Measure NPs and Split Intransitivity in Russian

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1. Introduction

In Russian, as in other Slavic languages, aspect is not only a semantic constraint, but also concerns the formal properties of the verb. As a result, each verb is inherently perfective (P) or imperfective (I). Accordingly, verbs of both types of aspect can be derived from the same lexical root, and thus appear as forms of the same verb (Maslov 1984).

Formally, aspectual changes occur by means of prefixes, which caracterize perfective verbs, and/or by means of suffixes. Prefixes firstly concern the quality of the event or its perspective (beginning, achievement, accomplishment, or a specific moment of the event). In contrast, suffixes concern the quantity of the event (iterative or semi-factive).

For example, from the basis of the verbal root *stuk* [to knock] the verb *stučat'*, can be formed, which is inherently imperfective, and which describes a continuous event. The perfective verb *postučat'* describes the same event in the moment of its occurrence:

(1) On postučal v dver' i vošel [He knocked on the door and entered.]

The perfective verb *stuknut'* describes the knocking in terms of quantity, because the suffix *-nu-* concerns the uniqueness of the act the moment of occurrence:

(2) On stuknul v dver' [
He knocked (once) on the door.]

Nevertheless, it is impossible to adequately explain the relationship between a verb's form and its semantic value, if imperfectivity and perfectivity are regarded solely as grammatical concepts. On the other hand, if we assume that aspect is only a semantic property of the verb, we miss the specificities of Russian aspectual forms.

It is our belief that both semantic and grammatical constraints depend on the relation between nominal elements and the verb, and that the specificity of the verb form (the prefix) is a sign of this relationship.

As is well-known, a definite direct object in the accusative case interacts with the aspectual properties of the verb. Semantically it determines its telicity, whereas an indefinite indirect object, in an oblique case or \emptyset , determines its atelicity. In Russian this relationship concerns certain intransitive verbs as well, which can sometimes behave like transitive ones, according to the principle that the NP_{acc} 1 (direct object, singular, definite) following the verb determines the transitivity and perfectivity of the verb (Fici Giusti 1990).

2. In Russian, the lexical properties of the NP can determine the aspectual and syntactic specificities of the verb, both of which are indicated in the prefix. In other words, the prefix may have two different functions: (i) it caracterizes the verb as perfective (I Verb > P Verb); (ii) it signals its syntactic peculiarities (Transitive > Intransitive).

In a sentence with an NP_{acc} measuring the duration of the event, the prefix pro- indicates that the event occurred during the time indicated by the NP_{acc} and that the intransitive verb corresponding to the lexical base has become transitive. These pro-Vs are perfective and do not give rise to imperfective forms.

Let us consider the specificities of a pro-V NP_{acc} in sentences with the inherently imperfective intransitive verb rabotat' [to work] and with the derived verb prorabotat':

- (3) Ivan rabotal (*prorabotal, P); nikto ne smel mešat' emu. [Ivan was working; nobody dared disturb him.]
- (4) Ivan rabotal (*prorabotal, P) v kompjuternoj firme. [Ivan worked in a computer company.]
- (5) Ivan prorabotal (rabotal, I) tri goda v kompjuternoj firme. [Ivan worked for three years in a computer company]

In (3) and (4) the verb, which expresses the event in progress (3) or as a continuous fact (4), can be only imperfective. In (5) the perfective form, *prorabotal*, is possible thanks to the NP_{acc} , which expresses the duration of the event. The imperfective is possible too, but in this case,

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¹ NP_{acc} [Accusative Noun Phrase]

the NP_{acc} does not refer to the limit of the event, and thus is not regarded as its measurement².

In her theory on aspect, Tenny (1994) observes that the aspectual properties of the verb depend on the the lexical component of the NP_{acc} . In (3-5) only the NP_{acc} has the property of Measure (i.e. it implements the perfective aspectual meaning³). In Russian the change of aspect is signalled by pro- which here is assumed to be an aspectual prefix of duration. On the other hand pro- is not a bare-aspectual prefix, because it can be only be associated with an NP_{acc} . If we compare pro- with another prefix such as po-, which refers to a short-term event, we see that it can be regarded as bare-aspectual because its lexical specificity arises from the grammatical constraint of the sentence:

- (6) On porabotal (pjat' minut) i ušel domoj. he *po*-worked (P) [He worked a little (for five minutes) and then went home].
- (7) * On prorabotal i ušel domoj. he *pro*-worked and went home

There are various reasons for considering the two prefixes as being asymmetric, even if both have a durative reading (long and short).

