

Chapter V

Russian aspect in terms of Reference time

In this chapter, I propose an analysis of Russian aspect based on the unified theory of R-time presented in the previous chapter. I will start by explaining the Russian system of tenses and showing its significance for aspectual issues: the tense system in Russian is aspectually constrained (section V.1). The constraint is the following: perfective forms in the non-past (present) tense cannot get the interpretation of progressive.

I will discuss some interpretations that perfective and imperfective forms in the non-past tense get in section V.1.1, but will mainly focus on direct, or *actual* uses of tenses (section V.1.1.2), i.e., the uses where a sentence with a given tense form is interpreted and evaluated with respect to the S-time.

Section V.2 provides some historical explanation of how the tenses in Russian have developed. A diachronic perspective also helps explaining the behaviour of the past tenses and of the auxiliary verb *byt’* ‘be’ in the periphrastic non-past tense in modern Russian.

In section V.3, the analysis of the tense/aspect system in Russian is developed in terms of the E-R-S relations as formulated in Reinhart’s (1986, 2000) proposal. The crucial idea is that the S-R relation, which determines perspective in Reinhart’s model, also determines aspectual differences in Russian (section V.3.2). Special attention is paid to the E-R relation and a progressive interpretation (section V.3.3), as well as to the relation determining tense morphology in Russian (section V.3.4). I conclude this chapter with a summary.

V.1. The tense system of Russian and its relevance to aspect

The tense system of modern Russian is aspectually constrained: the verbs in perfective aspect appear in two tense forms, whereas imperfective aspect allows for the derivation of three tense forms. In other words, there is a tense form in Russian in which perfectives do not appear. The full system of tenses is presented in Table V.1:

TABLE V.1: RUSSIAN TENSE FORMS

	IMPERFECTIVE	PERFECTIVE
past	čita- <i>l</i> read-sg.masc	pro-čita- <i>l</i> PF-read-sg.masc
non-past	čita- <i>et</i> read-3sg bud- <i>et</i> čitat' be-3sg read-INF	pro-čita- <i>et</i> PF-read-3sg

My basic claim here concerning the Russian tense system is that there is one main opposition in the domain of tense: past vs. non-past (Vinogradov 1947). It will become clear later on that there is not enough evidence for further classification of the non-past tense forms into present and future, neither from the morphological, nor from the semantic point of view. My assumption is directly supported by inflectional morphology, since in Table V.1, the forms in the past row and the forms in the non-past row(s) have identical inflection respectively. The inflectional morphology is italicised in the table.

The fact that the tense system in Russian is aspectually constrained will be crucially relevant for my analysis of Russian aspect. The asymmetry manifests itself in the derivation of non-past forms: in the imperfective aspect, two non-past tense forms can be derived, a simple (*čitaet*) and periphrastic (*budet čitat'*) form, whereas the perfective forms do not allow for the derivation of the periphrastic tense:

- (1) **budet pročitat'*
 be-pres.3sg PF-read

The interpretation of sentences with simple perfective forms ((2)a) crucially differs from the interpretation that sentences with simple imperfective forms ((2)b) receive:

- (2) a. Kogda pozvonila mama, Petja pročital knigu
 when PF-call-pst-sg.fem. mom, Peter PF-read-pst-sg.masc. book
 ‘When mom called, Peter had read a book’
 b. Kogda pozvonila mama, Petja čital knigu
 when PF-call-pst-sg.fem. mom, Peter read-IMP- pst-sg.masc. book
 ‘When mom called, Peter was reading a book’

In (2), different aspectual forms of the main verb (i.e. *(pro)čital* ‘(PF-)read-pst.sg.masc’) trigger different interpretations. (2)b is naturally interpreted as reporting on *temporally overlapping* eventualities: the phone rang while Peter was engaged in his reading. This is one of the main contexts for progressive in English. In (2)a, however, the interpretation is different: the eventualities are *temporally ordered*, i.e., the reading was finished by the time Peter’s mom called.

- (3) Čto ty sejčas delaesh? – Čitaju /*Pročitaju knigu
 what you now do-IMP-pres.3sg? Read-IMP-pres.1sg/*PF-read-pres.1sg
 book
'What are you doing now? – I am reading a book'

(3) shows that only the imperfective aspectual form can be used in an answer to the question ‘What are you doing now?’, perfective aspect is ungrammatical in this context. This is another canonical case where English uses the progressive.¹

This difference in the interpretation of perfective and imperfective simple non-past forms is very significant for my purposes. The analysis of the aspectual differences in Russian that I will propose later in this chapter derives this difference and this is the main reason why I do not adopt any of the comparable analyses of aspect previously proposed (see V.3.3 for details). From now on I will refer to the property of the perfective non-past forms that prevents their use in the typical progressive contexts such as (2) and (3) above as *the absence of the actual present interpretation*.

In the next subsection, I discuss the interpretation of all non-past tense forms in Russian in more detail.

V.1.1. The interpretation of the non-past tense forms in Russian

Let me start this subsection by showing that, as suggested by their morphology, the interpretation of the non-past forms does not provide solid grounds for distinguishing between a present and a future in the temporal system.

As I have already mentioned, all non-past forms in Russian show the same agreement morphology (table V.1). The non-past verb forms agree with the subject of a sentence in person and number, i.e. they show an agreement pattern familiar from many other languages. However, while the morpheme which brings about the past interpretation of the past forms, *-l-*, can be clearly distinguished, there is no special indicator of present or future tense in the non-past forms, the morphology that these forms have is just the person/number agreement inflection.²

The interpretation of the periphrastic imperfective forms is always future, similar to the English future tense with the auxiliary ‘shall/will’. The inflected form of the auxiliary *be* in Russian is present:³

¹ Some languages, e.g., Dutch can use simple present tense in the contexts of the English progressive. Dutch has a periphrastic (locative) construction that can be used to render the meaning of progressive, but the point is that simple present is also allowed in these cases:

(i) Wat doe je nu? – Ik ben aan het lezen/Ik lees een boek
 what do you now? – I am at DET read-INF/ I read a book
'What are you going now? – I'm reading a book'

² This is also a common feature of present tense morphology across languages.

³ I will always use *pres* (stands for ‘present’) in the glosses of all the non-past forms.

- (4) (Zavtra / skoro / segodnja) Petja budet čitat' lekciju v universitete
 (tomorrow/soon/today) Peter be-pres.3sg. read-INF lecture in university
'Peter will give a lecture at the university (tomorrow/soon/today)'

Simple non-past forms of both aspects can get a future interpretation, like in (5):

- (5) Petja zavtra/skoro/segodnja čitaet/pročitaet lekciju v universitete
 Peter tomorrow/soon/today read-IMP-pres.3sg/PF-read-pres.3sg. lecture in university
'Tomorrow, Peter is giving (will give) a lecture at the university'

Thus, the only correlation that can be established as far as the interpretational differences of non-past tense forms are concerned, is that the periphrastic tense cannot get a present interpretation. I will come back to this observation in section V.2.2 and show that there is a reason for this. Apart from this fact, there is no evidence to support a subdivision within non-past forms into (proper) present and (proper) future.

As (2) and (3) show, sentences with simple non-past imperfective forms can get the actual present interpretation. However, this is just one of the possible meanings of these tense forms. In the next two subsections, the uses of the simple non-past forms of the imperfective and perfective aspect will be compared. In this chapter, I will mainly concentrate on the actual present and future episodic readings. For the sake of completeness, however, I will first briefly discuss habitual/generic/iterative contexts which allow both imperfective and perfective verb forms and some other cases of alternation of aspects.

V.1.1.1. The contexts of aspectual alternations

In habitual/iterative contexts, the simple imperfective forms are always felicitous. In English, simple present tense is used in similar cases:

- (6) Petja čitaet lekcii v universitete
 Peter read-IMP-pres-3sg lectures in university
'Peter gives lectures (is a lecturer) at the university'
- (7) Každyj ponedel'nik Petja čitaet lekciju v universitete
 every Monday Peter read-IMP-pres-3sg lecture in university
'Every Monday Peter gives a lecture at the university'

It is harder to find perfective forms in habitual/iterative contexts. For instance, if the imperfective forms in both (6) and (7) are replaced with perfective ones, the examples become ungrammatical. However, perfective aspect is not always ruled out of the habitual/repetitive contexts:

- (8) Petja tebe vsegda pravdu skažet
 Peter you-DAT always truth PF-tell-pres.3sg
'Peter will always tell you the truth'
- (9) Každyj ponedel'nik on vstanet rano, svarit kofe,
 Every Monday he PF-get.up-pres.3sg. early, PF-cook-pres.3sg coffee,
 voz'met gazetu i sjadet na kuxne zavtrakat'.
 PF-take-pres.3sg. newspaper and PF-sit.down-pres.3sg on kitchen
 breakfast-INF
*'Every Monday he gets up early, makes himself coffee, takes a newspaper
 and stays in the kitchen to have breakfast'*
 (or *'Every Monday he will get up early, etc.'*)

Similarly to (8) and (9), descriptive sentences and statements of general truth sometimes allow free variation of perfective and imperfective forms:

- (10) a. Ėto takaja gazeta, v kotoroj vsë čto xočeš' napišut/pišut
 this such newspaper in which all what want-pres.2sg PF-write-
 pres.3pl/IMP-write-pres.3pl
'This is such a newspaper where anything can get published'
- b. Prošlogo ne verneš'
 past not PF-return-pres.2sg
'You can't bring the past back'

Finally, non-past perfective and imperfective forms can be used in 'historical' present. The use of present tense in the descriptions of past events is a well-known stylistic device which can be used in many languages, including English. The example in (11) below (taken from Forsyth, 1970:119) illustrates that perfective non-past forms are felicitous in descriptions given in the present tense, although imperfective forms are also allowed in this context:

- (11) V sentjabre na Belom more temneet rano, sumerki korotki,
 in September on White see get.dark-IMP-pres.3sg. early, twilight short,
 a noči aspidno-černy i xolodny. Vyrvetsja inogda pered
 and nights pitch-dark and cold. PF-break-pres.3sg sometimes before
 zakatom solnce iz oblakov, brosit poslednij ugasajuščij luč na more, na
 sunset sun from clouds, PF-throw-pres.3sg last dying-down ray on see, on
 xolmistyj bereg, želto otrazitsja v okoškax vysokix izb i
 hilly shore, yellow PF-reflect-pres.3sg in windows tall houses and
 tut že pobagroveet, spljuščitsja, ujdet v vodu.
 suddenly PF-turn.crimson-pres.3sg, PF-flatten-pres.3sg, PF-go-pres.3sg in
 water

*In September on the shores of the White Sea it gets dark early, the twilight
 is brief and the nights are pitch-black and cold. Sometimes the sun breaks*

through the clouds just before it sets, throws a last dying ray on the sea and the hilly shore, gives a yellow reflection from the windows of the tall wooden houses and instantly turns crimson, seems to be squashed, and disappears into the water.

I am not going to discuss the free alternation contexts in the present work, since I want to concentrate on the cases where the aspectual opposition is most clear. All the examples that have been presented in (6) through (11) are the typical contexts that allow for variation in the use of perfective or imperfective forms. I am not trying to suggest that the facts mentioned above are not important and should be ignored altogether. However, it seems to me even more important to concentrate on the clear-cut cases, like the actual present interpretation. In this case, if the context does not allow for any other reading, the difference between perfective and imperfective leads to different grammaticality results. This case, therefore, provides a good foundation for a theory of aspect. Let me now go back to the actual present interpretation ((2) and (3)), which interest me most.

V.1.1.2. The actual present interpretation

As has been pointed out earlier, the actual present is just one of the possible meanings of the imperfective non-past forms. This interpretation clearly involves a moment of speech, S-time. This is an important point, because the question of how temporal interpretation is established in Russian is a complicated one. Let me briefly explain why.

Russian tenses, even the past, which is usually considered to have clear semantics and strict interpretational rules, enjoy a certain freedom in use that not all languages allow for. In particular, the use of particular tense forms can be contextually justified, and there are cases when, for instance, past forms are not interpreted as semantically past (as in ‘before the S-time’):

- (12) Smotri, sejčas groza načnetsja, a nam i ukryt’sja negde. Vot i propali.
Look, now storm PF-begin-pres.3sg and we-DAT and PF-shelter-INF nowhere. Here and PF-lose-pst.pl
'Look, the storm is going to start any minute now and we won't find a shelter. Bad luck' (literally: we are lost)
- (13) Esli vy polučite tuza, vy vyigrali!
if you PF-get-pres.3sg ace, you-pl PF-win-pst.pl
'If you get an ace, you'll win' (literally: you won)

It happens even more often with the non-past forms. A classical example is the absence of any special rules for the sequence of tenses in complex sentences in Russian: the tenses are used in exactly the same way as in simple sentences. In the

Russian sentence in (14), for instance, the non-past perfective form has to be used to render the meaning of the English past anterior:

- (14) I togda Petja ponjal, čto ego uvoljat.
 And then Peter PF-understand-pst-sg.masc. that he-ACC PF-fire-pres.3pl
 'And then Peter realized that he would be fired'

Note that in English it is simply impossible to use the tenses that directly correspond to the Russian ones:

- (15) *And then Peter realized that he will be fired

I gave these examples to show that there are some cases in Russian when tenses are not semantically interpreted with respect to the S-time.⁴ Nevertheless, there are clear cases when the tense forms are used in their 'direct' meaning and do report on the eventualities that take place before or after a designated S-time. One of these cases is the actual present interpretation, which not only brings up the contrast between perfective and imperfective aspect, but also is one of the basic *actual* uses of the non-past tense. This is the main reason why I choose to concentrate primarily on the actual present interpretation of the non-past tense.

