however. Under our current assumptions, a piece of morphology M and its interpretation ‖ M ‖ need not occur in the same position. As a special case, this can happen to $pere_{DISTR}$ and DISTR$_{pere}$. Let us therefore take a closer look at possible hierarchical relationships of DISTR and $pere_{DISTR}$ and try to figure out if some of them can undermine the generalization in (40). Three logical possibilities are shown in (41)-(43):

(41)   [… DISTR$_{pere}$ … [… $pere_{DISTR}$ …] …]

(42)   [… [… DISTR$_{pere}$ $pere_{DISTR}$ …] …]

(43)   [… $pere_{DISTR}$ … [… DISTR$_{pere}$ …]]

If (41) or (42) is the case, we have (44a) and (44b) as orderings of v, DISTR, $pere_{DISTR}$ and yva, respectively. (44a) follows from the assumption in (41) combined with two facts in (36), $pere_{DISTR} > yva$, and (39), $v >$ DISTR. (44b) derives from (42), (36) and (39). Obviously, in both cases, $v > yva$, hence both support (32).

(44)   a. $v >$ DISTR$_{pere}$ $>$ pere$_{DISTR}$ $>$ yva

        b. $v >$ DISTR$_{pere}$ pere$_{DISTR}$ $>$ yva

The third possibility in (43), where $pere_{DISTR}$ is higher than DISTR$_{pere}$, is more problematic. If $pere_{DISTR} >$ DISTR$_{pere}$, we cannot guarantee that $v > yva$, since it is possible that (45) holds:

(45)   [... [… pere$_{DISTR}$ … [… yva ... [$_{v\mathrm{P}}$ Ext.arg. v… [… DISTR$_{pere}$… […]]]]]]

(45) satisfies both generalizations we have established so far: $pere_{DISTR} > yva$ in (36) and $v >$ DISTR$_{pere}$. Yet, in (45) $yva > v$. Therefore, to make sure that $v > yva$ holds, as in (32), we have to exclude (43) which leads to (45).

One reason to doubt that (43) is the right representation for the distributive configuration is: if it was empirically real, it would be a rather unusual configuration. With respect to DISTR$_{pere}$, $pere_{DISTR}$ would function as a piece of agreement/concord morphology. Concord structures, as commonly understood in the literature (see, e.g., Zeijlstra 2012), involve an interpretable feature associated with a semantic operator (e.g., a negation operator or a modal operator) and its uninterpretable counterpart surfacing on one or more semantically dependent morphological element. (46) illustrates a possible negative concord configuration from Zeijlstra (2012):

(46)   [Dnes $Op_{\neg [iNEG]}$ [$_{TP}$ $nikdo_{[uNEG]}$ nevolá$_{[uNEG]}$ $nikoho_{[uNEG]}$]]
        today   nobody   not.call   nobody
        'Today nobody is calling anybody'

(46) instantiates a significant characteristic of known concord structures: the interpretable occurrence of the feature, [iNEG], c-commands uninterpretable occurrences. In (43), however, the relationship between DISTR$_{pere}$ and $pere_{DISTR}$ is exactly the opposite: the interpretable DISTR$_{pere}$ is c-commanded by the uninterpretable $pere_{DISTR}$. (43) thus involves a unique type of concord structure unattested elsewhere, which is costly from the theoretical point of view. But I believe it is possible to find a stronger argument against (43), one strictly based on empirical evidence.

To construct this argument, we can employ the same line of reasoning as in the case of perfectivizing prefixes. (6), repeated as (47), predicts that there is a stage of derivation that includes the prefix but excludes PFV.

(47)   The "perfective stem" is part of α, but perfectivity is not

        [… [… [… PFV [… [$_α$ … ***na*-*pisa*-**]]]]

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

(48)   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, (45) predicts that there is a stage of derivation where DISTR$_{pere}$ is present, but $pere_{DISTR}$ is not:

(49)   DISTR$_{pere}$ is part of α, but $pere_{DISTR}$ is not

        [… [… […$pere_{DISTR}$ …[… [$_α$ … **DISTR**$_{pere}$ …]]]]]

We can try to find a configuration like (49) where DISTR$_{pere}$ occurs without being spelled out by $pere_{DISTR}$. A natural candidate for serving this configuration would again be argument supporting nominalizations, as in (50):

(50)   a. otkry-t-i-e   dver-ej   b. otkry-va-n-i-e   dver-ej
           open-NNM-N-NOM   door-GEN.PL   open-YVA-NMN-N-NOM   door-GEN.PL[4]
           'opening of the doors'

The ASN in (50a) lacks both the $pere_{DISTR}$ and *yva*; in (50b) *yva* is present, but $pere_{DISTR}$ is not. Both include an external argument, however, as evidenced by examples like (51). Both thus contain *v*P, (52). (Since the position of *yva* with respect to *v* is yet to be determined, in (52) both attachment options are shown.)

