

Relative past and the syntax-semantics interface in Russian¹

Abstract

In this paper, I argue both empirically and formally that we need an optional relative past in the semantics of the temporal system of Russian. I propose a temporal calculus which can effectively deal with relative past readings in Russian, including the interaction with temporal adverbials, without positing an unwelcome ambiguity of explicit markers of tense and aspect. Furthermore, I show that a relative past is, to a certain extent, independent of aspect and cooccurs also with imperfective aspect, pace Paslawska and von Stechow (2003). More specifically, the so-called factual *Ip*f clearly exhibits past perfect interpretations, although it does not freely allow interpolation of a relative past.

1 Tense and aspect in a language without perfect tenses

Russian lacks an overt expression for the kind of relative past expressed through the composite perfect in Germanic and Romance. From the point of view of morphology, tense proper is a simple story in Russian which basically can be subsumed as ‘±past’. However, the temporal system is significantly complicated by viewpoint aspect, that is, the morphological and semantic distinction between perfective (*Pf*) and imperfective (*Ip*f) verb forms.

In this paper, I will focus on complete event interpretations of both *Pf* and *Ip*f (the notorious *konstatacija fakta*, “factual *Ip*f”). This fine-grained aspectual distinction in Slavic allows for an overt disambiguation of the ambiguous present perfect in English; cf. the translations below, where one and the same English form corresponds to the morphological realisation of two different grams in Russian:

- (1) Ja uže skosil *pf* / kosil *ipf* travu.
I already mowe-PAST-PF / mowe-PAST-IPF lawn
I have already mowed the lawn. (resultative perfect ≈ *Pf*; experiential perfect ≈ *Ip*f)

The difference in aspectual choice in (1) is at the heart of aspectual competition in Russian.² How should we capture the temporal configurations of these Russian sentences at the syntax-semantics interface, given the standard assumption that viewpoint aspects encode temporal relations between the assertion time and the event time (Klein 1995)? Since Russian overtly expresses both tense and aspect, one would like to see, from the point of view of compositionality, a principled and systematic account of their interaction.

*1.1 Against Borik’s ‘present perfect’-analysis of factual *Ip*f*

¹ I am grateful to Kjell Johan Sæbø and Arnim von Stechow for stimulating discussions on the formalisation of the phenomena discussed in this paper. Without the inspiring works of these two scholars, it would not have been possible to develop the theory outlined here.

² Crucial for the understanding of (1) is the competition between the unmarked imperfective and *Pf* with its temporal anchoring (here: temporal anchoring to the result state holding at the utterance time). I refer the reader to (Grønn 2004) for an analysis.

Concerning examples like (1) above, I will argue that the present perfect which shows up in the English translations needs not be captured by our formalisation of the Russian data. This follows from the fact that the present perfect and the simple past are truth-conditionally equivalent (with telic predicates) in languages like English. The perfect expresses a precedence relation between two reference times. Present perfect is characterised by the presence of certain consequences of the event holding at the utterance time s^* , but the indexical s^* is always available for the temporal interpretation, hence we do not need a present perfect to give us access to this parameter. Therefore, I will argue against the analysis of (Borik 2002), where the factual Ipf in constructions like (1) is dubbed “the present perfect of the Russian imperfective”. The morphology is a simple past and the interpretation should be a simple past.

To make this point clear it will still be useful to have a closer look at Borik’s proposal, which has the merits of being explicitly stated and can therefore easily be tested. Borik presents a privative analysis of the aspectual system in Russian. The marked Pf is identified with two conditions which both must hold for a perfective sentence to be true, while Ipf is defined in negative terms as non-perfective. Thus, Ipf is used as the unmarked member if *at least one* of the two conditions on perfectivity is not met (Borik 2002, 8). The definition of Pf proposed by Borik is spelled out in (2) below (cf. Borik 2002, 193), where the variables have the classic Reichenbachian interpretation, except for the fact that they obviously refer to intervals rather than points in time:

(2) (i) Pf in Russian is defined by the configuration:
 $S \cap R = \emptyset \ \& \ \text{INCLUDES}(R, E)$

(ii) Ipf is defined as non-perfective, i.e.:
 $\neg [S \cap R = \emptyset \ \& \ \text{INCLUDES}(R, E)]$,
 hence $S \cap R \neq \emptyset$ or $\neg \text{INCLUDES}(R, E)$

The first condition on Pf, which says that the reference time should not overlap the utterance time, is primarily supposed to reflect the fact that Pf with present tense morphology has a future tense interpretation. Concerning aspect proper, note that the complete event interpretation, which amounts to the event time being included in the reference time, is the default interpretation in this system. Hence, if the tense-like condition (the relation between S and R) on perfectivity is violated, Ipf is automatically used with the possibility of leaving the aspectual configuration $\text{INCLUDES}(R, E)$ unchanged. Of course, from a purely logical point of view, the system does not exclude the possibility of Ipf being triggered by a negation of *both* conjuncts in the definition of Pf. However, Borik seems to defend the view that $\text{INCLUDES}(R, E)$ is true of Ipf by default when the first conjunct of the condition on perfectivity is negated. In a sense, this makes the progressive reading semantically marked compared to factual Ipf.