The availability of the interpretations for non-past tense forms of the perfective and imperfective aspect are schematised in (16):

	<u>SIMPLE NON-PAST FORMS</u>	
	IMPERFECTIVE	PERFECTIVE
<i>actual present</i>	+	-
<i>future</i>	+	+

On the basis of the facts presented so far, I formulate the following generalization about the interpretation of the non-past perfective forms:

- (17) GENERALIZATION V.1:
 Non-past perfective forms cannot get the actual present interpretation; they always trigger a future reading.

As Forsyth (1970) puts it, 'perfective present in the 'real'⁵ mode have almost exclusively future meaning' (Forsyth 1970:148). In the remainder of this section some apparent counterexamples to generalization V.1 will be discussed. These cases at first sight might undermine the value of this generalization, but I will explain why I think they should not be included in the empirical basis for my analysis. The examples that are most often cited in the literature (Vinogradov 1947, Forsyth 1970 and many others) can be classified into several classes.

⁴ Klein (1994) discusses similar issues at length.

⁵ I interpret 'real' in this quote as 'deictic', i.e. evaluated with respect to the S-time.

The first class consists of so-called performative verbs, i.e. verbs that refer to acts of speech. Consider (18):

- (18) Ja poprošu vas nemedlenno ujti
 i PF-ask-pres-1sg you-pl immediately leave
 ‘*I ask you to leave/I am asking you to leave immediately*’

Note that this class of verbs can be also used in the simple present in English with the actual present interpretation:

- (19) I ask you to leave immediately.

This case, therefore, is not specific for Russian.

The second class comprises the cases of use of non-past perfective forms that are licensed by adverbs like *suddenly*, *abruptly*, etc. This construction in Russian usually employs some special emphatic focus particles as well (cf. *kak* in (20)). Note also, that the ‘beginning’ verbs that were discussed in detail in chapter II, are very often used in this type of sentences:

- (20) Vdrug ona kak zaplačet!
 Suddenly she how PF-cry-pres-3sg.
 ‘*And now she starts crying all of a sudden*’

Finally, perfective non-past forms are often licensed in negated contexts:

- (21) a. Ja nikak ne najdu nužnuju ssylku
 i no.way not PF-find-pres.1sg needed reference
 ‘*I still can’t find the reference I need*’
 b. Vas i ne uznaeš'
 you-ACC and not PF-recognize-pres.2sg
 ‘*One wouldn’t recognize you (=you’ve changed a lot)*’

The examples in (18) through (21) together with the cases of free aspectual alternation discussed in the previous section are the most well-known apparent exceptions to generalization V.1. However, I am not going to consider these examples as a serious threat to (17), and I will now explain why.

First of all, I think it is useful to get rid of any complicating factors at the earlier stages of building up a theory of aspect, especially if the factors are so semantically loaded as negation and modality (as in, e.g., (21)). This is not meant to say that their contribution is not important and should not be considered by an aspectual theory, but how can we start accommodating the complex information provided by these factors into our theory if we do not explain the clearest cases first? The inability to capture the simplest, clear-cut contrast like the one in (2) and (3) in a regular way amounts to the absence of a theory, so that there is nothing that the

more complex data can be captured by. Thus, I think that a good starting point for a theory of aspect is an explanation of the contrast in the availability of the actual present interpretation for imperfective as opposed to perfective aspect as exemplified in (2) and (3). The foundation of a theory of aspect (or any other phenomenon of a comparable complexity, for that matter) should be built on solid facts that bring up the differences between perfective and imperfective. It is obvious that (2) and (3) explicitly show the contrast between two aspects. It is also clear that the interpretation of these two sentences is actual present. These examples illustrate what generalization V.1. is about, and I consider this generalization valid.

Another important observation is that the other cases presented above as counterexamples to the generalization V.1. are not specific to Russian, like (18) and (20). For instance, English simple present in general bans an actual present interpretation, but it can be used with performative verbs and is also licensed by adverbs like *suddenly*, as indicated by the English translation of (20). This suggests that there is an independent reason why the facts that are observed are such as they are. Consequently, an account of these phenomena should be given in more general terms, based on a crosslinguistic generalization, where the Russian facts would be just an example of yet another language supporting this generalization. A theory of Russian aspect should be able to allow for these cases, but it should not crucially rely on them.

Let me now conclude this section by a short summary. I distinguish the *actual* mode in the use of tenses, when a given tense form is interpreted with respect to the S-time. The *actual* present interpretation is one of the examples of the *actual* uses of tenses. For this mode, it is always the case that non-past perfective forms trigger future interpretation.

Thus, there are two essential properties of the Russian tense-aspect system that the rest of this chapter builds on:

- the Russian tense system relies on the opposition *past* vs. *non-past*;
- perfective non-past forms in Russian do not have the *actual present interpretation*.

In the next section the history of the Russian tense system will be discussed. I will show that the diachronic perspective, which is so often ignored, can partly reveal the logic of the tense-aspect system that modern Russian has and, moreover, can explain some very interesting facts that could not have been explained when viewed only from the synchronic point of view.

V.2. The history of the Russian tense system

In this diachronically oriented section, I will focus on two issues. The first one concerns the past tense forms in modern Russian as frozen participles. In section V.2.1, I am going to show how it came about. The relevance of this discussion for the proposal that I am going to make in section V.3 will become clearer when I discuss the configurations that I assign to the past tense forms in Russian:

semantically, they have an interpretation similar to past participles in the English present perfect (see section V.3.4).

Secondly, I will discuss the periphrastic non-past forms, in particular, the historical development of the forms of the verb *byti-byt'* ('be' in Old/modern Russian respectively). I will demonstrate that there is a reason to believe that the forms of 'be' in the periphrastic non-past tense used to be perfectives in Old Russian. This is the reason why they trigger a future interpretation: this effect is absolutely parallel to the meaning that ordinary perfective forms get in the non-past form. In modern Russian, however, the verb *byt'* 'be' appears to be aspectually unmarked, but the forms of *byt'* in the periphrastic non-past tense are used as the future auxiliary similar to *will* in English.

V.2.1 Where do the past forms come from?⁶

As I have already mentioned, the past forms in the modern Russian are 'frozen' participial forms, which, however, function as full-fledged past tense forms at least from the semantic viewpoint. The past tense morphology is manifested by the suffix *-l-*, which was originally employed for the formation of a special resultative participle in Old Russian. Before I say more about the past tense forms and their development, let me briefly illustrate the tense system in Old Russian and then focus on the past tenses.

Old Russian had seven tense forms and no aspectual constraints on tense formation, as illustrated in table V.2:⁷

⁶ The Old Russian data presented in this section and their interpretation are based on Avanesov (1982) and Gorškova & Haburgaev (1981).

⁷ The question of how the modern tense-aspect system was formed and, especially, how the aspectual opposition was developed in Russian is a complicated and unsolved problem. Avanesov (1982) fairly says that it can only be speculated on how the aspectual opposition emerged. He, for example, hypothesizes that the aspectual differences first became apparent in the present tense and then were transferred to the domain of past. I do not want to commit to any of the existing hypotheses here. The point, however, is that it is confirmed by documented evidence that at some stage, the system of Old Russian was such as I present it here. The period that the data come from varies from the 11th to the 14th century, depending on the source of the information.

TABLE V.2: OLD RUSSIAN TENSE FORMS
(exemplified on the verb *pisati* ‘to write’)

present	pišetъ write-IMP-pres.3sg	na-pišetъ PF-write-pres.3sg
future I [absolute]	budetъ pisati be-pres.3sg write-INF	budets na-pisati be-pres.3sg PF-write-INF
future II [relative]	budetъ pisalъ be-pres.3sg write-RES.PRT	budets na-pisalъ be-pres.3sg PF-write-RES.PRT
aorist	pisa write-aor.3sg	na-pisa PF-write-aor.3sg
imperfect	pisaše write-imp.3sg	na-pisaše PF-wirte-imp.3sg
past perfect	bě pisalъ be-aor.3sg write-RES.PRT bäše pisalъ be-imp.3sg write-RES.PRT estъ bylъ pisalъ be-pres.3sg be-RES.PRT write-RES.PRT.	bě na-pisalъ be-aor.3sg PF-write-RES.PRT bäše na-pisalъ be-imp.3sg PF-write-RES.PRT estъ bylъ na-pisalъ be-pres.3sg be-RES.PRT PF-write-RES.PRT.
pres.perfect	estъ pisalъ be-pres.3sg. write-RES.PRT	estъ na-pisalъ be-pres.3sg. PF-write-RES.PRT

The present tense forms, both perfective and imperfective, could get the meaning of both the ‘actual’ present, as opposed to modern Russian, and future. The future tense forms are discussed in the next section. Let me now concentrate on the past forms.

There were four past tenses in Old Russian. Imperfect and aorist were simple (i.e. non-periphrastic) tenses, derived by special inflectional morphology. They were not frequently used in Old Russian. Thus, imperfect tense was only found in literary texts and aorist was evidently the first tense form to disappear from the spoken language and only existed at the earlier stages (11th century). The uses of imperfect and aorist were mostly guided by the system of Old Church Slavonic: imperfect was used for descriptions in literary texts, aorist was used to report on sequences of events and used to function as a main tense in a story. Neither aorist nor imperfect seem to have been aspectually constrained: these tense forms were derived from both imperfective and perfective aspectual forms.⁸

The perfect tenses, both past and present, were not constrained by aspect either. Past perfect was a ‘relative’ tense in Old Russian, just like the relative future. The meaning of the past perfect was always to express ‘past in the past’, which is a

⁸ According to some statistics, in Old Church Slavonic 40% of all aorist tense forms were those with imperfective verb forms, whereas only 1% of all the imperfect tense uses were featuring the perfective verb forms. This might be due to the fact that the conditions under which the perfective imperfect would be used are really complex and are not usually met in the attested texts. The system of Old Russian is reminiscent of the one found in modern Bulgarian.

common meaning of this tense in the languages where it exists. Note that in Old Russian, the auxiliary in the past perfect could take *three* different tense forms itself. First of all, the auxiliary *byti* ('to be') could appear in both simple past tenses, i.e. aorist or imperfect, as illustrated in Table V.2 above. The third possibility was particular to Old Russian and consisted in using the auxiliary in the present perfect form, so that the resulting form would consist of the auxiliary in the present tense and two *-l*-participles:⁹

- (22) estъ byлъ pisalъ
 be-pres.3sg. be-RES.PRT write-RES.PRT

The present perfect was the most commonly used form in Old Russian, especially in the texts of non-literary registers, such as the 'colloquial' register, mostly reflecting spoken language, and business documents. Present perfect originally had a pure resultative meaning (Gorškova & Haburgaev 1981, Kuznecov 1959). Starting with the business documents dated by the 12th century, the use of the present perfect becomes more and more frequent. At the same time, the first cases appear of so-called auxiliary omission in the present perfect. At the beginning, it happened most often in contexts where a full subject NP was present¹⁰ or there was another tense form in the same sentence bearing the person agreement morphology. Thus, it seems that auxiliary omission was at first restricted to cases where the person feature, which would be shown by the missing auxiliary, could be successfully reconstructed from context.

Note that besides carrying the person agreement morphology in the present perfect, the auxiliary can have yet another function: it provides the connection to the present moment. This function is familiar from the semantics of present perfect in languages like English, where it still exists and is usually associated with precisely the resultative meaning, which is one of the possible meanings of the English present perfect. This meaning is particularly prominent in the case of sentences with telic predicates (Boogaart 1999), where it is asserted that the result state of an eventuality holds at the moment of utterance:

- (23) John has written his thesis → The thesis is written

The left part of (23) can be rephrased as in (24), where the resultative meaning is even clearer:

- (24) John (now) has the thesis written

⁹ It is plausible to suggest that this 'special' invention was the last resort that the language had to use when the simple tenses, aorist and imperfect, started to disappear. However, I was not able to study enough diachronic literature to find any evidence confirming or refuting this hypothesis and I will not pursue it here. Quite amazingly, these forms still exist in some of the Northern dialects of Russian, but they do not convey the meaning of the past perfect any longer: they simply refer to past.

¹⁰ Old Russian was a pro-drop language, modern Russian is not.

While in English some word order permutation has to be employed to promote this meaning, in the case of Dutch, it is one of the two possible meanings attributed to any sentence with the present perfect tense:¹¹

- (25) Ik heb het boek gebonden
 I have the book bound
 'I have bound the book'/'I have a bound copy of the book (now)'

Attempts to cancel the result state in English, at least in the case of the sentences with telic predicates are unsuccessful (Boogaart, 1999:139):

- (26) ?John has left, but he has come back later

Thus, the 'resultative' meaning of the present perfect, when it exists, is usually attributed to the presence of an auxiliary verb: its present tense form indicates that the result state should hold at the moment of utterance.¹²

As for Old Russian and the development of its tense system, it seems plausible to suggest that with the gradual loss of the auxiliary in the present perfect tense forms, the connection to the present moment, as well as the resultative meaning of the whole tense form, was lost. There was no formal element in the sentence to express the requirement for the result state that it holds at S-time. In modern Russian, what is left of the present perfect form is the *-l-* participle only and it has past interpretation, its essential meaning is to report on an eventuality that occurred in the past. Imagine that the same happened in English, then instead of (27)a and all the other past forms, English would have only (27)b:

- (27) a. John has seen this movie
 b. John seen this movie

The development of the present perfect in Old Russian fits nicely into the general scheme of the diachronic development of this tense cross-linguistically (cf. Boogaart 1999:134-135 and the literature cited therein), which is given in (28) below:

- (28) RESULTATIVE < PERFECT < PERFECTIVE < PAST

¹¹ As Maaike Schoorlemmer (p.c.) pointed out to me, this can only be the case when the participle is sentence-final. Thus, in (i) the pure resultative meaning is blocked, the sentence can only mean '*I have bound a book*', i.e. has an eventive interpretation:

(i) Jan weet dat ik het boek heb gebonden
 Jan knows that I the book have bound

The ambiguity becomes apparent only in subordinate clauses, where the word order permutation *aux-participle/participle-aux* becomes possible.