(51)   otkry-t-i-e   /   otkry-va-n-i-e   dver-ej   bez   kluč-a
        open-NNM-N-NOM   open-YVA-NMN-N-NOM   door-GEN.PL without   key-GEN
        lučš-imi   master-ami   v   Moskv-e.
        best-INSTR   expert-INSTR   in   Moscow-LOC
        'opening of doors without a key by the best experts in Moscow'

---

[4] In (49)-(50), NMN is the piece of morphology that ASNs share with perfective passive participles, which is realized, subject to certain phonological conditions, as either *n* or *t*. The *i(j)* morpheme, glossed as "N", attaches outside *n/t* to build an ASN.

(52)   The structure of ASNs in (50a-b)
       $[...[_N$ nij/tij ... [... (yva) … $[_{vP}$ … v … [... (yva) … [otrky- dverej]]]]]]

Therefore, the ASNs in (50a-b) seemingly provide us with the right type of configuration to find out if (45) can be the case. They lack the projection of $pere_{DISTR}$, but DISTR$_{pere}$, according to (39), appears below v, hence, if it is part of the derivation, it should be detectable in (50a-b).

However, this apparently straightforward way does not lead us anywhere. The problem is that *otkry-* and *otkry-va* are capable of generating distributive readings by themselves, without the contribution from the distributive $pere_{DISTR}$. This is evidenced by the finite clauses in (53)-(54), where the distributive interpretation obtains in the absence of $pere_{DISTR}$.

(53)   Volodja   otrky-l   (vse)   dveri   odny   za   drugoj.
       V.   open-PST.M   all   door-NOM.PL   one.ACC   after   other.INSTR
       'Volodja opened (all) the doors one after another.'

(54)   Volodja   otrky-va-l   (vse)   dveri   odny   za   drugoj.
       V.   open-YVA-PST.M   all   door-NOM.PL one.ACC   after   other.INSTR
       'Volodja was opening (all) the doors one after another.'

Clauses in (53)-(54) are fully projected. Therefore, unlike for ANSs, where, by hypothesis in (49), the functional projection that hosts $pere_{DISTR}$ is missing, in (53)-(54) $pere_{DISTR}$ must be overt if DISTR$_{pere}$ is part of the derivation. In these sentences, $pere_{DISTR}$ does not occur, hence DISTR$_{pere}$ cannot be part of their structure. Yet, they do license the distributive interpretation. Some other mechanism of generating distributivity must therefore be at work there. Unfortunately for us, this means that if we see a distributive reading with one of the ASNs in (50a-b), we do not know whether its source is DISTR$_{pere}$ associated with the $pere_{DISTR}$ along the lines of (49) or the mechanism responsible for distributivity in (53)-(54). Since distributive readings do not unequivocally signal DISTR$_{pere}$, its presence in a nominalization is impossible to detect.

But there is a way around this problem. Let us take a look at other SR-superlexicals. Examples where they merge above *yva* are repeated in (55)-(58).

(55)   **za**-[[ot-kry]^P -va]^I-t'
       'start opening
(56)   **po**-[[ot-kry]^P -va]^I-t'
       'spend some time trying to open sth.'
(57)   **pere**-[[ot-kry]^P-va]^I-t'
       'open one by one'
(58)   **na**-[[ot-kry]^P -va]^I-t'
       'open a quantity of sth.'

The inchoative *za-* in (55) as well as other SR-superlexicals arguably merge at the same position as the distributive *pere-* and exhibit the same morphosyntactic constraints (Tatevosov 2013b). It is natural to assume that the syntactic behavior of the whole class is similar enough for there being a parallelism as to the relationship between morphology and semantics. If (43), repeated as (59a), whereby a semantic operator is c-commanded by an associated piece of morphology, is the right analysis of the distributive $pere_{DISTR}$, we expect that the same analysis applies to other SR-superlexicals like the inchoative za_{INCH} and cumulative na_{CUM} in (59b-c):

(59)   a. [pere$_{DISTR}$ … [… DISTR$_{pere}$ …]]
        b. [za$_{INCH}$ … [… INCH$_{za}$ …]]
        c. [na$_{CUM}$ [… CUM$_{na}$ …]]
        …

Therefore, if the whole class of SR-superlexicals has identical distribution, it would suffice to falsify one of (59a-c) to establish that the exponents of SR-superlexicals *pere$_{DISTR}$*, *za$_{INCH}$*, *na$_{CUM}$*, and others are not higher than the corresponding semantic operators DISTR$_{pere}$, INCH$_{za}$, CUM$_{na}$, etc. Recall that we need this to rule out (45). If *pere$_{DISTR}$* is not higher than DISTR$_{pere}$, *yva*, according to (36) and (39), must be below *v*, see (44a-b).