Since factual Ipf denotes complete events, factual Ipf can, of course, only be defined negatively with respect to the first condition on Pf. Hence, according to Borik’s theory, the reference time and utterance time must overlap in the case of factual Ipf, that is, $S \cap R \neq \emptyset$. This is also why Borik refers to factual Ipf as the “Present Perfect reading of Ipf”.

One problem with this analysis is the use of the reference time parameter R, which carries too many functions. In section 2, I propose to split up the notion of reference time into what I will call the assertion time, the evaluation time and the frame time. More importantly, concerning factual Ipf, Borik’s theory is problematic in view of the data presented in section 3, where it is empirically shown that factual Ipf cooccurs with past perfect readings. Hence,

the utterance time is not the only possible evaluation time for a past tense in Russian, irrespective of viewpoint aspect.

1.2 The importance of temporal adverbials

On closer inspection, the Russian constructions in (1) differ from their English translations not only with respect to the morphological make up. The analogy between resultative/experiential perfect and perfective/imperfective aspect soon breaks down. Consider for instance the alleged “experiential perfect” reading of the factual IpF in (1). If we extend the range of data, several differences emerge. For instance, unlike the experiential perfect in English, factual IpF in Russian is perfectly fine with frame adverbials:

- (3) Ja padal s dereva v detstve.
I fall-PAST-IPF from tree in childhood
I fell (# have fallen) from a tree in my childhood.

Of course, there is nothing extraordinary about the Russian data, since the tense form being used is a simple past, and not a composite perfect. Factual IpF in Russian (past tense + a complete event interpretation), unlike the prototypical experiential perfect in Germanic, therefore cooccurs happily with (sufficiently large) frame adverbials. Accounting for this interaction of frame adverbials and factual IpF is straightforward, as soon as we leave behind the illusion of a perfect tense.

In fact, frame adverbials are particularly important for any aspectual theory couched in temporal terms, since they are crucial in determining the value of reference times. In (3) above, the assertion time equals the frame time *v detstve* ‘in my childhood’ and makes the past tense redundant. In other cases, the assertion time is constrained by both a frame adverbial and past tense:

- (4) Segodnja ty obedal v restorane! (internet)
Today you eat-PAST-IPF in restaurant
Today you had dinner in a restaurant!

The frame adverbial *segodnja* ‘today’ denotes an interval of 24 (or, perhaps, 12) hours, but the assertion time, which the speaker focuses on, is only the part of today which is located in the past, i.e. prior to the utterance time s^* . In the next section, I will spell out more precisely how aspect, tense and temporal adverbials interact in Russian.

1.3 Some ingredients for a temporal calculus

I assume a standard semantics for aspectual operators (e.g. Kratzer 1998), here spelled out as a DRS (Discourse Representation Structure) in the framework of λ -DRT (a compositional version of Discourse Representation Theory):

- (5) Pf (or factual IpF) $\rightarrow \lambda P \lambda t [e \mid P(e), \text{INCLUDES}(t,e)]$

By using λ -expressions to represent functions of different complexity, we can build the DRSs compositionally, working bottom-up. According to the formula in (5), viewpoint aspects map properties of events into properties of times. I thus assume that the aspectual operator combines through functional application with the aspect- and tenseless VP. The VP, including

internal and external nominal arguments, denotes a property of events in the spirit of neo-Davidsonian semantics. Note also that aspectual operators are responsible for declaring the event variable in the universe of the DRS (\approx existential quantification). Building existential quantification of the event into the semantics of the aspectual operator is standard in current approaches to temporality at the syntax-semantics interface. Since grammatical aspect is obligatory in Russian, this implies that we do not need to invoke default existential closure of the event argument. In other words, the event argument in Russian is overtly realised in the morpho-syntax by the aspectual operator.

Concerning semantics proper, aspectual operators establish purely temporal relations between the event time and the assertion time. Following Klein (1995, 669), the event time is the time at which some situation obtains, while the assertion time is the time which the speaker focuses on, i.e. “the time for which an assertion is made by the utterance which describes the situation”. The semantic contribution of Pf and factual Ipf is to assert that the assertion time t includes the time of the event e denoted by the predicate P , or, alternatively, e is included in t . In the present framework, this takes the form of a DRS condition making use of the two-place predicate INCLUDES. The progressive/processual reading of Ipf, on the contrary, can reasonably be seen as an instance of the opposite inclusion relation, which can be represented by switching the arguments of the topological relation: INCLUDES(e, t).

The assertion time, i.e. the speaker’s focus, is necessary to make visible the situation talked about in a sentence, but where does it come from? The standard answer is that a tense operator having scope over aspect locates the assertion time in the past, present or future. However, as we saw above in section 1.2, temporal adverbials – particularly frame adverbials – play an important role in establishing the value of the assertion time. To capture this interaction and account for the intuition that tenses and adverbs together determine the value of the assertion time, I adopt a syncategorematic treatment of tense, known as the “definite theory of tense” (von Stechow 1995):

- (6) $Past^*(t)(s^*)$ denotes the intersection between t and the past of s^* , in other words, the maximal interval in t prior to s^* .