¹² There is an interesting difference between present perfect in Dutch and English. The Dutch present perfect, unlike English, does not seem to have a clear resultative meaning. In fact, present perfect in Dutch comes closer to the meaning of perfective aspect in Russian, whereas present perfect in English should rather be compared to the imperfective aspect (see section V.3.6)

Abstracting away from the intermediate levels in (28),¹³ focus on the edges of this scheme: from the diachronic perspective, the hypothesis that the original resultative meaning of present perfect in Old Russian transformed into the meaning of simple past is theoretically well founded and supported by the data.

In modern Russian, there are no other past forms available than the ‘leftovers’ of what used to be present (or past) perfect: the *-l*-participles. This also explains why, although they function as full-fledged past forms semantically, they still exhibit the participial agreement pattern: the past tense forms in modern Russian agree with the subject of a sentence in number and, if the number is singular, in gender. There is no person agreement feature in the past tense in Russian, the auxiliary that used to bear this feature disappeared. Along with the auxiliary, the connection to the S-time and the resultative meaning of the former present perfect vanished as well.

Having explained the history of the past tense forms from Table V.1, I will now turn to the non-past tense forms in Russian, in particular, the periphrastic forms, and try to explain their behaviour.

V.2.2. The non-past forms

As was illustrated in Table V.2, Old Russian had two periphrastic future forms, one with an infinitive (absolute future) and another one with a resultative *-l*-participle, traditionally called *relative future* in Russian historical grammars.

The relative future forms used to express ‘past’ with respect to the other future (i.e., future anterior), and were derived by the auxiliary *byti* (‘to be’) and the past resultative *-l*-participle. The participle showed number-gender agreement and the auxiliary agreed with the subject of a sentence in person and number. The forms of the relative future were most often used in conditional if-clauses (Avanesov 1982:112):

- (29) Ože budetъ ubilъ, platiti tako
 if be-pres.3sg PF-kill-RES.PRT-sg.masc. pay-INF so
‘If (one) kills somebody, this is the way one will pay for it’

The meaning of precedence with respect to another eventuality is logically related to the semantic contribution of the *-l*-participle. Gradually, the participle became so strongly associated with the pure past interpretation, that, consequently, the forms of relative future were sometimes used referring to the past, as was deduced from the contexts where these forms were used in written documents. According to the

¹³ Boogaart argues that the semantics of the result is always compatible with, but does not constitute the general meaning of the present perfect. This means that the resultative is a prominent, but not an exclusive meaning of the present perfect. Therefore, the denotation of ‘perfect’ in this scheme is wider than the denotation of ‘resultative’. Moreover, Boogaart’s interpretation of the perfective differs from mine, this is why I do not want to consider the intermediate phases of (28).

documented evidence, these forms were no longer used in Russian after the 17th century.¹⁴

The second periphrastic form, which is referred to as ‘absolute future’ in Table V.2, has survived and is still used in modern Russian. The only difference is that in Old Russian, it was possible to use more auxiliary verbs to derive these forms:

- (30) хо́четь / по́чнеть / има́ть / буде́ть веда́ти
want-pres.3sg / begin-pres.3sg / have-pres.3sg / be-pres.3sg know-INF

Later, all these verbs except for *byt'/byti* ‘be’, developed their own lexical meanings and were not used in the process of tense formation anymore. The auxiliary verb *byti* is what I want to focus on here.

There is some diachronic evidence that the forms of *byt'* (‘to be’) that are used in the periphrastic non-past tense in modern Russian used to be perfective. Modern Russian does not provide any evidence for classifying these forms as aspectually perfective. However, the future interpretation of periphrastic tense forms is fully determined by the auxiliary verb. If these forms of auxiliary were perfective in Old Russian, then their interpretation patterns with the interpretation of other perfectives in non-past: the combination of the perfective aspect and a non-past tense always leads to the future interpretation.¹⁵

It has been argued that historically, the forms with the stem *bud-* of *byt'* ‘be’ used to be perfectives (Junghanns 1997, van Schooneveld 1951). Compare the full paradigm of *byti*, the Old Russian ‘be’, in (31) with a quite deficient paradigm of its modern counterpart in (32):

- (31) present tense of *byti* ‘to be’ in Old Russian:

	imperfective			perfective		
	sg	pl	dual	sg	pl	dual
1st	есмъ	есмъ	есвѣ	буду	будемъ	будевѣ
2nd	еси	есте	еста	будеши	будете	будета
3rd	естъ	сутъ	еста	будетъ	будутъ	будета

As this table illustrates, *byti* ‘be’ in Old Russian, as any other verb, had both perfective and imperfective forms. In modern Russian, we find the following system:

¹⁴ However, they still exist in some other Slavic languages, e.g., Polish, although apparently they totally lost the ‘relative’ (with respect to another future eventuality) part of the meaning and just refer to future.

¹⁵ I will provide an explanation for this phenomenon in V.3.4.

- (32) Present tense of *byt'* ‘to be’ in modern Russian

	(imperfective)		(perfective)	
	sg	pl	sg	pl
1 st person	Ø	Ø	budu	budem
2 nd person	Ø	Ø	budeš'	budete
3 rd person	[est']	[sut']	budet	budut

This table shows that many of the forms of *byt'* that existed in Old Russian are not used any more. I put *imperfective* and *perfective* in parentheses because synchronically, *byt'* is not aspectually marked. However, it can be seen quite clearly whether the existing forms of *byt'* in modern Russian stem from perfective or imperfective forms of the Old Russian *byti*.

In the imperfective column, there are only two forms left from the full paradigm of Old Russian. Their use is very limited in Russian, hence, they are given in square brackets in table (32). Although morphologically both ‘imperfective’ forms are 3rd person, they can be used in many syntactic contexts which require a verb form in 1st or 2nd person. But the number of contexts these forms are used in is very restricted. They can function as a copula ((33)a,b), where both forms, especially the 3rd plural form *sut'*, are always stylistically marked¹⁶, in existential ((33)c) and possessive ((33)d) constructions:

- (33) a. Éto (i) est' moja stat'ja
 this (and) is my paper
 ‘(And) here is my paper’/‘This is, actually, my paper’
 b. Slony sut' mlekopitajusčie
 elephants are mammals
 ‘Elephants are mammals’
 c. V sadu est' jabloni
 in garden is apple-trees
 ‘There are apple trees in the garden’
 d. U menja est' sobaka
 at me-GEN is dog
 ‘I have a dog’

The existing ‘perfective’ forms of *byt'* can be used without any stylistic effects as a copula ((34)a) or as an auxiliary in periphrastic future ((34)b) and periphrastic passive ((34)c):

¹⁶ In general, Russian does not use overt copulas in the present tense, only in the past:

(i) Moj brat враč
 my brother doctor
 ‘My brother is a doctor’
 (ii) Moj brat byl враč/vраčom
 my brother was doctor-NOM/INSTR
 ‘My brother was a doctor’

- (34) a. Ja budu vračom
 i be-pres-1sg. doctor-INSTR
 ‘*I will be a doctor*’
- b. Ja budu čitat’ ‘Vojnu i mir’
 i be-pres-1sg. read ‘War and Peace’
 ‘*I will read ‘War and Peace*’
- c. Statja budet napisana v ponedel’nik
 paper be-pres-3sg. written in Monday
 ‘*The paper will be written on Monday*’

In all the examples in (34), the forms of *byt'* bring in the future interpretation of a sentence.

As has already been mentioned, it is very difficult to establish the aspectual value of the verb *byt'* in modern Russian. There seems to be a conflict between its interpretational properties and its use. The interpretation of the forms of *byt'*, as I said before, is always future in the non-past tense, which indicates its perfective character. However, some tests were provided in chapter II, which help us classify the verb forms into perfective and imperfective. According to these tests, *byt'* is an imperfective verb:

- (35) a. Prodolžaj byt' poslušnym!
 continue-IMPER be-INF obidient
 ‘*Continue to be obedient!*’
- b. Prodolžaj čitat' / *pročitat' knigu!
 continue-IMPER read-IMP/*PF-read book
 ‘*Continue to read a book!*’
- (36) a. buduščij *budennyj
 be-PAP-masc.sg. be-PPP-masc.sg.
 b. *pročitajuščij pročitannyj
 PF-read-PAP-masc.sc.PF-read-PPP-masc.sg

(35)a illustrates that *byt'* patterns with the imperfective form *čitat'* ‘read’ and can appear in the complement position of a phase verb. In contrast, the perfective form *pročitat'* ‘PF-read’ is ungrammatical in this context ((35)b). As for the participle formation, *byt'* quite successfully derives a present active participle and bans the formation of the past passive participle ((36)a), unlike the perfective *pročitat'*, which behaves the other way around ((36)b).

The empirical data point to the conclusion that in modern Russian the infinitive *byt'* is imperfective, which means unmarked for aspect. But the interpretation of some forms of *byt'* suggest that there may be still some Old Russian ‘aspectual’ heritage present. My hypothesis is that the forms of *byt'* with the *bud-* stem were, indeed, perfectives in Old Russian and therefore acquired future meaning in the non-past forms. Due to this fact, they could develop into a *future auxiliary* verb, which is their status in modern Russian. Thus, the *bud-* stems in modern language function

exactly like the auxiliary *will* in English. This explains the interpretation of all the examples in (34).¹⁷

Let me sum up the results that have been achieved thus far. The chapter started out with an observation that the tense system in modern Russian is aspectually constrained (table V.1) in the domain of non-past tense formation. In particular, imperfectives derive two non-past tense forms, perfectives only one. I have also assumed the basic division in the tense domain into past and non-past (or present). The observed correlation between tense and aspect in Russian has been and will be one of the main topics of the present chapter.

It has further been shown that in the *actual* temporal interpretation, i.e. the interpretation connected to the S-time, the perfective non-past forms always get future meaning (section V.1.1 and the generalization in (17)). This statement can be rephrased as follows: the combination of perfective aspect and non-past tense in Russian gives rise to the future interpretation. Thus, possible variations in the interpretation of the non-past forms are fully determined by aspect. It has been shown how the auxiliary *byt* ‘be’ in the periphrastic non-past tense has developed its future meaning. The diachronic evidence suggests, that this development was also conditioned by aspectual properties of the Old Russian verb *byti* ‘be’ (section V.2.2).

As for the past tense, I have shown that, from the diachronic perspective, the past forms in Russian are frozen participle, semantically functioning like true past forms. It was explained how they came into existence in section V.2.1.

On this empirical basis, I will develop in the next section a theory of Russian aspect based on the temporal model, namely, Reinhart’s system of E-R-S relations and the notion of R-time, discussed at length in the previous chapter. It will be demonstrated that this theory accounts for the absence of the actual present interpretation with perfective non-past forms.

¹⁷ Note that if *byt* in modern Russian is imperfective, then it should, in principle, be possible to form a periphrastic tense form of this verb. However, (i) is ungrammatical.

(i) **budu byt*
be-pres.1sg. be
(I) will be'

Maaike Schoorlemmer (p.c.) pointed out to me that a similar phenomenon occurs in Dutch. In principle, Dutch allows for auxiliary ‘chains’, like in (ii). However, it is impossible to repeat the same auxiliary twice, although all the other combinations (i.e. combinations of different auxiliaries) are grammatical, as in (iii):

(ii) **Ik zal zullen werken*
I will will work
**Ik kan niet kunnen werken*
I can not can work
**Ik hoeft niet hoeven te werken*
I need not need to work
(iii) *Ik zal moeten/kunnen/niet hoeven werken*
I will must/can/need to work
Ik zal alles kunnen/moeten/hoeven
I will everything can/must/need

The Dutch data do not offer an explanation for Russian, but the observed facts suggest that we are dealing with a phenomenon of a rather general character. There should be an independent reason providing a basis for the account of these facts.

V.3. Aspect in terms of R-S.

In this section I am going to apply Reinhart's theory of R-time presented in chapter IV to the Russian data and show that the aspectual differences in Russian can be accounted for in terms of the S-R relation, as defined in Reinhart (1986, 2000). But let me recapitulate first what the basics of this system are.

Reinhart's system of S-R-E relations is repeated in (37) below.

- (37) the E-R relation is fixed, i.e. $E \subseteq R$ by DEF.3;
- the S-E relation determines the truth conditions and the temporal interpretation of a sentence;
- the S-R relation determines perspective and morphological tense.

This system, as I have already pointed out in chapter IV, was developed for English. In this section I will show that some relations do not exactly match the relevant phenomena in Russian, but the necessary changes will be easily accommodated into the system in (37) without causing it any irreparable damage.