With the inchoative *za$_{INCH}$*, this is done easily. Parallel to (45) is (60):

(60)   [... [… *za$_{INCH}$* … [… *yva* ... [$_{vP}$ … Ext.arg. *v* … [… INCH$_{za}$ … […]]]]]]

To discredit (60), let us first make sure that INCH$_{za}$, associated with *za$_{INCH}$*, is the only source of the inchoative interpretation in fully inflected clauses:

(61)   Volodja   otkry-l   /   otrky-va-l   glaza.
        V.   open-PST.M   open-YVA-PST.M eye-ACC.PL
    1. 'Volodja opened /was opening his eyes.'
    2. *'Volodja started / was starting opening his eyes.'

As (61) indicates, in the absence of *za$_{INCH}$*- a verb fails to generate the inchoative reading in a fully inflected clause (cf. corresponding distributive sentences in (53a-b). This shows that the inchoative interpretation is only obtained through INCH$_{za}$, associated with *za$_{INCH}$*.

Now we go back to ASNs in (50a-b) that lack an SR-prefix, and check if they can contain INCH$_{za}$. (60) predicts that this can be the case. Indeed, ASNs, which have the structure in (52), minimally contain *v*P, and INCH$_{za}$ is inside *v*P. Therefore, if (60) is correct, ASNs are expected to license the inchoative reading in the absence of *za$_{INCH}$*. The prediction is not borne out, as (62a-b) indicate:

(62)   a. otkry-t-i-e   dver-ej   b. otkry-va-n-i-e   dver-ej
           open-NMN-N-NOM door-GEN.PL   open-YVA-NMN-N-NOM   door-GEN.PL
        *'starting opening of the doors'

As is evidenced by (62), INCH$_{za}$ cannot be part of ASNs *otkry-tie*/*otkry-vanie*. This eliminates (60) from the list of viable analyses of the inchoative configuration. The assumption in (59b) that *za$_{INCH}$* is higher than INCH cannot be maintained. By similarity of the distribution of SR-superlexicals in (59), I conclude that the M > … > ‖ M ‖ schema, which gives rise to (60), is generally wrong. As a special case, this means that (43) can be effectively rejected leaving us with (41) or (42).

Summarizing all the generalizations from the above, we arrive at (63):

(63)   a. pere$_{DISTR}$ > yva (see (36))
        b. pere$_{DISTR}$ > DISTR$_{pere}$ or pere$_{DISTR}$ DISTR$_{pere}$ (see (41)-(42))
        c. *v* > DISTR$_{pere}$ (see (39))

From (63a-c), it follows that *v* > *yva*, as required. We can proceed to the second part of the argument.

3.2 IPFV is outside *v*P

The second part of the argument aims at establishing (64), which says that the imperfective semantic aspect enters the derivation outside *v*P.

(64)   [… IPFV … [… *v* …]]

The strategy of showing that (64) is right would be to assume, to the contrary, that IPFV is *v*P-internal, as in (65), and to show that (65) yields unwelcome semantic predictions and is to be rejected.

(65)   [… *v* … [… IPFV …]]

The overall line of reasoning is as follows. I build on the extensive literature on predicate decomposition in assuming that *v* introduces an activity/process subevent. By the assumption in (65), IPFV is below *v*, so the activity subevent is outside of the scope of IPFV. This structure is interpretable, but the interpretation comes out wrong. Therefore, (65) cannot be maintained. This leaves us with (64) as the only alternative. Having made sure that with (64) no semantic complications come about, I conclude that (64) is the right view of things.

3.2.1 Eventless and eventive semantics of v

The contribution of IPFV is the imperfective aspectual operator (or, for some authors, a family of operators) that establishes a relation between event time and topic time or modifies an event predicate in the original extension of the verb phrase. Type-theoretically, it can be thought of in various ways, depending on the assumed architecture of the aspectual and temporal domains of a clause. Common proposals include types <<v,t>,<v,t>>, <<v,t>,<i,t>> or <<i,t>,<i,t>>, where *v* and *t* are types of events and intervals, respectively.