Tense itself is a function from a frame time t to an assertion time t' . This amounts to some kind of semantic unification, where tenses and temporal adverbials are part of the same ‘branch’ in the tree, a tree which ends in the assertion time interval at the top node. This provides us with a compositional account, through the assertion time parameter, of the interaction between aspect and other temporal phenomena. The final DRS for example (4) would thus be:

- (4') $[e \mid dinner(e), Agent(e, hearer), Place(e, restaurant), INCLUDES(Past^*(today)(s^*), e)]$

The representation in (4') says that the event of having dinner is located in the interval resulting from intersecting ‘today’ and ‘all time preceding the utterance time’. Uttered at, say, 4 o'clock on July 1, the sentence would mean that the dinner took place some time on July 1 before 4 o'clock. In other words, the assertion time is only the part of today which is located in the past. This example therefore clearly shows that the assertion time cannot automatically be identified with an overt frame adverbial or with tense proper (past tense \approx “the whole past”).

2 Relative past and perfective aspect

In the previous section, I argued against distinguishing between so-called ‘present perfect’ and ‘simple past’ interpretations of past tense in Russian. The difference shows up in translations into English, but these cases should be modelled uniformly, reflecting the uniform tense morphology in Russian. Now comes the tricky part. What happens if the interval denoted by tense does not relate to the speech time s^* ?

It is well-known that Pf and simple past morphology can occur with *past perfect* interpretations in Russian:

- (7) Kogda Karpov stal čempionom mira, on uže vyigral čempionat mira sredi junošej.
 When Karpov become-PAST-PF champion of-world, he already win-PAST-PF championship of-world among juniors.
When Karpov became world-champion, he had already won the junior world-championship.

Indeed, such examples represent a challenge to the uniform one-to-one correspondence between morpho-syntax and semantics, which was suggested above. The perfective verb *vyigral* ‘won’ denotes a complete event located in the past of the temporal adverbial clause, which in turn denotes an interval prior to the utterance time. The fact that past tense sentences in Russian cannot be reduced to a deictic past must affect our formalisation of temporality at the syntax-semantics interface.

This argument is perhaps even more striking for examples with an overt future tense and a covert past, like the following, discussed in the works of Paslawska and von Stechow:

- (8) V sem’ časov Maša uže vyjdet iz doma.
 At seven hours Maša already leave-FUT-PF from house
At seven, Maša will have left already.

In example (8), the future tense relates the temporal adverbial *v sem’ časov* ‘at seven o’clock’ to the future of the utterance time, while a covert relative past seems necessary to account for the available reading whereby the event occurs *before* 7 o’clock.

2.1 Against Paslawska and von Stechow’s ambiguity of Pf

The first authors to take seriously the formalisation at the syntax-semantics interface of relative past readings in Russian were Paslawska and von Stechow in partly unpublished works from 1999 and onwards. Their approach, however, is heavily biased towards Pf, which is claimed to be ambiguous between the usual complete event interpretation (the event is included in the assertion time) and a precedence relation (the event precedes the assertion time, which in turn precedes or follows the utterance time, depending on tense). The latter temporal relation indeed results in a relative past interpretation.

The two available readings for (8) would be:

- (8’) [e | leave(e), Agent(e, Maša), INCLUDES(Fut*(7 o’clock)(s*),e)]
An event of Maša’s leaving is included in the maximal future of 7 o’clock with respect to the utterance time, i.e. Maša’s leaving is included in the interval of 7 o’clock.
- (8’’) [e | leave(e), Agent(e, Maša), PRECEDES(e, Fut*(7 o’clock)(s*))]
An event of Maša’s leaving precedes the maximal future of 7 o’clock with respect to the utterance time, i.e. Maša’s leaving precedes the interval of 7 o’clock.

Paslawska and von Stechow’s account maintains a uniform treatment of the overt tense morphology, since the value of the “assertion time”, i.e. $Fut^*(7\ o'clock)(s^*)$, is the same in both cases. However, the ambiguous perfective aspect induces two different temporal configurations: the purely aspectual relation INCLUDES and the more tense-like relation PRECEDES.

Similarly, in the case of past perfect readings of Pf, such as (7) above, Pf contributes the condition $PRECEDES(e,t)$, while the overt past tense of *vyigral* ‘won’ serves to locate the temporal ‘kogda/when-clause’ in the past of the utterance time: $Past^*(when\ Karpov\ became\ world-champion)(s^*)$. By combining the contribution of perfective aspect and past tense, we arrive at the correct past perfect configuration: $PRECEDES(e, Past^*(when\ Karpov\ became\ world-champion)(s^*))$. This system is compositional only if the relative past is consistently expressed by overt perfective morphology.