To give a full summary of the results of chapter IV, let me also repeat the main definitions. In IV.3.1, I defined telic and atelic predicates as follows:

- DEF.1:** For all $P, I, x_1, x_2, \dots x_n$, a predicate $P(x_1, x_2, \dots x_n, I)$ is atelic iff
 $P(x_1, x_2, \dots x_n, I) \& \exists I' \subset I (P(x_1, x_2, \dots x_n, I'))$
- DEF.2:** For all $P, I, x_1, x_2, \dots x_n$, a predicate $P(x_1, x_2, \dots x_n, I)$ is telic iff
 $P(x_1, x_2, \dots x_n, I) \& \forall I' \subseteq I (P(x_1, x_2, \dots x_n, I') \rightarrow I' = I)$

And, finally, the E-R relation is captured by the following definition:

- DEF. 3:**
- a. E(ventuality) time:
If P is an n -ary predicate and $x_1, x_2, \dots x_n$ are its arguments, then
any interval I , such that $P(x_1, x_2, \dots x_n, I)$ (informally: P holds at
 I) is called *predication time* and labelled E(ventuality time).
 - b. $E \subseteq R$:
 $\exists R, \exists I$ such that $P(x_1, x_2, \dots x_n, I) \& I \subseteq R$

The theoretical foundation does not vary from language to language. The theory that is going to be developed for Russian aspect in the present chapter rests on the same basic assumptions and definitions.

The remainder of this chapter is organized as follows. In the next two subsections, Russian data will be implemented into Reinhart's system in a direct and straightforward way. This application will lead to the formulation of the preliminary definitions of (im)perfectivity, DEF.4' and DEF.5' in section V.3.2. The absence of the actual present interpretation with non-past perfective forms can be derived already at this 'preliminary' stage.

In the following subsections I will go through each relation in (37), like I did in the previous chapter, and examine and motivate the changes (if any) in the preliminary definitions forced by each relation. I will also discuss various implications of Reinhart's analysis for the Russian data and suggest reanalysing one of the basic relations in (37) in section V.3.4. In the last subsection, I discuss some consequences and predictions of the proposed analysis.

V.3.1. An exercise

Suppose we just have a basic model in (37), where S, R and E are represented as temporal intervals and the E-R relation is fixed, i.e. $E \subseteq R$. Assume further that there are no additional operations and no specific data to analyse. What I would like to do now is to compute all possible relations that can be established between S, R and E in this simplified model.

Since we are working with temporal intervals, there are two basic relations that can be established: overlap and precedence.¹⁸ In order to be able to speak about a precedence relation, one should make sure that the intersection between two intervals is empty, i.e. there is no overlap. If two intervals overlap, no strict precedence relation for the entire (as opposed to parts of the) intervals can be established. Thus, the first thing to look at in each case is the intersection between a pair of intervals, and, if it is empty, to determine the precedence relation between these intervals.

The default configuration $[_R E]$ ¹⁹ always obtains. In terms of interval semantics, since it is always the case that R contains E, R and E obviously overlap and there can be no precedence relation established between them.

The relation between R and E being fixed,²⁰ we can now look at the possibilities that arise when S-interval comes into the picture. As for the relation between R and S, there are two options at this point: either the relevant intersection is empty or not:

$$(38) \quad \text{a. } S \cap R = \emptyset \quad \text{or} \quad \text{b. } S \cap R \neq \emptyset \text{ (schematically: } [_R S])^{21}$$

In the case of (38)a, we can establish a precedence relation between S and R immediately. Since E is included in R (DEF.3), the relevant order of E and S follows automatically from the relevant order of R and S:²²

$$(39) \quad \text{a. } S < [_R E] \quad \text{or} \quad \text{b. } [_R E] < S$$

¹⁸ Two intervals can also coincide or one can contain the other, but for now I will regard these cases as a special (stronger) cases of intersection.

¹⁹ This notation was introduced in section IV.3 as a shorthand for $E \subseteq R$, see DEF.3.

²⁰ Unless, of course, the progressive operator applies. More will be said on the progressive in the context of Russian in V.3.3.

²¹ This notation was explained in section IV.3.2.3. Here, I just repeat that S in the diagram stands for a subinterval of R included in R.

²² I underline only the 'final' configurations, with all the possible relations established.

If the intersection between S and R is not empty ((38)b), then we can look at the relation between E and S. There are, again, two logical possibilities: either S and E overlap ((40)) or they do not:

$$(40) \quad [\underline{R} \ S \cap E]$$

If the S and E intervals do not overlap, a precedence relation can be established between them ‘inside’ R:

$$(41) \quad \text{a. } [\underline{R} \ S < E] \quad \text{or} \quad \text{b. } [\underline{R} \ E < S]$$

In the case of (40), there are no other possibilities left: in this configuration all the temporal intervals (i.e. S, R and E) overlap.

For a formally oriented reader, the representations in (39)/(41) are written in logical terms below:

$$(42) \quad (\text{corresponds to (39)}): \quad \begin{array}{ll} \text{a. } E \subseteq R \ \& \ S < R \\ \text{b. } E \subseteq R \ \& \ R < S \end{array}$$

$$(43) \quad (\text{corresponds to (40)}): \quad E \subseteq R \ \& \ S \cap R \neq \emptyset \ \& \ S \cap E \neq \emptyset$$

$$(44) \quad (\text{corresponds to (41)}): \quad \begin{array}{ll} \text{a. } E \subseteq R \ \& \ S \cap R \neq \emptyset \ \& \ S < E \\ \text{b. } E \subseteq R \ \& \ S \cap R \neq \emptyset \ \& \ E < S \end{array}$$

Five possible configurations obtain as a result of this exercise. I present them in (45):

$$(45) \quad \begin{array}{ll} \text{a. } S < [\underline{R} \ E] & \text{b. } [\underline{R} \ E] < S \\ \text{c. } [\underline{R} \ S \cap E] & \\ \text{d. } [\underline{R} \ S < E] & \text{e. } [\underline{R} \ E < S] \end{array}$$

But S, R and E are not just *any* temporal intervals, they stand for the meaningful notions of Reinhart’s theory of temporal relations given in (37) above. The next step is to investigate the empirical value of (45). Putting aside the question of how the English tenses fit into (45) for the moment, let me immediately turn to Russian. The reason for doing this exercise will become clear once the data are introduced, because the number of tense forms in Russian corresponds exactly to the number of the representations in (45).

V.3.2. The data

I would like to start this section by presenting a slightly modified version of table V.1, which illustrates the system of Russian tense and aspect forms, to let the order suggest how the forms will be linked to the representations in (45):

TABLE V.1': RUSSIAN TENSE FORMS

	NON-PAST	PAST
PF	pročita-et read-3sg	pročita-l read-sg.masc
IMP	čita-et read-3sg	čita-l read-sg.masc
	bud-et čitat' be-3sg read-INF	

Now I will try to assign each form from Table V.1 a configuration from (45), establishing thereby an isomorphic relation between the set of configurations in (45) and the set of the Russian tense-aspect forms.

All the correspondences can actually be drawn on the basis of just one relation in (37), i.e., the one between E and S, which determines temporal interpretation. As has already been said, the eventuality described in a sentence is interpreted as occurring before the S-time if $E < S$. There are two past forms in Russian, perfective and imperfective, which in their canonical uses give rise to a past temporal interpretation and, correspondingly, there are two configurations in (45)b,c containing $E < S$:

- (46) a. $[_R E] < S$
 b. $[_R E < S]$

Moreover, as I argued in section V.1.2, only imperfective non-past simple forms can get an actual present interpretation, which is determined by an overlap between the time at which an eventuality occurs, i.e. E-interval and the S-time (i.e. $S \cap E \neq \emptyset$). There is only one configuration in (45) where the S-time overlaps the E-time, namely, (45)c, and this configuration must be assigned to the imperfective simple non-past tense forms:

- (47) $[_R S \cap E]$

The remaining two configurations in (45)a and (45)d are those, which give rise to a future interpretation:

- (48) a. $S < [R E]$
 b. $[R S < E]$

Accordingly, there are exactly two forms in Table V.1 which have future interpretation: the imperfective periphrastic and the perfective simple non-past forms.

The established correlations are, indeed, correct, since they predict the right temporal interpretations for the Russian tense/aspect forms. Recall that in Reinhart's system, temporal interpretation is established on the basis of the relative order of the S and E intervals. If E precedes S, then the past temporal interpretation arises, the reversed order corresponds to a future interpretation. This is the case with the configurations in (46) and (48) respectively. The 'intermediate' (47) is associated with a present temporal interpretation, since this is the only case where S and E overlap. It also corresponds to the present temporal configuration derived in Reinhart's system (see section IV.3 for details).

V.3.2.1 S-R as the aspectual relation

The main question that remains to be answered is which relation determines aspect. By now enough material has been presented to deduce the 'aspectual' relation.

It is reasonable to start the deduction with an unambiguous case, i.e. a temporal configuration where only one of the two aspects can occur. (45)c/(47) is such a configuration.

Given that the representation in (47) corresponds to imperfective aspect only, there should be a part of it that is common to all imperfective configurations, with both past ((46)) and future ((48)) interpretations. Note further that aspect cannot be determined by the same relation as temporal interpretation, i.e. the E-S relation, because both perfective and imperfective forms get past and future interpretations. These two observations leave only one logical possibility: the relation determining aspectual differences in Russian is S-R.

This is, indeed, the only possible option. Given that the E-R relation is fixed in this system and the E-S relation determines temporal interpretation, the only option left in the inventory is the relation between S and R. Thus, the result of doing the exercise in section V.3.1 and the implementation of data in the present section is formulated in (49):

- (49) Aspectual differences in Russian are determined by the S-R relation

Let me now go back to the configuration in (47). Given (49) and the fact that the present temporal interpretation is established on the basis of the overlap between the S and E intervals, we have to conclude that the aspectual value of a form which corresponds to (47) is determined by an overlap of S and R intervals. In Russian, only simple *imperfective* non-past forms can get this interpretation. Therefore, I

conclude that imperfective aspect arises if and only if S and R overlap, i.e. imperfective results from $S \cap R \neq \emptyset$.²³

It follows that perfective aspect results when the intersection between the S and R intervals is empty, i.e., $S \cap R = \emptyset$. Note further, that if E is always included in R, S and R do not overlap. It follows then that E and S do not overlap either. Thus, E can either precede or follow S. This gives us only two possible temporal interpretations for perfective aspect, namely, past and future. This result is empirically correct: perfective forms can get either past or future interpretation.

Now the full system of correlations between the Russian tense/aspect forms in Table V.1 and the set of temporal configurations in (45) can be presented:

(50) TABLE V.3: THE INTERPRETATION OF THE RUSSIAN TENSE/ASPECT SYSTEM

	<i>IMPERFECTIVE</i> $S \cap R \neq \emptyset$	<i>PERFECTIVE</i> $S \cap R = \emptyset$
past $E < S$	čita-l ‘read-sg.masc’ [_R $E < S$]	pro-čita-l ‘PF-read-sg.masc’ [_R $E] < S$
actual present $S \cap E \neq \emptyset$	čita-et ‘read-3sg’ [_R $S \cap E \neq \emptyset$]	-----
future $S < E$	bud-et čitat’ ‘be-3sg read-INF’ [_R $S < E$]	pro-čita-et ‘PF-read-3sg’ $S < [R E]$

Note that the leftmost column in TABLE V.3 lists the possible *interpretations*, not the morphological tenses as in the Russian tables given earlier. I postpone a detailed discussion of morphological tense in Russian until section V.3.4.

The preliminary definitions of perfectivity and imperfectivity can now be formulated as follows:

DEF.4': Perfective aspect in Russian corresponds to the configuration
 $S \cap R = \emptyset$

DEF.5': Imperfective aspect in Russian corresponds to the absence of perfective configuration, i.e., $\neg(S \cap R = \emptyset)$ or $S \cap R \neq \emptyset$

Aspectual differences in Russian are determined by the S-R relation, the same relation that defines *perspective* in Reinhart's (1986, 2000) theory of R-time. Since the notion of Reference time is involved in the definition of (im)perfectivity given above, aspect in Russian and, more generally, perfective/imperfective type of aspectual distinctions similar to the Russian ones can be referred to as *Reference time aspect* or *perspective aspect*.

²³ This is a correct, but preliminary result. One more condition for determining aspect will be added in the next section.

However, this is not the end of the story, and the definitions I just gave are preliminary. It is for a good reason that some room for possible revisions has been reserved. The skeptical reader, who has kept track of all the things that I have promised to account for, may already have a question (or several) in mind. One of them is definitely about the relation between the English progressive and the Russian imperfective.

It has already been mentioned that progressive in English always corresponds to imperfective in Russian and there is nothing in my definitions now that explains this correlation. In Reinhart's model, progressive is defined as an operation that yields the reverse inclusion relation between R and E. This definition is adopted from the DRT approach, as was pointed out in chapter IV. However, the E-R relation is not a part of either DEF.4' or DEF.5'. Since the progressive-imperfective correlation is an important empirical fact, I will next discuss it in detail.

V.3.3. E-R, progressive and imperfective

In the preceding section, I argued that the crucial relation for determining aspectual differences in Russian is the one between S- and R-intervals. Given that the default relation between E and R in this model is $E \sqsubseteq R$ and since there are no special conditions in DEF.4' or DEF.5' imposed on this relation, the configuration $E \sqsubseteq R$ remains the same for both perfective and imperfective aspect. This, however, leaves the correlation between progressive and imperfective unexplained. Given that there exists a different approach that attempts to define aspect in Russian directly in terms of the relation between E and R, this is a good place to examine this alternative.

Several attempts have been made in the literature (Klein 1995, Schoorlemmer 1995, Yadroff 1997, Arefiev 1998) to define aspect directly in terms of the E-R relation. There are two directions that this general line of reasoning takes. One is comparable to the early DRT framework (Hinrichs 1981, Partee 1984) in focusing on the inclusion relation between E and R. Another one is based on Reichenbach's formulation of tenses. In the next sections, I will discuss both of them and argue that the aspectual differences in Russian cannot be determined by the E-R relation alone. In what follows, I will pay more attention to the imperfective aspect when it comes to the correlation with the English progressive.