The contribution of *v* has been much debated over the past few years. There seems to be an almost general agreement that *v* introduces an external argument, (66a), which merges in the spec, *v*P position. On this view, the denotation of *v*P is built up along the lines of (66b) (ignoring the fact that DPs can move out of their first merge positions and assuming for simplicity that the external argument stands in the agent thematic relation to an event):

(66)   a. $\| v \| = \lambda P.\lambda x.\lambda e. [\text{agent}(x)(e) \wedge P(e)]$
        b. $\| [_{vP} \text{ DP } v [_{VP} \dots]] \| = \lambda e. [\text{agent}(\|DP\|)(e) \wedge \| VP \|(e)]$

If this is the whole story about the denotation of *v*, we do not expect to find major semantic differences between (64) and (65), where IPFV merges above or below *v*, respectively. Let us see why.

For concreteness, let us take IPFV to be a variant of Landman's (1992) operator, which maps events to their proper non-final stages, of type <<v,t>, <v,t>>, (67)[5]. (Other possible options will require technical adjustments without affecting the overall line of reasoning.) The orderings in (64) and (65) lead to event predicates in (68a) and (68b), respectively.

(67)   a. $\|\text{IPFV}(P)(e)\|^{w,g} = 1$ iff $\exists f \exists v : <f, v> \in \text{CON}(g(e), w)$ and $\|P\|^{v,g}(f)=1$
            where CON(g(e), w) is the continuation branch of g(e) in *w*.

---

[5] This operator will thus capture progressive readings of the Russian imperfective. I will ignore habitual and general factual readings, irrelevant for the argument.

b. The continuation branch for an event e in a world w is the (smallest) set of pairs of events f and worlds v such that f goes on in v, e is a non-final stage of f in v, and v is a reasonable option for e in w.

c. A world v is a reasonable option for the pair <e, w> if e can continue in w as far as it does in v.

(68) a. $\| [\dots \text{IPFV} \dots [_{vP} \text{ DP } v \dots [_{VP} \dots V \dots]]] \| = \lambda e. \text{IPFV}(\lambda e'.[\text{agent}(\|DP\|)(e') \wedge \|VP\|(e')])(e)]$

b. $\| [_{vP} \text{ DP } v \dots [\dots \text{IPFV} \dots [_{VP} \dots V \dots]]] \| = \lambda e.[\text{agent}(\|DP\|)(e) \wedge \text{IPFV}(\lambda e'.\|VP\|(e'))(e)]$

The only difference between (68a) and (68b) is whether the agent is within the scope of IPFV. In (68a), we combine every VP event with the agent and extract stages of an event from the extension of the resulting event predicate. We end up with the subject DP referring to the agent in a complete VP event. In (68b), we take stages of a VP event and add an agent to those stages; the DP thus denotes the agent of a stage, not of the whole VP event. Strictly speaking, (68a) and (68b) are distinct sets of events. However, under normal circumstances if x is the agent in e, it is also the agent in a stage of e, and the other way around. One can try to construct scenarios where this does not hold, but the difference is too subtle for the speakers to have clear judgments.

To see what kind of scenarios one can play with, consider the sentence that describes an event in which John and Bill plant a tree; $\| \text{ DP } \| = \text{John} \oplus \text{Bill}$, $\| \text{ VP } \| = \lambda e.\text{plant.a.tree}(e)$.

(69) Džon i   Bill   sažaj-ut   derev-o.
     John   and Bill   plant-PRS.3PL tree-ACC
     'John and Bill are planting a tree.'

With the narrow scope of IPFV, we end up with an event predicate where the sum individual John $\oplus$ Bill must be the agent of every stage of tree-planting:

(70) $\lambda e.[\text{agent}(\text{John} \oplus \text{Bill})(e) \wedge \text{IPFV}(\lambda e'.\text{plant.a.tree}(e'))(e)]$

With the wide scope, John $\oplus$ Bill only needs to be the (cumulative) agent of a complete tree-planting.

(71) $\lambda e.\text{IPFV}(\lambda e'.[\text{agent}(\text{John} \oplus \text{Bill})(e') \wedge \text{plant.a.tree}(e')])(e)$

According to my own judgments, the sentence in (69) is true in a situation where we only see Bill placing a tree into the hole just dug by John, but John himself does not do anything. On this scenario, Bill, but not John $\oplus$ Bill is the agent in a stage of a VP-event, which suggests that the truth conditions derivable from (70) are too strong. (71) only requires John $\oplus$ Bill be the agent of the whole planting event, hence the truth of (69) under the discussed scenario is correctly predicted[6].

---

[6] See Kratzer (2003) who argues that the agent thematic relation is cumulative, that is, if x′ is the agent in e′, and x″ is the agent in e″, x′ $\oplus$ x″ is the agent in e′ $\oplus$ e″. Therefore, if a sum individual x is the agent in an event e, x does not have to be the agent in every subevent of e. For x to count as the agent in e it would suffice that every proper part of x would be the agent in some part of e (as long as every part of e has some agent). See also Carlson 1998 for relevant observations about plural agents.