However, the idea of linking the phenomenon of relative past to viewpoint operators (in particular Pf) runs into principled problems related to the interaction of tenses and temporal adverbials. One problem with the above analysis is that there is no room for temporal adverbials being true frame times of the event on a past perfect reading. This is also pointed out by the authors themselves: “temporal adverbs should modify times directly. So there might be something wrong with our system” (Paslawska and von Stechow 2003, 340).

2.2 The evaluation time parameter

In a system where a relative past, represented as the relation $PRECEDES(e,t)$, replaces the aspectual inclusion relations, we should no longer consider t to be the assertion time.

It is well-known that Reichenbach’s original use of his ingenious ‘reference time’ is overloaded as it assumes too many functions at once. In this paper, I therefore refer to the reference time only informally as a cover term. In order to account for cases like (7) and (8), we need an additional reference time parameter, different from the assertion time, the frame time and the utterance time. The reference time in question is sometimes referred to in the literature as the *evaluation time*.³

The evaluation time refers to the temporal perspective of the speaker (interpreter). The default value of the evaluation time is the utterance time, but in (7) and (8) above the evaluation time is importantly different from both Reichenbach’s S and R. Following (von Stechow 1995), I therefore replace s^* in the definition of past tense in (6) by the *distinguished variable* $t0$. The convention thus adopted is that $t0$ denotes the local evaluation time, which equals the utterance time whenever $t0$ is free. Henceforth, tense is the function in (9), a function from a frame time to an assertion time:

$$(9) \quad \lambda t \text{ Tense}^*(t)(t0)$$

But this enrichment of the inventory of reference times still does not explain where the relative past comes from in the constructions in (7) and (8) above.

2.3 Interpolation of a covert relative past

³ The two main reference time parameters referred to in this paper, the “assertion time” and the “evaluation time”, carry numerous names. In the DRT-literature, they frequently appear as the “location time” and the “perspective time”, respectively.

In von Stechow's prolific work on temporality at the syntax-semantics interface, times are always expressed through 'tenses' at LF. Accordingly, he argues that a relative past (a relation between two times) without a superordinate tense is unreasonable. Given the careful distinction between the assertion time and the evaluation time in the previous section, I propose to maintain a uniform picture of tenses and viewpoint aspect by admitting a free interpolation of a covert relative past. This move is clearly in the spirit of Paslawska and von Stechow (2003), but the details of the implementation are different. Notably, the revised theory avoids positing an unwelcome ambiguity of Pf. However, the system becomes non-compositional since there is no longer a one-to-one mapping between meaning and form.

The idea of the calculus is basically that the higher tense branch (corresponding to overt tense morphology and temporal adverbials) provides the evaluation time of the covert, relative tense. It is the assertion time of the latter which enters the aspectual relation. The compositional account of viewpoint aspect (each verb gives rise to one aspectual projection in the syntax) is thus not mirrored by tense.

Somehow we have to repair the mismatch between morphology and semantics, and ensure that the optional branch corresponding to the covert relative past be related to the higher tense. This is done by invoking the principle of *predicate abstraction*, which here amounts to type-shifting of an expression denoting a truth-value to a predicate of times. The way this is achieved is through an operation providing a λ -abstractor over the distinguished variable t_0 . This kind of type-driven interpretation (see Heim and Kratzer 1998 for details) is illustrated in (10) below, where the only two composition principles are functional application (FA) and predicate abstraction (PA):

(10) *Temporal calculus with a covert relative past:*

1. $VP \rightarrow \lambda e [\mid VP(e)]$
2. Aspectual operator $\rightarrow \lambda P \lambda t [e \mid P(e), ASP(t,e)]$
3. Combining 1 + 2 (FA): $\lambda t [e \mid VP(e), ASP(t,e)]$
4. Covert relative past $\rightarrow \lambda t Past^*(t)(t_0)$
5. Default value of frame time in absence of frame adverbials: t_∞ ⁴
6. Combining 4 + 5 (FA): $Past^*(t_\infty)(t_0)$
7. Combining 3 + 6 (FA): $[e \mid VP(e), ASP(Past^*(t_\infty)(t_0),e)]$
8. Abstracting over the evaluation time (PA):
 $\lambda t_0 [e \mid VP(e), ASP(Past^*(t_\infty)(t_0),e)]$
9. Overt higher tense $\rightarrow \lambda t Tense^*(t)(t_0)$
10. Frame time: t_1 (or "t_∞" in absence of frame adverbials or contextually given frame times)
11. Combining 9 + 10 (FA): $Tense^*(t_1)(t_0)$
12. Combining 8 + 11 (FA): $[e \mid VP(e), ASP(Past^*(t_\infty)(Tense^*(t_1)(t_0)),e)]$

By adopting the composition principle of predicate abstraction, I draw on what seems to be a reasonable analogy between relative tenses and relative clauses with a type-shift in both cases from truth values – to properties of times and properties of individuals, respectively. I refer the reader to (Grønn 2004) for a more comprehensive account of this analysis.