V.3.3.1. Aspect in terms of E-R. Episode I: inclusion relation

The first possibility is to formulate the relevant definitions in terms of the inclusion relation between the E- and the R-intervals. This approach is similar to both DRT approach and Reinhart's theory adopted here. In particular, if different inclusion relations are formulated for E and R, there is a way to keep the definition of progressive exactly the same as in the present work.

Timberlake (1985) critically examines a potential analysis that would assign the Russian imperfective exactly the same configuration as the English progressive, namely, (51)a, whereas perfectivity would be characterized as in (51)b:

- (51) a. imperfective $\equiv R \subset (\text{or } \subseteq) E$
 b. perfective $\equiv E \subseteq R$

A general problem with such an approach would be to account for all the non-progressive readings that the imperfective sentences can get.²⁴ As Timberlake points out, if the definitions in (51) are assumed, then there is no principled way to explain the difference between the examples in (52)a and (52)b.²⁵

- (52) a. Uznav o bolezni Aleksandra Andreeviča, ja poexala v Moskvu i
 PF-learn-ger. about illness A. A., I PF-go-pst.sg.masc. in Moscow and
 ostalas' tam do ego vyzdorovlenija
 PF-remain-pst.sg.fem. there until his recovery
 b. Uznav o bolezni Aleksandra Andreeviča, ja poexala v Moskvu i
 PF-learn-ger. about illness A. A., I PF-go-pst.sg.masc. in Moscow and
 ostavalas' tam do ego vyzdorovlenija
 remain-**IMP**-pst.sg.fem. there until his recovery
 ‘*On learning about the illness of Alexandre Andreevič, I went to Moscow and remained there until his recovery*’

Consider the use of the verb *remain* in both sentences. In (52)a, the perfective form of the verb is used, whereas (52)b features the imperfective *remain*. Crucially, both examples allow for the interpretation when the eventuality described by ‘remain in Moscow’ does *not* extend beyond the designated period of time, delimited by “*do ego vyzdorovlenija*” (until his recovery).²⁶ Timberlake assumes that this temporal delimiting expression denotes the R-time, in which case the representation of both perfective and imperfective sentences should be the same, i.e. $E \subseteq R$.

What is not mentioned in Timberlake’s paper is that the eventuality described by the *remain*-clause can also hold beyond the period of time delimited by *until his recovery*.²⁷ This observation makes the situation even worse, because then both perfectivity and imperfectivity can be assigned the assumed ‘imperfective’ configuration $R \subset E$, as well as the ‘perfective’ $E \subseteq R$, depending on some extra contextual information, which helps to pick the right reading. However, if the $R \subset E$ relation also expresses progressive, it follows that the perfective sentences in

²⁴ Smith’ (1997) analysis is based on essentially the same idea. I have discussed Smith’ approach in section III.2.1.

²⁵ These are examples from Timberlake (1985:160-161), but I modified them slightly for the sake of uniformity. I can assure the reader that the changes do not influence the argument.

²⁶ In Timberlake’s own words, ‘the stative event of remaining extends from the reference time of the previous perfective event (the arrival in Moscow) until the patient’s recovery’ (Timberlake, 1985:161).

²⁷ The perfective *ostalas'* (remain-pst.sg.fem) behaves like the *po-* and *pro-* perfectives, discussed in chapter II, i.e. it has the properties of atelicity.

Russian can, in principle, also get the progressive interpretation. This prediction is empirically incorrect. In this case, more needs to be said in order to exclude the progressive interpretation with perfectives.

Note, however, that if Reinhart's distinction between the temporal interpretation and the tense morphology is maintained, as in the present thesis, then it becomes impossible to exclude a progressive interpretation for non-past perfective forms if aspectual differences are defined in terms of E-R.

In Reinhart's model, temporal interpretation is determined by the S-E relation, morphological tense by the S-R relation. For the issue under consideration here, i.e. the absence of the actual present *interpretation* with perfectives, it is the first relation, i.e. S-E that matters. In Reinhart's system, the S-interval and the E-interval have to overlap in order to give rise to the actual present interpretation.

If the analysis of aspect is given in terms of the inclusion relation ((51)), it appears to be impossible to exclude the actual present interpretation of perfectives without any further assumptions anyway. Given an overlap between S and R, which is required to get the present tense morphology, and E being included in R, nothing can rule out the configuration where S and E also overlap, although it does not necessarily have to be the case. If E and S can overlap, then, in principle, perfectives are predicted to be able to get the actual present interpretation. I therefore conclude that the differences between perfective and imperfective in Russian cannot be reduced to just a reverse inclusion relation between R and E.

V.3.3.2. Aspect in terms of E-R. Episode II: precedence relation

In some analyses of temporal relations (e.g., Hornstein 1990) developing and elaborating on Reichenbach's original system, it was explicitly argued that there are two 'direct' relations between three Reichenbachian variables, S, R and E, that should be considered in a temporal model: S-R and E-R. S-time on this view does not directly relate to the E-time, their relation is always mediated by the R-time. The S-R relation gives temporal interpretation and/or morphological tenses: past, present and future. The E-R relation is employed to distinguish between perfect and non-perfect tenses in English, as in Reichenbach's proposal (see section IV.1). A reasonable hypothesis that comes to mind is that in the absence of complex (i.e., perfect) tenses in Russian, the E-R relation defines aspect. If, moreover, an analysis along these lines also assumes that the same relation, i.e. E-R, determines progressive in English, which is usually the case, it may open another possibility to account for the progressive-imperfective correlation in a rather straightforward way. This is what Schoorlemmer (1995) and Yadroff (1997) opt for. Schoorlemmer (1995:245) explicitly defines perfective aspect as (53):

- (53) Perfective verbs always occur in a temporal configuration where E and R are distinct

In terms of interval semantics, (53) above is stated as (54):

$$(54) \quad E \cap R = \emptyset$$

Accordingly, imperfective is non-perfective aspect:

$$(55) \quad \text{imperfective} \equiv E, R / E \cap R \neq \emptyset$$

What I am going to show now is that the definition in (53) makes a wrong prediction concerning the interpretation of the sentences with perfective forms in the past tense. Assuming (53), the prediction about past perfective sentences is that they can obtain the interpretation of either present perfect ((56)a) or past perfect ((56)b) in English:

$$(56) \quad \begin{array}{l} a. E _ R, S \\ b. E _ R _ S \end{array}$$

Consider now the Russian example in (57)a. The relevant English translations for this sentence, as Schoorlemmer (1995:240) argues, could use either present or past perfect ((57)b or (57)c), but not simple past ((57)d):

$$(57) \quad \begin{array}{l} a. \text{Bandity ubili Vanju} \\ \text{bandits killed-PF Vanja-ACC} \\ \text{'The bandits have/had killed Vanja'} \\ b. E _ R, S \\ c. E _ R _ S \\ d. *E, R _ S \end{array}$$

For a simple sentence given in isolation, however, it is difficult to judge which tense form is appropriate in the English translation. However, consider a complex sentence in (58):

$$(58) \quad \begin{array}{l} \text{Petja ušel domoj kogda pozvonila mama} \\ \text{Peter PF-go-pst.sg.masc. home when PF-call-pst.sg.fem. mom} \\ \text{'Peter went home when(=after) his mom called'} \\ \text{'Peter had gone home when (=by the time) his mom called'} \end{array}$$

The interpretation that the perfective verb form in the main clause gets (i.e. *Petja ušel domoj...* ‘Peter went home...’) is ambiguous between simple past and past perfect, as I specified in the translations. Subordinate *when*-clauses bring out this ambiguity very clearly and the important point is that the perfective form in the main clause *can* be translated into the simple past tense in English. The whole sentence in (58) is interpreted as reporting on two eventualities that occurred one after another, but one can never be sure about the exact order. Either Peter went home before his mother called him, in which case the most precise English translation for the

sentence uses the past perfect tense, or the order was reversed. If Peter's going home temporally followed his mother's call, the English translation requires the use of the simple past tense for the main clause in (58). This result is clearly incompatible with the definition in (53)/(54), at least on the standard interpretation of the English simple past tense.

Given the fact that the Russian past perfective sentences can get the reading which corresponds to the English simple past, the definition in (53) cannot be correct, since in the configuration of the simple past, R and E have to coincide.²⁸ Moreover, it is impossible to get the present perfect interpretation (cf. (56)a) for the main clause in (58), contrary to another prediction that (53) makes.

To sum up, I have argued that the E-R relation cannot be taken to determine the aspectual differences in Russian. If the definition of (im)perfectivity makes use of different inclusion relations between E and R, it becomes impossible to state the difference between (52)a and (52)b. If the definition is based on the non-overlap of E and R, the analysis makes the wrong predictions concerning the interpretation of past perfectives (example (58)).

Even though my general conclusion is that aspect in Russian cannot be determined solely by the E-R relation, in Reinhart's model this relation determines the progressive interpretation, which is, given the progressive/imperfective correlation, important for defining aspect in Russian. In what follows, I suggest a way of modifying the preliminary definitions for (im)perfectivity, DEF.4' and DEF.5' from section V.3.2, in such a way that the progressive correlation is accounted for.

V.3.3.3. Episode III: Implementation of the progressive-imperfective correlation

Recall that in Reinhart (1986/2000) follows the DRT tradition in assuming that the E-R relation determines progressive in English. In particular, progressive is always associated with configuration $R \subseteq E$, which means that the R-time interval is contained in the E-time interval. There is a correlation between the English progressive and the Russian imperfective:

- (59) The meaning of the English progressive is *always* rendered in Russian by imperfective aspect.

This correlation is the reason why the E-R relation is very important for the discussion of Russian aspect. Note that (59) is a one-way correlation: the Russian imperfective can, but *does not have to* be translated into the English progressive.

In Reinhart's system, progressive is viewed as a special operator that reverses the default inclusion relation between E and R:

²⁸ Or, in terms of intervals, the intersection between R and E intervals has to be non-empty.

$$(60) \quad \text{PROG}: E \subseteq R \rightarrow R \subseteq E$$

I adopt this definition in the present work (see the discussion in section IV.3.3.1), which means that the Russian imperfective should be defined in such way that the progressive configuration (i.e. $R \subseteq E$) is part of (or derivable from) the definition of imperfectivity. It is easy to see that the preliminary DEF.5' does not make any predictions concerning the E-R relation:

DEF.5': Imperfective aspect in Russian corresponds to the absence of perfective configuration, i.e., $\neg(S \cap R = \emptyset)$ or $S \cap R \neq \emptyset$

There is yet another problem with DEF.4' and DEF.5'. If they are adopted in the first version, the analysis based on these definitions does not exclude the possibility for past perfectives to have a progressive interpretation. The English progressive *uniformly*, i.e. past progressive included, corresponds to imperfective aspect. Given the definition of progressive in (60), in the combination with the past tense configuration, i.e. $R < S$, we obtain (61):²⁹

$$(61) \quad R \subseteq E \& R < S$$

This states $R < S$, predicting perfective aspect, which always occurs when R and S -intervals do not overlap, according to DEF.4'.³⁰ This is obviously an undesirable result. Perfective sentences can never be interpreted as progressive. In the non-past tense this amounts to the claim I have defended earlier: the perfective non-past forms cannot get the actual present interpretation. Note that in order to account for the absence of the actual present interpretation with perfectives, DEF.4' suffices (cf. sections V.3.1 and V.3.2), but (61), nevertheless, predicts perfective aspect for the past progressive configuration, which is never the case in reality.

In the light of these observations, I suggest the following revision of the preliminary definitions. I propose to introduce another requirement into the definition of perfective aspect, namely, the requirement that E has to be included in R , in order to exclude the progressive interpretation of perfective aspect in all tenses. This revision is exclusively motivated by the imperfective-progressive correlation. A modified definition of perfectivity is given below:

DEF.4: Perfective aspect in Russian is defined by the configuration
 $S \cap R = \emptyset \& E \subseteq R$

Now to the definition of imperfectivity. As the preliminary definitions already suggest, I follow the view on the Russian aspect that does not define both aspects

²⁹ A more formal representation of past progressive was given in section IV.3.3.1.

³⁰ Note that if an additional requirement was postulated, i.e. $E \cap S = \emptyset$, it would not help at all, because the perfective configuration requires R and S intervals not to overlap and this requirement is explicitly stated in (61).

independently. In the present theory, I define imperfective aspect as non-perfective. On this view, perfectivity is defined in terms of having a certain property, while imperfectivity is associated with *not* having it.

The definition of perfectivity, DEF.4, is a conjunction of two requirements, which means that in order to obtain the perfective aspect both conditions have to be met. Imperfective aspect, if defined as non-perfective, is just an external negation of the perfectivity condition, i.e. $\neg(S \cap R = \emptyset \ \& \ E \subseteq R)$. Since this condition is given as a conjunction, it entails that whenever at least one of the conditions is not met (which is the logical negation of the conjunction), imperfective aspect results. The definition of imperfective aspect now looks like follows:

DEF.5: Imperfective aspect is defined as non-perfective, i.e.
 $\neg(S \cap R = \emptyset \ \& \ E \subseteq R)$, namely $S \cap R \neq \emptyset \vee E \not\subseteq R$

It is quite obvious now that the ‘progressive’ configuration, i.e. $R \subseteq E$, is obtained only if one of the perfectivity conditions, namely, the one that requires E to be included in R , fails. Therefore, the perfective aspect can never emerge with the progressive configuration. This successfully captures the correlation between progressive and imperfective. Note also that the imperfective aspect is not exclusively associated with progressive, it can also result whenever the S and the R intervals overlap.

In Reinhart’s model, the S-R relation determines morphological tense (section IV.3.2.3). Past tense is determined by the condition $R < S$. This condition states that the R and S intervals do not overlap and R precedes S . For the theory of aspect in Russian based on DEF.4 and DEF.5, this means that one of the perfectivity conditions, i.e. $S \cap R = \emptyset$, is always met when the tense morphology is past, according to Reinhart’s definition.