However, given that judgments about the meaning of sentences like (69) are not very clear, we may need a better way of showing that (65) makes wrong semantic predictions. In achieving this, it is useful to take into account the results from the literature on predicate decomposition.

At least since Dowty (1979), much evidence has been discussed suggesting that transitive accomplishment predicates like *open the door* are internally complex and minimally consist of two subevents, the agent's activity and the change of state of the theme. Various tests on subevental complexity has been proposed, including the scope of adverbials like *almost* and *again* (Dowty 1979, von Stechow 1996, Rapp, von Stechow 1999), scope of negation, constraints on argument realization (Rappaport Hovav and Levin 1998 and elsewhere), etc. Details of existing decompositional proposals vary across various dimensions. For space considerations, I cannot discuss parameters of variation and specifics of existing decompositional theories. (72) represents what I will be assuming as a decompositional structure for uninflected accomplishments.

(72) $\| \text{John open the door} \| = \lambda e. \exists e' \exists e'' [e = e' \oplus e'' \land \text{open}_A(e') \land \text{agent}(\text{John})(e') \land$
$\text{open}_{CS}(e'') \land \text{theme}(\text{the.door})(e'') \land R(e'')(e')]$
where **open$_A$** is a predicate of opening activities, **open$_{CS}$** is a predicate of processes in which the theme is getting opened; R is a relation between (sub)events.

(72) is a predicate of events such that each event is the sum of two subevents: agent's activity, which falls under the extension of the predicate of activities **open$_A$**, and the change of state the theme undergoes. The change of state subevents form the denotation of the predicate **open$_{CS}$**. The two subevents are connected by the R relation. In the literature, R is most commonly conceived of as the relation of immediate causation CAUSE. I take a neutral stand as to what exactly the properties of this relation are. As we see shortly, some predicates entail more specific relations than CAUSE. A complete decompositional structure may also include the result state the theme argument attains when the opening event culminates. Nothing in what follows hinges on any specific assumptions about this resultative component of a complex event description, however.

Assuming that a representation along the lines of (72) is empirically well-motivated, a separate question is how the semantic decomposition matches the syntactic structure of the verb phrase. Recently, a family of theories have been developed that rely on the assumption that the event structure is built 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, Pylkkanen 2002, Ramchand 2008, Lyutikova, Tatevosov 2014 and literature therein) that suggest that the same head introduces both the external argument and an activity subevent, which the external argument is a participant of[7]. To the extent that the external argument originates in spec, *v*P, the activity subevent comes out as part of *v* denotation. Tatevosov (2008) and Lyutikova, Tatevosov (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.

Given the above considerations, in the syntactic representation of the event structure, 'open the door' is construed as shown in (73a-d):

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[7] 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 (2012) 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.

(73) a. $\| \,[_{VP}$ open the door $]\,\| = \lambda e.[\text{open}_{CS}(e) \wedge \text{theme}(\text{the.door})(e)]$

  b. $\| \, v \, \| = \lambda P.\lambda x.\lambda e.\exists e'\exists e''\,[e = e' \oplus e'' \wedge \text{open}_A(e') \wedge \text{agent}(\text{John})(e') \wedge P(e'') \wedge$
     $R(e'')(e')$

  c. $\| \, v \, [_{VP}$ open the door $]\,\| = \lambda x.\lambda e.\exists e'\exists e''\,[e = e' \oplus e'' \wedge \text{open}_A(e') \wedge \text{agent}(x)(e')$
     $\wedge \text{open}_{CS}(e'') \wedge \text{theme}(\text{the.door})(e'') \wedge R(e'')(e')$

  d. $\| \,[_{vP}$ John v $[_{VP}$ open the door $]]\,\| = \lambda e.\exists e'\exists e''\,[e = e' \oplus e'' \wedge \text{open}_A(e') \wedge$
     $\text{agent}(\text{John})(e') \wedge \text{open}_{CS}(e'') \wedge \text{theme}(\text{the.door})(e'') \wedge R(e'')(e')$

Going back to the problem of the hierarchical relationship between v and IPFV, the fact that v introduces an activity subevent gives certain promise as to telling the two orderings in (64) and (65) apart. (65) makes the straightforward semantic prediction that IPFV scopes below the activity:

(74) agent's activity > IPFV > change of state of the door

Transferring (74) to the example in (72), we get (75):