⁴ The variable t_∞ is treated as a distinguished variable, which by convention is interpreted as a maximally indefinite time, viz. 'all time'. There is only one interval corresponding to 'all time', hence t_∞ can occur free without causing any problems for interpretation.

How does this modified temporal calculus handle core examples of relative past readings like (7) and (8) above? As the reader can verify, the procedure results in the following final representations for these sentences:

(7') [e | win_WC_jr(e), Agent(e, Karpov),
INCLUDES(Past*(t ∞)(Past*(when_Karpov_won_WC_sr)(t0)),e)]
The event of Karpov's winning the junior world-championships is included in the maximal interval preceding the maximal interval prior to the utterance time of Karpov's winning the senior world-championships.

(8'') [e | leave(e), Agent(e, Maša), INCLUDES(Past*(t ∞)(Fut*(7 o'clock)(t0)),e)]
An event of Maša's leaving is included in the maximal interval preceding the maximal interval of 7 o'clock posterior to the utterance time.

Note that the temporal adverbials, the 'kogda/when-clause' in (7) and *v sem' časov* 'at seven o'clock' in (8), fill the role of the frame time parameter – which eventually determines the assertion time – for the higher, overt tense. At the same time, this assertion time serves as the evaluation time for the relative past. This last point is the main motivation behind the calculus, and it is achieved formally through λ -abstraction over the evaluation time $t0$ of the relative past.

The prediction of von Stechow and Paslawska's theory is that a relative past should not cooccur with imperfective aspect since its presence is triggered by perfective morphology.⁵ In the revised system above, however, the choice of grammatical aspect and the option of a relative past are independent phenomena. This calls for an investigation into relative past readings of Ipf.

3 Relative past and imperfective aspect

Although tense and aspect are independent morphological categories in Russian, they interact closely at the (morpho-)syntax-semantics interface, notably through the assertion time parameter. In accounting for relative past readings, the evaluation time parameter also plays a crucial role. However, there is one important phenomenon which a temporal calculus such as the one outlined above cannot deal with properly, that is *competition* between different <form, meaning>-pairs. A comprehensive account of competition in syntax/semantics presumably requires something like an optimality theoretic framework. Here, I can only superficially address the question of why – and to which extent – certain temporal configurations seem to be blocked for verbal predicates containing imperfective aspect.

The core meaning of Ipf is the progressive/processual reading, which in our framework is spelled out as the relation INCLUDES(e, t), i.e. the assertion time t is included in the event time. Typically, therefore, Ipf seeks a "small" assertion time. If such a time is available, e.g. through the presence of a punctual temporal adverbial, we get an optimal <form, meaning>-pair, and there is no need to reinterpret the reference time parameter. From

⁵ Alternatively, Paslawska and von Stechow would have to assume that also Ipf is ambiguous between purely aspectual inclusion relations and a precedence relation. This option is actually briefly considered in the informal discussion of factual Ipf and past perfects in (Paslawska and von Stechow, 2003), but it is not very attractive since it blurs the distinction in relative past contexts between progressive, habitual-iterative and factual interpretations.

this optimality perspective, the non-compositional “back-tracking” strategy of inserting a covert relative past is blocked. On a relative past interpretation, the frame time parameter (e.g. a “small” interval corresponding to a “kogda/when-clause”) does not restrict the assertion time of the aspectual relation, but ends up in the higher tense and thus functions as the evaluation time of the relative past. The assertion time of the relative past, which enters the aspectual relation, then becomes *the whole past* prior to this evaluation time. However, IpF is in general reluctant to accept such big assertion times when a small assertion time is available.

The restrictions on a relative past reading are particularly strong for the composite imperfective future tense configuration (“budet” + an imperfective infinitive), which, unlike the perfective future (e.g. *vyjdet* ‘will leave/will have left’ in (8) above), can never trigger a relative past interpretation. In past tense contexts, the picture is less clear since the peculiar factual IpF is licensed by “large”, indefinite assertion times in competition with the temporal anchoring of Pf (see Grønn 2004). Indeed, as we will see below, past perfect readings – although without a covert relative past – are quite frequent with factual IpF.

3.1 Relative past under attitude verbs

Examples with factual IpF like (11) and (12) below pattern with the well-known phenomenon of relative tense (*otnositel’noe vremja*), characteristic of non-SOT languages like Russian:

(11) Ne bylo somnenij, čto ja prežde vstrečal eë. (Uppsala Corpus)
 NEG be-PAST doubts that I before meet-PAST-IPF her
There was no doubt that I had met her before.

(12) Vernuvšis’ v gostinicu, on uznal, čto emu zvonili iz Permi. (Uppsala Corpus)
 Return-PF-GERUND to hotel he know-PAST-PF that him they-called-PAST-IPF from Perm.
When he returned to the hotel, he learned that they had phoned him from Perm.

The embedded tense is sensitive to the tense of the superordinate attitude verb. For instance, in (11) the event of “meeting her” in the complement clause is included in the “whole past” preceding the time of “the state of no doubt” reported in the matrix.