Consequently, the only possible way to have imperfective aspect in the past tense is to reverse the default E-R relation, violating the other perfectivity condition, namely, $E \subseteq R$. In this case, however, the prediction is that imperfective past forms always have the meaning of progressive. This, in turn, means that under DEF.5, imperfective aspect is now predicted to have only a progressive reading in the past tense. The modified definitions for (im)perfectivity seem to reverse the problem which I pointed out for the preliminary definitions: if the correlation between progressive and imperfective in the past tense was not derivable in the latter, the former now predict the equivalence between progressive and imperfective in the past tense, not just a one-way correlation, as in (59).

A solution to this problem will be provided in the next section, after the Russian tense morphology and the relation that determines it have been discussed. I will argue that there is an independent reason to assume that tense morphology in Russian is not determined by the S-R relation, like in English, but by the relative position of E and S and show that this solves the problem with the progressive/imperfective in the past tense. Note that this move does not undermine the validity of Reinhart’s system: her ‘tense morphology’ relation was established

on empirical observations coming from languages like English and was not a logical requirement of the system.

V.3.4. Tense morphology in Russian

Let me start this section by repeating the part of Reinhart's system presented in chapter IV, which is going to be relevant for the present discussion. It concerns the difference between temporal interpretation and morphological tense.

The S-E relation in Reinhart's system for English is employed to establish the temporal interpretation of a sentence,³¹ whereas the relation between S and R determines tense morphology. To briefly repeat the reasoning here, the sentences in both (62)a and (62)b refer to the eventualities that occurred in the past (i.e. prior to the S-time), hence have the same temporal interpretation, but the finite verb form in (62)a carries the past tense morphology, whereas the tense of the inflected verb in (62)b is present. From these facts, Reinhart concludes that different relations should be employed to determine the temporal interpretation of a sentence on the one hand, and the morphological tense of a finite verb, on the other.

- (62) a. John ate breakfast $[_R E] < S$
 b. John has already eaten breakfast $[_R E < S]$

The representations of (62)a and (62)b reflect the fact that the described eventuality occurred in the past by stating that $E < S$, while the difference in tense morphology is captured by the S-R relation. Thus, the past tense morphology is always represented by $S < R$ ((62)a), whereas in the case of the morphological present tense, the S- and R-intervals overlap ((62)b). Note that the only element of the sentence in (62)b that can bring about the past interpretation ($E < S$) is a participle.

Consider now the analogous Russian examples:

- (63) a. Petja zavtrakal
 Peter breakfast-IMP-pst.sg.masc.
 b. Petja po-zavtrakal
 Peter PF-breakfast-pst.sg.masc.
 'Peter had breakfast'

Both sentences in (63) have a past temporal interpretation, i.e. they both report on an eventuality that took place prior to the S-time³². The verb forms used in these examples are aspectually different. This in itself suggests that the relations determining temporal interpretation and aspect should be different.

³¹ And also the truth-conditions of a sentence, but, as I said in chapter IV, I will not discuss the truth-conditional issues in this thesis.

³² Which does not necessarily entail that the eventualities have to terminate before the S-time. See section V.3.5 for the explanation of why not.

There is no reason to assume that the temporal interpretation in Russian should be determined by a different relation than the temporal interpretation in English. In fact, the temporal interpretation relation should intuitively be the most stable thing crosslinguistically. In the absence of any motivation to change this condition, I will keep Reinhart's proposal concerning the E-S relation as determining the temporal interpretation of a sentence intact. This means that the aspectual relation is not E-S.³³ The analysis of aspect developed in the previous section states that aspect in Russian is determined by both the S-R and the E-R relations, but crucially not E-S. Abstracting away from the progressive reading, I will keep the E-R relation stable, i.e., E is always included in R, and ignore it for the time being for the sake of simplicity.

So far so good, but the relation determining the tense morphology in Russian is still to be established. Suppose we just follow Reinhart's proposal and assume that in Russian, tense morphology is determined by the S-R relation just like in English. In other words, both aspect and morphological tense are determined by one and the same relation. This would make the following prediction: all the verb forms of one aspect, say, imperfective, should always show the same tense morphology, while the forms of the other aspect, i.e. perfective, should always show some other tense morphology, different from the imperfective forms, but constant within the class of perfectives.

It is easy to see that the situation that I just described has nothing to do with the real facts found in Russian. Thus, both perfective and imperfective forms can occur in both past and non-past tenses, carrying the same (i.e., past or non-past) tense inflection. This was shown in Table V.1 at the beginning of this chapter. This definitely points to the conclusion is that the S-R relation cannot determine morphological tense in Russian.

As was already pointed out in section V.1, modern Russian has just two morphological tenses, past and non-past. Whenever a finite verb in a Russian sentence has past tense morphology, i.e. *-l-* (see table V.1), the sentence also has past temporal interpretation. This suggests that the relation that determines temporal interpretation should also determine morphological tense in Russian. In other words, whenever (64) obtains, a corresponding Russian sentence is interpreted as past and the finite verb carries the past tense inflection:

- (64) E < S: past (temporal interpretation and tense morphology)

Note that there is an additional piece of evidence that this is really what is going on in Russian. In section V.1.1, I have shown that the Russian past tense forms are frozen participles. I gave an example in (27), repeated below, with the intention to illustrate what would happen in English if it were subject to the same historical processes that occurred in Russian:

³³ The reasoning here should be familiar from section V.3.2.1, where it was argued that aspect cannot be determined by the same relation as temporal interpretation.

- (65) a. John has seen this movie
b. John seen this movie

Instead of (65)a, English speakers would always have to use the (65)b. This suggests that the semantic contribution of the past forms in Russian, which used to be participles, can be compared to the contribution of the past participles in the English present perfect tense. As I have mentioned in connection with example (62)b, the only element in that sentence which brings about the past interpretation (i.e., E < S) is the past participle.

Now let me briefly discuss the non-past forms in Russian and, once again, address the issue of the apparent discrepancy between the tense morphology, which is always the same in all non-past forms, and the temporal interpretation that sentences with the non-past forms can obtain, which can be either present or future.

First of all, given that non-past morphology is underdetermined with respect to the present/future distinction, both present and future temporal interpretations should be compatible with the non-past forms. Secondly, as was discussed in section V.3.2, the interpretational restrictions of the non-past tense forms are imposed by aspect. The non-past morphology/interpretation configurations are given in (66):

- (66) configurations for non-past tense:
a. $E \cap S \neq \emptyset$
b. $S < E$

When combined with the perfective configuration in (67), the only representation that can be derived without arriving at a contradiction is (68), i.e. the combination of (66)b, which corresponds to the future interpretation, and (67):

- (67) perfective: $R \cap S = \emptyset$
 (68) $R \cap S = \emptyset$ & $S < E$ non-past + perfective

The combination of (66)a and (67) is ruled out, because (66)a requires the E and S intervals to overlap, but the perfective configuration requires the intersection of S and R, which, in turn, contains E, be empty. This is a contradiction, because the E interval cannot simultaneously overlap and precede S.

But if (66)a is combined with the imperfective aspect configuration in (69), there are two possible derivations, (70)a and (70)b. The former gives the (actual) present interpretation, the latter is for the future interpretation, and both options can be successfully realized with imperfective forms.

- (69) imperfective: $R \cap S \neq \emptyset$
 (70) a. $R \cap S \neq \emptyset \ \& \ E \cap S \neq \emptyset$ non-past + imperfective
 b. $R \cap S \neq \emptyset \ \& \ S < E$

Note that in (50) in section V.3.2.1, there were two forms with a future interpretation, one of the perfective and one of the imperfective aspect, and only one imperfective form with a present temporal interpretation. This is also the result obtained here, in (68) and (70).

To conclude this section, let me readdress the past imperfective problem, as was promised at the end of the previous section. There, it was explained that a prediction made on the basis of DEF.5 was that imperfective past forms always give rise to a progressive reading. This is an incorrect prediction. This prediction, however, was made on the old assumption that tense morphology in Russian is determined by the same relation as tense morphology in English, i.e. S-R. As has been argued in this section, this idea cannot be maintained. If, however, tense morphology is determined by the S-E relation in Russian, as I have just proposed, the 'past imperfective problem' disappears. The reason is that now DEF.5 does not predict that R<S should be a necessary part of the representation of past imperfective sentences. The relevant configuration for this type of sentences now consists of two parts, (71)a and (71)b:

- (71) a. $S \cap R \neq \emptyset \vee E \not\subseteq R$ imperfective aspect, DEF.5
 b. $E < S$ past tense morphology & past interpretation

Depending on which part of (71)a holds, there are two possible representations for past imperfective sentences. If in (71)a the first imperfectivity condition is met, i.e., $S \cap R \neq \emptyset$, then the configuration for past imperfective is (72)a. If the second condition of (71)a holds, which amounts to saying that the E-R inclusion relation is reversed so that $R \subseteq E$ is obtained, then the resulting interpretation of past imperfective is (72)b:

- (72) a. $\exists E \exists R \exists S (E \subseteq R \wedge E < S \wedge S \cap R \neq \emptyset)$
 b. $\exists E \exists R \exists S (R \subset E \wedge E < S \wedge R < S)$

(72)a is basically the same configuration as the one for the English present perfect (cf. (57) in chapter IV), whereas (72)b is the representation of the English past progressive ((60) in chapter IV). What is important to emphasize now is the fact that the past imperfectives in Russian are predicted to have two possible interpretations: the one of the English present perfect and the one of the English progressive. The latter comes as no surprise, while more needs to be said about the former. I will do so in section V.3.6.2.

Let me conclude the present section with a summary of what I have done so far.

Rinhart's system of E-R-S relations represented in (37) has been applied to the Russian data. As a result of this application, the aspectual differences in Russian are now analysed in terms of the S-R relation. Importantly, this was not *stipulated*, but *derived* in the process of consistent implementation of Russian data into the system in sections V.3.1 and V.3.2. One property of the perfective non-past forms was crucially employed in the analysis: the absence of the actual present interpretation. I

have also shown, that because of the progressive correlation (59), the E-R relation is also important for defining the aspectual differences in Russian. In section V.3.3, having discussed all the relevant facts, I formulated the definitions of perfective and imperfective aspect in Russian, DEF.4 and DEF.5, repeated below:

DEF.4: Perfective aspect in Russian is defined by the configuration
 $S \cap R = \emptyset \ \& \ E \subseteq R$

DEF.5: Imperfective aspect is defined as non-perfective, i.e.
 $\neg(S \cap R = \emptyset \ \& \ E \subseteq R)$, namely, $S \cap R \neq \emptyset \ \vee \ E \not\subseteq R$

Finally, in the present section I have argued that the tense morphology in Russian is determined by the E-S relation, whereas in English it is determined by the S-R.

To sum up, the system of the E-R-S relations for Russian looks like this:

(73) RUSSIAN:

- the E-R relation is fixed by DEF.3 of the R-time
- the S-E relation determines temporal interpretation *and* morphological tense in Russian
- the S-R relation is crucial in determining aspect, the E-R relation contributes to the aspectual system because it derives progressive

The next section is entirely devoted to the S-R relation.

V.3.5. S-R: Perspective, telicity revisited.

In Reinhart's model, the S-R relation, apart from establishing morphological tense of the finite verb, also determines perspective. Let me, once again, bring up the contrast between the English simple past and present perfect tenses here:

- (74) a. John ate breakfast [R E] < S
 b. John has already eaten breakfast [R E < S]

It is important to emphasize at this point that the contrast between (74)a and (74)b is that the eventuality of John's eating breakfast in the present perfect sentence is perceived as *relevant* for the present, whereas no such connotation arises in the simple past sentence. The notion of relevance is intuitive and, therefore, rather difficult to deal with. One of the results of Reinhart's theory is that it gives an explicit formalization of the relevant intuition in terms of R-time and, at the same time, preserves the essential insight of Reichenbach (1947), concerning the relative position of the R-time and the S-time in the present perfect configuration.

Another term that Reinhart uses as a synonym for 'relevance' in this context is *perspective*. The latter may sound very dear to the heart of somebody who is familiar with the issues of Slavic aspect, because one of the most prominent

characterizations of the aspectual differences in Russian (or even more broadly, in Slavic) was formulated in terms of ‘point of view’, which I take to mean the same as perspective.³⁴

Although this material was presented in more detail in section III.1, let me briefly repeat the main points here. There are two ways of phrasing the idea of describing aspectual differences as the differences in viewpoint found in the aspectual literature, both of which can be regarded as (informal) attempts at defining perfective aspect: perfective aspect views a situation ‘in totality’ (e.g., Filip (1993)) or ‘from outside’ (e.g., Comrie (1976)).

As for the former, I argued at length in chapter III why the notion ‘totality’ cannot be applied directly to eventualities. I don’t see how the notion of totality can be used in a way that would not be confused with the expression ‘totality of a situation/eventuality’, even if some other entity is characterized as ‘total’.³⁵ Therefore, I adopt the intuitive characterization of aspect given in Comrie (1976:4), repeated here from chapter III:

“... the perfective looks at the situation from outside..., whereas the imperfective looks at the situation from inside...”

There is one crucial difference: unlike Comrie, I will formalize the notion of viewpoint in terms of R-time.

One observation concerning Comrie’s description is that when talking about perspective (and I take the expressions ‘from outside/inside’ to be descriptions of perspective), the presence of a speaker is, in some form, required, because it is ‘position’ of the speaker that in principle determines perspective or viewpoint. A viewpoint cannot exist independently, just by itself, it has to be someone’s viewpoint. It is the speaker who chooses a way to convey the relevant information, hence, it is the speaker who determines the perspective. In temporal models, particularly, in the one adopted in the present work, the position of a speaker is best associated with the S-time, which is where the speaker is, so to say, located.