(75) a. $\| \,[$ IPFV $[$ open the door $]]\,\| = \lambda e.\,[\text{IPFV}(\lambda e'.\,\text{open}_{CS}(e') \wedge$
      $\text{theme}(\text{the.door})(e'))(e)]$

  b. $\| \,[\, v \,[$ IPFV $[$ open the door $]]]\,\| = \lambda x.\lambda e.\exists e'\exists e''\,[e = e' \oplus e'' \wedge \text{open}_A(e') \wedge$
      $\text{agent}(x)(e') \wedge R(e'')(e') \wedge \text{IPFV}(\lambda e'''.\,\text{open}_{CS}(e''') \wedge$
      $\text{theme}(\text{the.door})(e'''))(e'')]$

  c. $\| \,[\text{John } v \,[$ IPFV $[$ open the door $]]]\,\| = \lambda x.\lambda e.\exists e'\exists e''\,[e = e' \oplus e'' \wedge \text{open}_A(e') \wedge$
      $\text{agent}(\text{John})(e') \wedge R(e'')(e') \wedge \text{IPFV}(\lambda e'''.\,\text{open}_{CS}(e''') \wedge$
      $\text{theme}(\text{the.door})(e'''))(e'')]$

(75a) shows the result of the application of IPFV to the VP in (73a): the set of stages of an event where the door gets opened. In (75b), the denotation of v in (73b) applies to (75a), and in (75c) the external argument position is saturated. (75c) denotes the set of events each of which is a sum of an activity, e', performed by the agent and a stage of the change of state of the theme, e''. The change of state e'' continues and culminates in the worlds on a continuation branch for e'' in the evaluation world (Landman 1992). In those worlds, e'' develops into an event that satisfies the event description $\lambda e.\,\text{open}_{CS}(e) \wedge \text{theme}(\text{the.door})(e)$. In prose, (75) denotes events in which the agent did something to the door so that the door is getting opened.

Is that the right semantics for Russian imperfective sentences? I have two reasons to believe that the Activity > IPFV > Change of state ordering in (74) makes wrong predictions. Let us take a closer look at *incremental predicates* and at *ongoing attempt* scenarios.

3.2.2 Incremental predicates and ongoing attempts

There are predicates that entail an incremental relation between an activity and a change of state subevents (Rothstein 2004), e.g. *read a novel*, *eat a sandwich*, *assemble a model*, *tell a fairy tale*. The incremental relation is defined in (76)-(77) and graphically represented in Scheme 1:

(76) **Incremental relation** (Rothstein 2004)
      $\text{INCR}(e_1, e_2, C(e_2))$ (e_1 is incrementally related to e_2 with respect to the incremental chain $C(e_2)$) iff there is a contextually available one-one function μ from $C(e_2)$ onto $\text{PART}(e_1)$ such that $\forall e \in C(e_2).\tau(e) = \tau(\mu(e))$

(77) **Incremental chain**
C(e) is a set of parts of e such that
(i) the smallest event in C(e) is the initial bound of e,
(ii) for every e_1, e_2 in C(e) $e_1 \leq e_2$ or $e_2 \leq e_1$, and
(iii) e is in C(e)
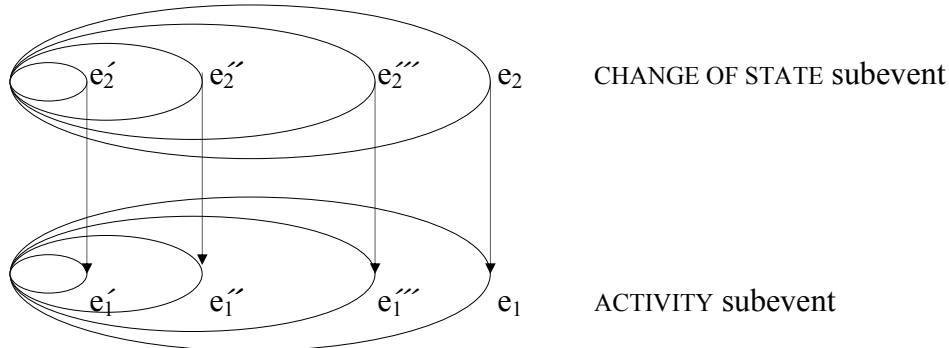
Scheme 1. The INCR relation

Intuitively, the incremental relation obtains whenever no change happens without an input from the activity and any (contextually relevant) part of the activity brings about a certain change.[8] Consider now 'tell a fairy tale' in (78) on the progressive reading:

(78)   Vasja   rasskaz-yva-l   skazk-u.
       V.   tell-YVA-PST.M   fairy.tale-ACC
       '(When I came in,) Vasja was telling a fairy tale.'