Note that the relative past in these cases is *overt*, hence the formalisation should not be quite the same as in section 2.3 above. It seems that for relative past in embedded contexts, we can maintain a compositional and rather straightforward picture. I assume that the embedded proposition in (11) has the form of (11’) at the stage where tense and aspect of *vstrečal* ‘met’ have been interpreted:

(11’) $\lambda w [e \mid \text{meet_her}(e)(w), \text{Agent}(e, I), \text{INCLUDES}(\text{Past}^*(\text{max.interval} < t_0)(t_0), e)]$

The complement clause with its complete event interpretation of factual IpF contains the large, indefinite frame adverbial *prežde* ‘before’, represented in (11’) as *max.interval < t₀*, which in my syncategorematic treatment of tense is no different from *t_∞* restricted to the past.⁶

According to a type-shifting principle of von Stechow 1995, “operators shifting the time always do that via lambda abstraction over *t₀*”. There are two independent (and, in a certain way, conflicting) reasons for type-shifting the proposition in (11’) by abstracting over the distinguished evaluation time parameter as in (11’):

⁶ “the maximal past of the maximal interval prior *t₀*” \approx “the maximal past of *t₀*”.

(11'') $\lambda w \lambda t_0 [e \mid \text{meet_her}(e)(w), \text{Agent}(e, I), \text{INCLUDES}(\text{Past}^*(\text{max.interval} < t_0)(t_0), e)]$

First, the representation in (11'') allows for the required interaction between the embedded tense and the matrix tense. Given the discussion in section 2, we expect the assertion time of the matrix tense to become the evaluation time for the relative past. But here some caution is called for.

A second motivation for the type-shift in (11'') can be found in recent approaches to the semantics of attitude verbs, which suggest that these intensionalised expressions are verbal quantifiers over worlds *and* times (cf. von Stechow, to appear). Von Stechow argues that the embedded proposition should not contain any deictic reference, since the subject of the embedded belief or statement could not possibly relate his attitude to the utterance time of the speaker. Although the past tense of the matrix in (11) says that the belief (or absence of doubt) is located in the past of the speaker's utterance time, the content of the attitude expressed is in no way related to the speaker's deictic *now*, hence the past perfect effect of the embedded proposition is rather indirect. This is a somewhat different argument for the λ -abstraction over t_0 in the complement.

By adopting the general principles of the temporal calculus, one realises that I have not been able to completely solve von Stechow's problem at this point. The assertion time of the matrix contains a free and truly deictic element t_0 , so the compositional procedure will still not enable us to get rid of all deictic elements in the embedded tense. The questions as to whether this problem is substantial and how it should be solved belong to a theory of attitude verbs rather than an account of relative past in Russian. Here I can merely suggest that the solution may be found in the semantics accorded to attitude verbs, perhaps, greatly simplified, along the lines of (13):

(13) $[[\text{ATT}_x]] = \lambda P \lambda t \lambda w$ such that for all t', w' which are compatible with the attitude (e.g. beliefs, statements) of x at t in w : $P(t')(w') = 1$.

By relating the semantic skeleton for attitude verbs in (13) to the representation of the embedded proposition in (11''), we arrive at the expression in (11'''), which is further reduced by inserting the assertion time parameter provided by the tense branch of the matrix.

(11''') $\lambda t \lambda w$ such that for all t', w' which are compatible with the beliefs of x at t in w :
 $[e \mid \text{meet_her}(e)(w'), \text{Agent}(e, I), \text{INCLUDES}(\text{Past}^*(\text{max.interval} < t')(t'), e)]$

The simplified analysis presented in this subsection calls for future research. While the analysis of attitude verbs remains unclear at this point (what is the exact nature of t' in (13)?), the data are clear enough. In Grønn 2004, I show that factual *IpF* frequently occurs in this setting, which is not surprising considering that Russian is a non-SOT language.

3.2 Contextual 'past perfect' readings

In the previous section, the evaluation time of the embedded verb was provided *intrasententially* through the semantics of the attitude verb in the matrix. A rather different, but also frequent phenomenon is exemplified below:

(14) Kak raz pered ètim ja čital knigu francuza [NN]. (Uppsala Corpus)
 PARTICLE once before this I read-PAST-IPF book of-Frenchman NN.
Just before this I had read a book by the French writer NN.

- (15) Kitajskij grossmejster ne byl dlja tebjja absoljutnoj zagadkoj, ved' ty uže vstrečalsja s nim v matče Rossija-Kitaj? (Internet)
Chinese grandmaster NEG be-PAST for you total enigma, since you already meet-PAST-IPF with him in match Russia-China?
The Chinese grandmaster was not completely unknown to you, as you had played him already in the Russia-China match?

In both cases above, complete events denoted by imperfective verbs (factual Ipf) are located prior to some other event/time which itself precedes the utterance time, cf. the past perfect in the English translations. Such data once more clearly demonstrate that past perfect readings in Russian are not limited to Pf and thus constitute a serious blow to Borik's "present perfect" analysis of factual Ipf.