Another observation is that the perspective can be *internal* (‘from inside’) or *external* (‘from outside’). But these terms do not make much sense if it is not stated internal/external with respect to what. Thus, Comrie’s description requires to determine a domain of observation or ‘looking’, so to speak.

Following Reinhart (1986, 2000), I propose that the properties of R-time reflect the speaker’s view on an eventuality: a speaker can acquire an internal view on an eventuality only if there is a certain domain which includes *both* a relevant eventuality *and* the speaker’s position, i.e. S-time. A perspective from *within* the R-time domain provides an internal viewpoint. Thus, *internal* here means ‘within the same domain’.

According to Reinhart, it is a non-empty intersection between the S- and the R-intervals that determines an internal perspective. Due to the DEF.3, the $E \subseteq R$

³⁴ ‘View’ is also a literal translation of the Russian term for aspect, *vid*.

³⁵ Klein (1995) makes a similar point.

configuration is always guaranteed unless the progressive operator applies to change this relation.

Thus, the configuration $S \cap R \neq \emptyset$ reflects the speaker's internal point of view on a situation, consequently bringing up the notion of relevance for the speaker,³⁶ and the notion of internal perspective. This configuration is always obtained with present perfect in English and imperfective in Russian.

For perfective aspect in Russian, associated with an external perspective or an 'outside' point of view, the relevant configuration is $S \cap R = \emptyset$. Once again, the S-R relation, which determines perspective in Reinhart's system, also determines aspectual differences in Russian, hereby capturing the intuition of the 'view from inside/outside' and I have just explained how.

Let me point out that now Klein's (1994) criticism of the 'inside/outside point of view' approach to Russian aspect loses ground, because the main objection that Klein puts forward is that the approach uses only metaphorical descriptions without any attempt for any formalization. I have just provided a formalization of the notion of perspective.

There is one more important point of the analysis that I propose. It concerns the inferences that different kinds of predicates license in past tense sentences. In chapter II, I argued that there is no correspondence between (im)perfectiviy and (a)telicity: both perfective and imperfective predicates can be telic or atelic. As was shown in chapter IV, Reinhart's model allows for a strict separation between telicity, which is viewed as a property of predicates only, on the one hand, and the temporal interpretation of sentences and all the phenomena connected to it, on the other hand. Note that in this chapter, I have not changed any of the basic assumptions and definitions formulated in chapter IV, so that the properties of the model itself remain the same. In fact, the only change that I have made adjusting Reinhart's system to the Russian data concerned the locus of morphological tense: while in Reinhart's proposal for English it is determined by the S-R relation, in my analysis of Russian it is given by the relation between S and E. Now let me illustrate that the telicity facts in Russian work the same way as in English. For the sake of uniformity, I will use examples with perfective verb forms:

- (75) a. Petja pro-sidel v tjur'me do starosti
 Peter PF-sit-pst.sg.masc in prison till old.age
 '*Peter was in prison until he was old*'
- b. Petja pro-čital 'Vojnu i mir' za dva dnja
 Peter PF-read-pst.sg.masc. 'War and Peace' in two days
 '*Peter read 'War and Peace' in two days*'

The temporal structure of both sentences is the same and consists of the combination of the past and perfective configurations:

- (76) $\exists E, \exists R, \exists S (P(x_1, x_2, \dots x_n, E) \& E \subseteq R \& E < S \& S \cap R = \emptyset)$

³⁶ After all, it is a speaker's opinion that the situation is relevant for the present.

Note that (76) entails that R precedes S, since R contains E, which is before S and the intersection of R and S is empty.

(75)a is a sentence with an atelic predicate³⁷ (see chapter II), (75)b has a telic predicate. I repeat here the definitions of R-time and (a)telicity. As stated in IV.3, I assume that a temporal argument ' I' is always a part of a verb's argument structure.

DEF.1: For all $P, I, x_1, x_2, \dots x_n$, a predicate $P(x_1, x_2, \dots x_n, I)$ is atelic iff

$$P(x_1, x_2, \dots x_n, I) \& \exists I' \subset I (P(x_1, x_2, \dots x_n, I'))$$

DEF.2: For all $P, I, x_1, x_2, \dots x_n$, a predicate $P(x_1, x_2, \dots x_n, I)$ is telic iff

$$P(x_1, x_2, \dots x_n, I) \& \forall I' \subseteq I (P(x_1, x_2, \dots x_n, I') \rightarrow I' = I)$$

My reasoning about the Russian sentences in (75) is going to be exactly the same as in the explanation of the difference between telic/atelic predicates in English in IV.3.2.3.

If a predicate is atelic (as in (75)a), then it holds of a certain interval I and at least one of its subintervals I' (DEF.1). The interval I itself can also be a subinterval of yet another interval, I'' , and still, a predicate would hold of I (which would be viewed now as a subinterval of I''). Let E be that I . DEF.3 requires that at least one of the intervals of which a predicate holds is a subinterval of R , and (76) makes sure that R precedes S . Hence the interpretation of (75)a: it asserts that there is an interval in the past (i.e., before S) at which the predicate holds. No other assertions can be made, there may or may not be other intervals connected to E , at which the same predicate holds. In particular, there may be an interval that actually includes S at which the predicate holds. There is no implication in (75)a as to whether Peter is still alive or died 10 years ago. The sentence does not provide this information, it has to be obtained otherwise, if needed. For instance, Peter might be very old now, but still in prison:

- (77) Petja pro-sidel v tjur'me do pensionnogo vozrasta.
Peter PF-sit-pst.sg.masc in prison till retirement age.
Teper', daže esli ego vypustjat, on ne budet polučat' pensiju.
Now even if him PF-release-pres.3pl, he not will get-IMP-pres.3sg. pension
'Peter was in prison until the retirement age. Now even if he is released, he will not get a pension'

As for the example in (75)b, this is a sentence with a telic predicate. This means that the predicate only holds at a given interval I and none of its subintervals. The predicate cannot hold at a bigger interval I'' either, since if it were the case, the predicate would show a subinterval property (if it held at I'' and its subinterval I) and would be atelic. Let, again, I be the predication time E . Thus, a 'unique' interval E , of which a predicate is asserted to hold, has to be included in R , due to DEF.3. (76) ensures that R precedes S . Therefore, the eventuality described in (75)b, cannot

³⁷ As was argued in detail in chapter II.

hold at S. This is true and past perfective sentences with telic predicates never allow for the inference that the described eventuality can hold at the S-time.

I have just illustrated that perfective predicates can license different inferences with respect to the S-time due to their different telicity properties. The representation that all the past perfective sentences get is, however, uniform (cf. (76)) and does not comprise any telicity information. This means, that the analysis of perfectivity that I propose is *uniform*, and telicity is still viewed as an independent property of the predicates, just like in Reinhart's analysis.

V.3.6. Some consequences and conclusions. (English-Russian correspondences)

In this last section, I am going to compare two languages to which Reinhart's system of E-R-S relations has been applied to: English (chapter IV) and Russian (this chapter). The purpose is to establish the correspondences between the tense/aspect system of Russian and the tense system of English, some of which have already been mentioned, and illustrate how they are captured by the system adopted here.

V.3.6.1. Perfective aspect

As was already pointed out (section V.3.3), past perfective sentences in Russian are ambiguous. They allow for the interpretations that correspond either to English simple past or to the English past perfect. The best way to illustrate this ambiguity is by means of a subordinate *when*-clause. Here I repeat the example that I gave in section V.3.3:

- (78) Petja ušel domoj kogda pozvonila mama.
Peter PF-go-pst.sg.masc. home when PF-call-pst.sg.fem. mom
‘Peter went home when(=after) his mom called’
‘Peter had gone home when (=by the time) his mom called’

As can be seen from the translations, both past perfect and simple past can be used in the corresponding English versions of the sentence. The different interpretations that arise in the case of English are conflated in one Russian sentence in (78).

One more piece of evidence in favour of associating past perfective with past perfect is the interpretation of temporal adverbials. It is a well-known fact that in English, temporal specifiers like ‘at five o'clock’ give rise to a certain interpretational ambiguity when used in past perfect sentences:

- (79) At 5 p.m., Peter had gone home

The temporal expression ‘at 5 p.m.’ can either be interpreted as exactly the time when Peter left or, alternatively, as some time after Peter’s leaving. In Reichenbach’s (1947) proposal the way of interpreting this ambiguity was to say that this type of temporal expressions can modify either E or R in the past perfect configuration (80):

- (80) E _ R _ S

Interestingly, the same type of ambiguity can be found in Russian, but only in sentences with perfective forms:

- (81) a. Ona zvonila v 5
 she call-pst-sg.fem at 5
 ‘She called at 5’
 b. Ona pozvonila v 5
 she PF-call-pst.sg.fem at 5
 ‘She called at 5 / She had called by 5’

This additional observation confirms the correspondence between the past perfective in Russian and the past perfect in English.

Now I would like to demonstrate how these correlations are derived in the present analysis of the perfective aspect. In my account, perfectivity is defined as follows:

DEF.4: Perfective aspect in Russian is defined by the configuration
 $S \cap R = \emptyset \text{ & } E \subseteq R$

The representations of the English simple past and past perfect in Reinhart’s model are given in (82)a and (82)b, respectively:

- (82) a. $E \subseteq R \text{ & } R < S$ (cf. section IV.3.2.3.)
 b. $E_1 \subseteq R_1 \text{ & } R_1 < R_2 \text{ & } R_2 < S$ (cf. section IV.3.3.2)

R_2 in the past perfect representation can be specified either by an adverbial expression (e.g.(79)) or by another clause (i.e., by another E, like in (78)). Schematically, the representations in (82) can be depicted as (83):

- (83) a. $[_R E] < S$
 b. $[_{R_1} E_1] < R_2 < S$

For ease of comparison, the schematic representation of Russian perfective aspect in the past tense is given in (84):

$$(84) \quad E \subseteq R \& R < S^{38} \quad \text{or} \quad [R \ E] < S$$

The configuration for past perfectives in (84) is *exactly* the same as (82)a, the configuration for the simple past in English. Thus, a very strong correspondence between the English simple past and Russian past perfective is predicted and found in reality.

The distinction between simple past and past perfect is not marked in the temporal system of Russian. I want to show that, crucially, the meaning of past perfect in Russian can be conveyed only by perfective aspect in Russian. The essential part of the representation of past perfect that explains the correlation with perfective aspect in Russian is $R_1 < R_2 < S$. Consider (85):

- (85) a. Peter had already left when John came.
 b. $[R_1 \ E_1] < [R_2 \ E_2] < S$

Here, E_1 corresponds to the eventuality of Peter's leaving, which is included in R_1 , and E_2 to John's coming, which is, in turn, included in R_2 . The configuration in (85)b predicts that we should *always* find perfective aspect in the corresponding *main clause* in Russian, the clause that, in this particular case, reports on Peter's leaving. The reason for this is that there will always be another R , R_2 , intervening between R_1 and S , which makes sure that they do not overlap. The only possibility to get an imperfective aspect in the main clause in this type of construction is to use the progressive:

- (86) Kogda po-zvonila mama, Petja uxdil
 when PF-call-pst.sg.fem. mom, Peter leave-IMP-pst.sg.masc.
 'When mother called, Peter was leaving'

In this case, as the translation shows, English has to use past progressive in the main clause, because the progressive configuration, $R \subseteq E$, is obtained.

Thus, in Russian, perfective sentences in the past can obtain the meaning of either of the English tenses: simple past or past perfect. This is exactly what is predicted by the theory advocated here.

In the non-past temporal domain, it is very difficult to establish any strict correspondences. However, there is a strong correlation between English future perfect and Russian non-past perfective: whenever the future perfect is found in English, perfective aspect has to be used in the Russian translation. It is particularly clear in the presence of a certain type of temporal modification in English sentences, i.e. 'by Monday':

³⁸ The condition for E to precede S , due to the past tense morphology determined by the E - S relation in Russian, is fulfilled automatically.

- (87) a. I will have written the paper by Monday
 b. Ja napišu statju k ponedel'niku
 I PF-write-pres.1sg article by monday

My hypothesis is that the representation of future perfect in English is similar to the one of past perfect. Similarly to the past perfect sentences, the future perfect always requires some additional R-time to be specified or at least implied by the context. In this case, the general configuration that this tense form should be assigned is (88):

- (88) $S < [_{R_1} E_1] < R_2$

E_1 here represents the eventuality of writing in (87) and R_2 is specified by the temporal expression 'Monday'. The important thing is that the configuration for the future perfect in (88) is the reverse of the past perfect configuration. The reasoning about the correspondences with Russian is exactly the same: since S and R_1 do not overlap, perfective aspect is predicted.³⁹

Passive sentences with past passive participles (chapter II, section 1) deserve special attention. Schoorlemmer (1995) argues that periphrastic passive sentences in Russian derive *perfect effect* (PE), which is defined for Russian as describing a *long lasting state* (Schoorlemmer 1995:248). One of the strong arguments that Schoorlemmer's proposal is based on is that the sequence interpretation, which is always available for conjoined perfective sentences in active voice, disappears in participial passive (*ibid.*:257-258):

- (89) a. Maša vymyla posudu, nalila čaj i pozvala sem'ju
 Maša PF-wash-pst.sg.fem. dishes, PF-pour-pst.sg.fem. tea and
 PF-call-pst.sg.fem. family
 '*Maša washed the dishes, poured the tea and called the family*'
 b. Mašej byla vymyta posuda, nalit čaj i pozvana sem'ja
 Maša-INSTR be-pst.pl washed-PPP-sg.fem. dishes, poured-PPP-sg.fem
 tea and called-PPP-sg.fem. family
 '*The dishes were washed, the tea was poured and the family were called by Maša*'

The eventualities of washing the dishes, pouring the tea and calling the family described by the Russian active sentence in (89)a can only be interpreted sequentially, whereas the same eventualities described in by the passive sentence in (89)b *cannot* be interpreted as a sequence. Following Beedham (1982), Schoorlemmer further argues that participial passive in Russian is an aspectual

³⁹ Alternatively, it can be suggested that the important part of the configuration is a non-overlap between R_1 and R , especially taking into account the remarks I made in chapter IV, section 3.3.2, about the status of S -time. I will leave this possibility open.

phenomenon: this is the structure Russian uses to unambiguously express resultative meaning.