According to (74), the vP on which (78) is based has the following denotation, parallel to (75):

(79) $\lambda e.\exists e'\exists e''$ [e = e' $\oplus$ e'' $\wedge$ tell$_A$(e') $\wedge$ agent(Vasja)(e') $\wedge$ INCR(C(e''))(e'')(e') $\wedge$
       IPFV($\lambda e'''$. tell$_{CS}$(e''') $\wedge$ theme(fairy.tale)(e'''))(e''))(e')]

(79) denotes the set of events which consist of two subevents whereby the telling activity is incrementally related to a proper stage of an event in which the fairy tale gets told. This means that at least some part of the fairy tale gets told without a corresponding telling activity. But the incremental relation entails exactly the opposite. The same should happen to any incremental predicate: the analysis predicts that there are parts of a change of state not mapped to an activity, contrary to what the incremental relation requires.

The prediction, therefore, is that IPFV should get us into trouble when it tries to combine with an incremental predicate. But it does not. Therefore, we have one argument against the v > IPFV ordering in (65).

The other type of environments where the fallacy of (65) is fairly visible are ongoing attempt scenarios. To create such an environment we need a non-incremental predicate where the change of state happens at the minimal final part of the activity. Consider (80):

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[8] Rothstein's incrementality, a relation on events, is not to be confused with Krifka's (1989, 1992, 1998) incrementality, which is a property of relations between individuals and events. Not every incremental predicate *a là* Rothstein implies an incremental theme predicate *a là* Krifka. For example, *He pushed the cart into the garage* entails the incremental relation between the pushing activity and change of location of the cart. The cart, however, is not an incremental theme: it is not the case that the more one pushes the cart, the bigger part of the cart that has been pushed.

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

(80) would be represented as in (75). Again, the analysis predicts that there is a complete activity that brings about a stage of the change of state of the door. However, (80) means something very different: there is a stage of opening activity (which will eventually culminate in relevant worlds) and no change of state at all.

Therefore, we can conclude that the Activity > IPFV > Change of state ordering leads to unwelcome empirical consequences. None of these problems appears if IPFV takes scope over the whole complex eventuality:

(81)   IPFV > Activity > Change of State

With (81), both 'tell a fairy tale' and 'open the door' would be represented as shown in (82)-(83):

(82) $\lambda e.$ IPFV$(\lambda e'. \exists e'' \exists e''' [e' = e'' \oplus e''' \wedge \text{tell}_A(e'') \wedge \text{agent(Vasja)}(e'') \wedge$
       $\text{INCR}(C(e'''))(e''')(e'') \wedge \text{tell}_{CS}(e''') \wedge \text{theme(fairy.tale)}(e''')])(e)$

(83) $\lambda e.$ IPFV$(\lambda e'. \exists e'' \exists e''' [e' = e'' \oplus e''' \wedge \text{open}_A(e'') \wedge \text{agent(Vasja)}(e'') \wedge R(e''')(e'')$
       $\wedge \text{open}_{CS}(e''') \wedge \text{theme(door)}(e''')])(e)$

(82) is the set of stages of a complex event consisting of an activity and a change of state, incrementally related, that is, the set of stages of a complete telling of a fairy tale. Obviously, (82) does not lead to the same complication as (79) does: there need not (and, in effect, cannot) be any part of the change of state not incrementally related to the activity.

The predicate in (83) 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. Since the activity that aims at opening the door but has not yet brought about any change does count as a stage of such a complex event, (83) successfully captures the meaning of the imperfective under the ongoing attempt scenario in (80).

To sum up, having considered two possible orderings of IPFV with respect to the activity subevent, (84)-(85), I found out that the former makes wrong predictions for at least two types of imperfective environments. The latter, to the contrary, successfully captures judgments about their truth conditions.

(84)   Activity > IPFV > Change of state

(85)   IPFV > Activity > Change of state

If activity subevents appear as (part of) the denotation of v, IPFV must be outside vP, (86a). From the previous reasoning in section 3.1, we maintain that yva is inside vP, (86b):

(86)   a. [... v ... [... yva ...]]
       a. [... IPFV ... [... v ...]]

From (86a-b), it follows than (87) holds:

(87)   [… IPFV … [$_{vP}$ … v … [… yva …]]]

This completes my argument that *yva* is not interpreted as IPFV in the position where it is merged. I believe, moreover, to have shown that *yva* appears inside *v*P, whereas IPFV is *v*P-external and merges within the functional domain of a clause, presumably, in AspP. Combining this result with the argument from Tatevosov (2011) that the same happens to PFV, yields the following general picture of Russian aspectual system:

(88)   [$_{AspP}$ … PFV … [$_{vP}$ … [… **pro**-čita …]]]
(89)   [$_{AspP}$ … IPFV … [$_{vP}$ … [… **yva** … [… **pro**-čita …]]]]

The system is characterized by a few essential properties listed in (90):

(90)   a. Russian aspect is not lexical. As in English and lots of other languages, semantic aspects appear in the functional domain of a clause.
         b. Russian "aspectual morphology" is never interpreted as rendering semantic aspects in the position where it is merged. (This does not mean that it is not interpreted at all; all it means that its semantic contribution, if any, is to be found elsewhere.)
         c. Aspectual operators are phonologically silent.