What is going on here is quite obvious: the evaluation time for *vstrečalsja* 'met/played' in (15) is contextually given by the assertion time of the previous sentence. This could presumably be accounted for in terms of a presupposition in a DRT-framework, without the non-compositional flair of a covert relative past. The idea is then to find a suitable temporal antecedent for this evaluation time in the input context.⁷

This contextual past perfect reading differs from the data discussed in section 3.1 since no predicate abstraction (λ -abstraction) over the evaluation time is needed. In this respect, examples (14) and (15) pattern, in a certain sense, with a simple past interpretation. In both cases, the evaluation time is contextually given: either *anaphorically* (as in this section) or *deictically* (the evaluation time equals the utterance time). The emerging picture is reminiscent of a distinction in the domain of pronominal reference: A pronoun like "him" can refer either anaphorically or through deixis, and should be contrasted with the intrasentential anaphor "himself", which comes closer to the data in section 3.1. However, there is one more case of "himself" to be considered, that is the covert relative past ("himself") in the presence of imperfective morphology. This is the topic of the next subsection.

3.3 Restrictions on factual Ipf and a relative past

Once we admit the possibility of an optional relative past, the same procedure as in section 2 should in principle be available for Ipf as well, since relative tenses in general are not dependent on aspect. Technically, at least, there is no reason why the temporal calculus in (10) should not apply equally well to Ipf and Pf. However, the question of whether we really need this complicated architecture for Ipf in general, and factual Ipf in particular, is not so easy to answer. It is quite clear, though, that there are certain restrictions on the use of Ipf with a covert relative past, presumably due to competition with other <form,meaning>-pairs.

The main argument for a covert relative past is represented by the presence of certain temporal adverbials. Hard-core evidence for a covert relative past with factual Ipf would be the Russian equivalent of, say, the English construction in (16):

⁷ Due to the presence of adverbials like *uže* 'already' in (15) – an adverbial which apparently expresses a relation between times – the kind of LFs presented in Paslawska and von Stechow (2003) would seem to require a covert relative past also for (15), and perhaps also for (14). Recall that these authors argue on principled grounds that a relative past without a superordinate tense is unreasonable. However, the present account suggests some more fine-grained distinctions between relative past readings in Russian. At least, I am more reluctant to invoke a covert relative past in absence of temporal adverbials, that is, in cases where the past perfect reading arises solely from contextual factors.

(16) At 9 p.m. he had arrived one hour earlier.

The two adverbial expressions occur in the same sentence, which precludes the possibility of a shift in perspective from the interpretation of one temporal adverbial to another. The temporal calculus in (10) could capture the temporal configurations of a direct Russian translation of (16) by treating the equivalent of ‘at 9 p.m.’ as the frame time of the higher tense, and ‘one hour earlier’ as the frame time of the (covert) relative past.

However, it turns out that Russian does not easily accept the presence in a single sentence of two such temporal adverbials as in (16). The English sentence in question rather corresponds to the following Russian translation:

(16') On uže priexal_*pf* / priezžal_*ipf* za čas do 9-i.
He already come-PAST-PF / come-PAST-IPF in one-hour before 9
He came (already) one hour before 9 p.m.

In (16'), we are no longer dealing with a past perfect. The point is that the temporal adverbial *za čas do 9-i* ‘one hour before 9 p.m.’ cannot be split up and located in two different tenses as in (16). Hence, the adverbial in (16') simply provides the frame/assertion time for the event, i.e., the coming event is included in the interval corresponding to ‘8 p.m.’. Unlike the English sentence in (16), Russian cannot explicitly designate ‘9 p.m.’ as the evaluation time for the event.

Consider also the authentic example below:

(17) Na 15-om godu ja uže čital ‘Osnovy ximii’ Mendeleeva. (Internet)
In 15th year I already read-PAST-IPF ‘Foundations of-chemistry’ by-Mendeleev.
At the age of 14, I already read ‘The Foundations of Chemistry’ by Mendeleev.

This sentence does not seem to have a reading whereby the speaker *had read* ‘The Foundations of Chemistry’ *before* he turned 14, i.e. by the age of 14. It is worth noting that even the presence of *uže* ‘already’ is not enough to license a past perfect interpretation of this sentence containing an imperfective verb. The meaning of (17) can only be that the reading event took place at the interval corresponding to the speaker’s 15th year. A factual *IpF* reading is possible in this particular case due to the rather large frame adverbial. Apparently, temporal overlap between overt frame adverbials and the event time is strongly preferred in the case of *IpF* in Russian.

Finally, what happens if the context forces the interpolation of a covert relative past as the only conceivable interpretation? To answer this question, let us return to our initial example (7) with *Pf* and a covert relative past, and try to replace the perfective *vyigral* ‘won’ by an imperfective verb with an intended factual reading:

(18) Kogda Karpov stal čempionom mira, on uže vyigryval čempionat mira sredi junošej.
When Karpov become-PAST-PF champion of-world, he already win-PAST-IPF
championship of-world among juniors.
*When Karpov became world champion, he had already won the junior world
championships.*

The expected interpretation of (18) is a relative past where the ‘*kogda/when*-clause’ provides the evaluation time (right boundary) for the assertion time which enters the aspectual relation associated with the event of Karpov’s winning the junior world championships. However, this

factual Ipf reading is ruled out, presumably due to competition from the better candidate in (7).