In terms of the present work, Schoorlemmer's conclusions can be interpreted as follows: participial passive in Russian is closer to the meaning expressed by imperfective aspect, because an eventuality described by a passive sentence is perceived as *relevant* for the present moment. I agree that this is the right intuitive characterization of the participial passive sentences in Russian. In this work, passive has not been discussed, but a tentative explanation that can be proposed now is that this '*imperfective*' effect of participial passives arises due to the contribution of the auxiliary *byt* 'be', which, as I showed in section V.2.2, must be classified as imperfective in modern Russian. This, however, is just a provisional hypothesis and the temporal/aspectual structure of passive sentences in Russian needs more research.

V.3.6.2. Imperfective aspect and some apparent problems with present perfect

In section V.3.4, it was pointed out that the representations given for past imperfective sentences predict that these sentences should be interpreted as either progressive or present perfect (cf. (72)). Enough has been said about the progressive, and here I just sum up the results of the previous discussion. The progressive correlation has been established in (59), repeated in (90) below:

- (90) The meaning of the English progressive is *always* rendered in Russian by imperfective aspect.

The final definition of imperfective aspect, DEF.5, accounts for this correlation, as I have explained in section V.3.4.

The correspondence between Russian past imperfective and English present perfect deserves more attention, because it has not been explained yet. Let me say right away that much more research is needed in this area to establish the contexts where the use of imperfective in Russian, as well as the use of present perfect in English, is required and not just preferred. One of the factors considerably complicating the research in this area is that there is a lot of free variation, especially in isolated sentences, not only between present perfect and simple past in English, but also between imperfective and perfective aspect in Russian. Another difficult issue is the idiosyncratic properties of the English present perfect tense. First of all, it has a strong resultative connotation and, as example (26), repeated below as (91), illustrates, is incompatible with the meaning of the annulled result, which is usually conveyed by the imperfective aspect in Russian ((92)):

- (91) ?John has left, but he has come back later

- (92) K vam kto-to prixodil
 at you someone come-IMP-pst.sg.masc.
'Someone ?has come/came for you (and no longer here)'

As is well-known, present perfect in English does not tolerate the presence of any temporal expressions explicitly referring to the past. Such an expression in any Russian past imperfective sentence immediately triggers the use of simple past tense in the English translation. Compare the contrast between (93) and (94):

- (93) Ja čitala 'Vojnu i mir'
 I read-IMP-pst.sg.fem. 'War and Peace'
'I have read 'War and Peace'
 (94) Ja čitala 'Vojnu i mir' v devjatom klasse
 I read-IMP-pst.sg.fem. 'War and Peace' in ninth grade
*'I read (*have read) 'War and Peace in the ninth grade'*

Moreover, the choice between present perfect and simple past in English also very much depends on how relevant the situation is considered to be for the present moment by a speaker and this is a subjective judgement. But when this intuition of relevance is very clear, especially in the presence of *already* and in some other cases, the correlation between past imperfective and present perfect is very clear as well:

- (95) Ja už delal éto upraznenie
 I already do-IMP-pst.sg.masc. this exercise
'I have already done this exercise'

Notice that this is a very important result for my account of the Russian imperfective, since this analysis expresses the 'relevance' for a speaker or 'internal perspective' in terms of the S-R relation. This is exactly the case where the prediction about the imperfective-present perfect correlation is strongest.

There are also examples where I think the best English translation of the imperfective sentences would be passive:

- (96) Zimnij dvorec stroil Rastrelli
 Winter palace build-IMP-pst.sg.masc. Rastrelli
'The Winter Palace was built by Rastrelli'

Since I have not considered passive sentences in this work, I will not comment on this type of examples.

To sum up this section, I have shown that an important result of the analysis of imperfective is that it does correspond to the English present perfect when the intuition about the relevance of the situation for the present moment is clear. In order to establish the correlations in other, less clear cases, more research is needed.

V.3.6.3. R-time movement

One of the main results of Reinhart's theory of R-time and the E-R-S relations is a unified treatment of the notion of R-time, which is used for both tense systems and discourse representation rules. It was explained in more detail in chapter IV, how Reinhart's theory accounts for the phenomenon of R-time movement, or, in other words, for the effect of the temporal progression in narrative discourse. Now let me illustrate what predictions Reinhart's theory makes for Russian narrative discourse.

The configuration that corresponds to the creation of the R-time movement effects in narrative discourse is given in (97):

$$(97) \quad [_{R1} E_1] [_{R2} \dots]$$

There is clearly no designated S-time in the narrative discourse. Discourse interpretation rules temporally accommodate every new sentence with respect to the preceding R-time, creating either sequence or overlap interpretation, depending on the properties of a given sentence.⁴⁰ Thus, the current R-time in narrative discourse functions similarly to the S-time in a temporal model. In this case, (97) should definitely be viewed as a perfective configuration. Compare (97) and the perfective configuration in (98):

$$(98) \quad E \subseteq R \ \& \ S \cap R = \emptyset \quad \text{or} \quad [R \ E] <(>) S$$

In the light of this observation, there is a clear prediction made with respect to the narrative discourse in Russian: R-time movement is always 'done' by perfective aspect. Although I do not provide an exhaustive discourse analysis in this work, there are very good reasons to believe that this prediction about narrative discourse is borne out. It has also been pointed out in the literature (e.g., Forsyth 1970 and the references therein) that perfective aspect always creates a temporal sequence interpretation in texts and this is one of the main functions of perfective aspect. I would like to demonstrate this on a fragment of a 'real' text: the beginning of a story by Daniil Xarms called 'Historical incident':

(99)

Ivan Ivanovič Susanin (to samoe istoričeskoe lico, kotoroe položilo svoju žizn'
 Ivan Ivanovič Susanin (that very historical person who laid self-poss life
 za carja i vposledstvii bylo vospeto operoj Glinki) zašel¹ odnaždy
 for tzar and afterwards was praised opera-INSTR Glinka-GEN PF-came-in once

⁴⁰ See section IV.3.3.3 for the generalization concerning the types of sentences that create R-time movement.

v russkuju xarčevnu i, sev² za stol, potreboval³ sebe antrekot.
in russian tavern and, PF-sit-AdvPart at table PF-demanded self-DAT steak.

Poka xozjain xarčevni žaril⁴ antrekot, Ivan Ivanovič zakusil⁵ svoju borodu zubami
While owner tavern-GEN fried-IMP steak, I.I. PF-bit self-poss beard teeth-INSTR

i zadumalsja⁶: takaja u nego byla privyčka.
and PF-think: such at him was habit.

'Ivan Ivanovich Susanin (that very historical person who sacrificed his life for the tsar and was later praised by Glinka's opera) once came into a Russian tavern and, having sat down at a table, demanded a steak. While the owner of the tavern was frying the steak, Ivan Ivanovich bit at his beard with his teeth and fell into contemplating, as was his habit'.

In this text, only past tense is used, so that the problem of the 'historical present' does not arise. Let me now comment on the use of all the underlined and numbered verb forms in this paragraph.

1. zašel-PF 'came into, dropped in'

Here the verb *has to be* perfective. If imperfective aspect is used in this place in the text, the overlap interpretation comes up, which is absolutely incompatible with the with the adverb *odnaždy* 'once'.

2. sev-PF 'having sat down'

This is a Russian gerund. The important thing is that this form is aspectually marked: it is perfective. As predicted, it creates R-time movement, hereby establishing the following sequence:

- (100) [zašel-PF] < [sev-PF]
came.in < sat.down

Again, if the form is changed into imperfective, the only way to interpret the sequence in (100) would be to impose a habitual interpretation, which is, however, incompatible with the preceding discourse, in particular with the adverb *odnaždy* 'once'.

3. potreboval-PF 'demanded'

The third perfective form in a row creates a longer string of sequentially interpreted eventualities:

- (101) [zašel-PF] < [sev-PF] < [potreboval-PF]
came.in < sat.down < demanded

4. žaril-IMP ‘fried’

Very typically, this imperfective form is used in a temporal subordinate clause (a *while*-clause) of a complex sentence and it has a progressive interpretation. *While*-sentences in Russian do not allow for the use of perfective forms. There is a tendency to interpret the ‘frying’ eventuality as following the preceding eventuality described by ‘demand’, but there is a very strong pragmatic implicature here: we order food before it starts to get prepared. The prediction is that, since the clause has a progressive interpretation, a new R-time introduced by the following eventuality E is going to be included into the E-time of the frying eventuality.

5. zakusil-PF ‘bit-into-PF’

The last prediction is borne out. The eventuality of ‘biting’ is understood as temporally overlapping with the eventuality of ‘frying’. If an imperfective form is used here instead of a perfective, an overlap interpretation arises. If the former is the case, there is no explicit temporal adverbial to rule this interpretation out in the same sentence, but it does not successfully accommodate into the preceding discourse.

6. zadumalsja-PF ‘start-thinking-PF’

This perfective form refers to the eventuality which is interpreted as temporally following the preceding one, i.e. the ‘biting’ eventuality. The simplified temporal interpretation of the eventualities in the paragraph that has been analysed is the following:

- (102) [zašel-PF]<[sev-PF]<[potreboval-PF]..žaril...zakusil-PF]< [zadumalsja-PF]
came in < sat down < demanded..... fried.... bit.into < start.thinking

The dots here indicate overlap. As I have already said, due to the strong pragmatic implicature ‘frying’ is understood as temporally following ‘demanding’, but there is no sequence established between ‘frying’ and ‘biting’.

This informal presentation illustrates that, if the aspectual value of a verb is changed, it immediately triggers different interpretation of a given sentence in discourse. The sequence interpretation, which is established by a sequence of perfective verb forms, disappears and a newly forced interpretation can be incompatible with some other information given in the sentence/preceding discourse. Thus, the change of the aspectual value on a verb form makes the discourse infelicitous. The prediction of the theory advocated here concerning the use of perfective forms in narrative discourse is borne out: perfective aspect always marks the sequence interpretation.

V.4. Summary

In this chapter, I developed an analysis of Russian aspect in terms of the S-R relation, the relation determining perspective in Reinhart's theory of R-time (chapter IV, section 3). I adopted a modified system of the E-R-S relations for Russian (cf. (73) above):

(103) RUSSIAN:

- the E-R relation is fixed by DEF.3 of the R-time (chapter IV)
- the S-E relation determines temporal interpretation and morphological tense
- the S-R relation determines perspective, therefore, aspect; the E-R relation contributes to the aspectual system because it derives progressive

The following definitions of perfective and imperfective aspect in Russian were given in this chapter:

DEF.4: Perfective aspect in Russian is defined by the configuration

$$S \cap R = \emptyset \text{ & } E \subseteq R$$

DEF.5: Imperfective aspect is defined as non-perfective, i.e.

$$\neg(S \cap R = \emptyset \text{ & } E \subseteq R), \text{ namely, } S \cap R \neq \emptyset \vee E \not\subseteq R$$

It has been shown, that telicity distinctions are derived on the basis of the independent definitions (DEF.1 and DEF.2 of chapter IV) and are not dependent on the aspectual differences. This is a desirable outcome, since, as I argued in chapter II, there is no strict correspondence between (a)telicity and (im)perfectivity in Russian. It has also been shown how the progressive correspondence (cf. (59)) is derived on the basis of DEF.4 and DEF.5.

An important result of the analysis of Russian aspect given in this chapter is, besides the already mentioned independence of telicity aspect (=predicational aspect) and *Reference time aspect* (viewpoint aspect or perspective aspect), is the formalization of the notion of viewpoint. Viewpoint or speaker's perspective is characterized in terms of R-time interval: if the S-time, associated with the position of a speaker, overlaps with the R-time interval, an *internal* perspective on the eventuality time interval (E-time) is established. If, however, the R- and S-intervals are non-overlapping, a speaker's perspective is *external*. This is an explicit formalization of the informal notion of viewpoint/perspective.

An important empirical result of this analysis is that it derives the absence of an actual present interpretation for perfective non-past forms in Russian. An actual present interpretation arises only if the E- and S-intervals overlap. This possibility, however, is excluded in the perfective configuration, schematically represented in (104):

(104) [_R E] </> S

Since perfectivity conditions require the E-interval to be included in R, and the R and S to be disjoint, the E- and S-intervals can never overlap in perfective configuration. This condition extends for both past and future, i.e., perfective aspect can never get a progressive meaning (actual present interpretation is equivalent to present progressive).

Imperfective aspect is defined as non-perfective. Thus, whenever one of the perfectivity conditions does not hold, imperfective aspect results. This means that imperfectivity, in principle, allows for more diversity in interpretation. For instance, in the domain of past, imperfective aspect corresponds to either progressive or present perfect in English. The aspectual opposition in Russian is characterized as privative (see the introductory chapter), formed by two non-equal members: perfective aspect is marked, imperfective is the unmarked alternate of perfective.