I believe that these results, especially (90a), are of significance for understanding parameters of cross-linguistic variation in the aspectual domain as well as universal constraints on this variation. If the picture outlined above is correct, Russian (and possibly, other Slavic languages) stop looking like outliers that lexically encode aspectual meanings which in other languages are part of the grammatical system. This allows to reduce substantially the amount of stipulations a theory has to make to achieve a proper understanding of a possible aspectual system. To the extent that the above argument is convincing, the goal of the study has been accomplished.

4. To be continued

In this paper, I have argued for separating consistently aspectual morphology from aspectual interpretation. However, a complete picture of the emerging system has not yet been developed. I would like to conclude by pointing out two questions that come into sight as soon as Russian aspectual system starts looking like (88)-(89) and to briefly outline the solutions I want to propose.

The first question concerns the semantic contribution of *yva*. If it does not render IPFV, what does it do? In Tatevosov (2014) I argue that empirical evidence supports at least the generalization in (91):

(91)   a. *yva* combines with a relation between events and states (of type $<v,<v,t>>$), existentially binds the state variable and yields a property of events.
         b. $\| yva \| = \lambda R.\lambda e.\exists s[R(e)(s)]$

The *yva* morpheme is thus Paslwaska, von Stechow's (2003) Eventizer. Here is the brief summary of observations that support (91). As we know, *yva* combines with prefixed stems to create a "secondary imperfective". Arguably, prefixed stems denote accomplishment event structures, consisting of an eventive component and a result state, (92). Result states can be externalized by the participial morphology (PPP, "perfective past participle"), (93):

(92) $\| [_{VP}$ pročita- roman $] \| = \lambda s.\lambda e.$ [read$_E$(e) $\wedge$ theme(novel)(e) $\wedge$ read$_S$(s) $\wedge$
        arg(novel)(s) $\wedge$ cause(s)(e)],

(93) $\| [n [_{VP}$ pročita- roman $]] \| = \lambda s. \exists e$ [read$_E$(e) $\wedge$ theme(novel)(e) $\wedge$ read$_S$(s) $\wedge$
        arg(novel)(s) $\wedge$ cause(s)(e)]

As soon as VP merges with *yva*, passive participles can not longer be formed, (94a). Crucially, this constraint cannot be phonological/ morphological, since the same *-n-*morpheme can readily occur within ASNs in (94b) (Babby 1997, Pazelskaya, Tatevosov 2008, among others).

(94)   a. *pro-čit-yva-**n**   b. pro-čit-yva-**n**-i-e
            PRF-read-YVA-NMN.PPP   PRF-read-YVA-NMN-N-NOM
            'having been read'   'reading'

Unlike passive participles, ASNs are eventive. This suggests that (94a) is most likely to be bad for semantic reasons: the PPP needs a semantically active state argument, but in (94a) it has already be bound by *yva*. This is essentially the argument for treating *yva* as an Eventizer.

The second question is more substantial. If pieces of aspectual morphology like prefixes and *yva* do no render aspectual operators, how to account for the very fact that verb stems where the last step of derivation is prefixation come out perfective? Similarly, why is that whenever *yva* is the topmost piece of "aspectual morphology", we end up having an imperfective clause? In other words, how do we explain that out of four logical possibilities in (95)-(98) only two are actually attested?

(95)   Perfective prefixed stem: OK
        [… [… PFV … [Prefix … […]]]]

(96)   Imperfective prefixed stem: ☠
        [… [… IPFV … [Prefix … […]]]]

(97)   Perfective *yva* stem: ☠
        [… [… PFV … [… yva … [Prefix … […]]]]

(98)   Imperfective *yva* stem: OK
        [… [… IPFV … [.. yva … [Prefix … […]]]]

To account for the fact that aspectual operators match a right type of stem, in Tatevosov (2014) I take up the idea already introduced in Klein 1995. PFV and IPFV differ type-theoretically. PFV takes a relation between events and states (of type <v,<v,t>>) as its argument, whereas IPFV needs a property of events (of type <v,t>). Since, by assumption, this is exactly how prefixed stems and secondary imperfectives differ, the desired distribution in (95)-(98) is achieved with no effort at all.

To conclude, while I believe that (88)-(90) is the right way of thinking about he Russian aspectual system, a lot of details are still to be elaborated and explicitly spelled out. This will be the topic for a story to follow.

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