Interestingly, however, despite the obligatory interpolation of a covert relative past and the blocking of factual Ipf, example (18) is still not ungrammatical: The imperfective *vyigryval* ‘won’ acquires an *iterative* reading in this context, corresponding to Karpov’s having won the junior world-championships repeatedly before winning the senior world-championships. Obviously, the temporal adverbial (the ‘kogda/when-clause’) cannot serve as the frame (assertion) time for a series of complete events. Hence, the whole past preceding the ‘kogda/when-clause’ becomes the assertion time for the iterative VP.

In general, an explicit punctual reference time will seek to become the assertion time of an imperfective verb (since Ipf on its *Hauptbedeutung* – the progressive – seeks such a time), and there is no need to invoke a relative past. But, as we have seen, an explicit reference time may become the evaluation time of a relative tense in two different cases: Either if the verbal predicate is perfective, in which case the inclusion relation is not compatible with an assertion time smaller than the event time; or if an imperfective verb has an iterative interpretation, which often requires a larger assertion time interval than what is provided by the overtly expressed reference time. In both these cases, the explicit reference time may end up as the evaluation time of the relative past. Apparently, the same reasoning doesn’t license factual Ipf in this temporal configuration since this particular imperfective reading (unlike iterative Ipf) emerges solely from competition with Pf.

4 Conclusion

The paper started out with the alleged present perfect readings of certain tense-aspect configurations in Russian. Since the evaluation time of a present perfect equals the utterance time, I argued that there is no need to formally distinguish between “simple past” and “present perfect” in Russian, a language which in any case lacks a morphological expression for perfect tenses.

Next, we looked at cases where the evaluation time is clearly different from the utterance time, giving rise to relative past interpretations. Our main focus was on complete event interpretations of Pf and Ipf, and a temporal calculus was developed to handle the different cases. Not surprisingly, the evaluation time can be *anaphoric* with a proper antecedent being reconstructed in the input context. Another well-known phenomenon is the frequent use in Russian of relative tense in embedded clauses. Also here, as expected, we encountered relative past readings of both Pf and Ipf. These cases, however, required a more involved formalisation with predicate abstraction over the evaluation time of the embedded tense.

Finally, we also looked at some peculiar contexts which could only be accounted for by assuming a covert relative past. Following Paslawska and von Stechow (2003), it was shown that Pf cooccurs with interpolation of a relative past in both future and past tense contexts. Once more, we had to invoke the principle of predicate abstraction over the evaluation time of the lower tense. But here the procedure is admittedly non-compositional inasmuch as the relative tense is not overtly expressed.

Concerning imperfective aspect, which has largely been overlooked in the literature on past perfect readings in Russian, we arrived at the tentative conclusion that past perfect interpretations of factual Ipf are only possible with an anaphoric evaluation time or in embedded contexts, where the evaluation time is provided by the matrix. Still, the imperfective itself is not ruled out in contexts which requires a covert relative past, due to the possibility of iterative interpretations of Ipf. This shows, after all, that (morphological) aspect is independent of the phenomenon of relative past, which is just what one expects given the

temporal calculus and unambiguous treatment of Pf defended in this paper. It was furthermore suggested that the restrictions concerning factual Ipf could be explained in terms of competition between aspectual form-meaning pairs in an optimality theoretic sense.

5 References

Borik, Ol'ga, 2002, *Aspect and reference time*, PhD thesis, Utrecht.

Grønn, Atle, 2004, *The Semantics and Pragmatics of the Russian Factual Imperfective*, dr. art. thesis, published in *Acta Humaniora*, vol. 199, Oslo, (available at: <http://folk.uio.no/atleg/index.disp.html>).

Heim, Irene and Angelika Kratzer, 1998, *Semantics in Generative Grammar*, Blackwell, Malden, Mass.

Klein, Wolfgang, 1995, "A Time-Relational Analysis of Russian Aspect", *Language*, 71, pp. 669-695.

Kratzer, Angelika, 1998, "More Structural Analogies Between Pronouns and Tenses", in *Proceedings of Semantics and Linguistic Theory VIII*, eds. D. Strolovitch and A. Lawson, pp. 92-110.

Paslawska, Alla and Arnim von Stechow, 2003, "Perfect Readings in Russian", in *Perfect explorations*, eds. A. Alexiadou, M. Rathert and A. von Stechow, Mouton de Gruyter, Berlin, pp. 307-362.

von Stechow, Arnim, 1995, "On the Proper Treatment of Tense", in *Proceedings of Semantics and Linguistic Theory V*, eds. T. Galloway and M. Simons, pp. 362-386.

von Stechow, Arnim, (to appear), "Interpretiertes Tempus: Temporale Orientierung von Modalen", *Neue Beiträge zur germanistischen Linguistik*.