Firstly, *po*- is not determined by an NP of duration, even if it means "to work for a short time". In contrast, the prefix *pro*- is determined by such an NP, and cannot be used without it (cfr. 6 and 7). We can argue that *pro*- is linked to an NP_{acc} of measure, while *po*- is not. For this reason, we can affirm that the link "*pro*-V NP of duration" is privileged, as compared to other links "prefix-V NP".

Secondly, the verbs formed with *pro*- and *po*- behave differently with adverbs expressing the duration of the event. An adverb such as *dolgo* [for a long time] cannot modify the aspectual and syntactic specificities of an imperfective intransitive verb, and cannot even co-exist with its *pro*-V perfective variant. However, it is possible for the adverb *nemnogo* [a little, for a short time] to modify a perfective verb, characterised by the short-duration prefix, *po*-:

² In English the two functions of the verb can be expressed by the simple past and the past progressive.

³ According to Tenny (1994: 94), "The aspectual role Measure names en event participant that measures out the event, providing both the single gradable parameter or scale along which the event transpires over time, and the endpoint of the scale". As in Russian, aspect is associated with formal constraints, and we regard Measure (Meas) as a fixed parameter.

- (8) * On prorabotal dolgo. he pro-worked (P) for a long time
- (9) On porabotal nemnogo (i ušel domoj). [He worked a little (and then went home).]

We can explain the difference in relationship of the two verbs with their respective adverbs in terms of their aspectual state. The P po-V is not determined by an NP or by an adverb. The utterances on pogovoril so mnoj [he spoke a little with me], or on poguljal [he walked a little] are as well-formed as (9). The prefix pro-, on the contrary, is not aspectually independent, and it can only be used if an NP_{acc} of duration completes the sentence. For this reason, the latter cannot be replaced with an adverb such as dolgo, prodolžitel'no [for a long time].

The double (aspectual and syntactic) function of the relation between the NP_{acc} and pro-V becomes even clearer with verbs which show double telicity, such as read.

- (10) On pročital tri časa / vsju noč'. he pro-read three hours / all night (acc) [He read for three hours / all night.]
- (11) * On pročital prodol'žitel'no. he pro-read for a long time

Even the referentiality of the NP_{acc} can determine the form of the perfective verb. An indefinite NP_{acc} of duration blocks the prefix *pro*-, but not *po*-:

- (12) *On pročital mnogo vremeni. he pro-read much of time
- (13) On počital neskol'ko minut. he po-read some minutes [He read for a few minutes.]

To sum up, the pro-V has a privileged relationship with the NP_{acc} of duration, determined by the lexical specificities of the NP. According to Fowler and Yadroff (1993), these NP_{accs} of measure are quasi-argumental since they can be regarded as expressions that receive a Theta-Role, but which do not refer to participants. For this reason, they do not usually license passive forms:

(14) *Vsja noč' byla pročitana.

all night (nom) was read Vsja kniga byla pročitana.

(15)

whole book (nom) was read [The whole book has been read.]

 NP_{accs} of duration cannot express aspectual properties in inversion (i.e. when they precede the verb):

- (16) On prorabotal tri goda v kompjuternoj firme.
- (17) On pročital celye tri časa / vsju noč'.
- (18) Tri goda on rabotal (* prorabotal) v kompjuternoj firme. [Three years he worked (I) (* P) in a computer company.]
- (19) Celye tri časa / vsju noč' on čital (*pročital). [He read (I, *P) for three whole hours / all night.]

As in Larson (1985), any bare-NP adverbial in an outer position cannot receive its case from the verb, and hence it obtains case inherently. In (18) and (19) the topicalisation of the NP_{acc} of duration breaks the link to the verb and consequently its aspectual function⁴. This property becomes even more evident, when the topicalised NP is emphasized by adverbs such as *quite*, *in all*, and *barely*:

(20) Vsego tri goda on rabotal (* prorabotal) v našej firme. all.gen three years he worked (I, *P) in our company

The link of the prefix pro- to the NP_{acc} of duration is very productive with imperfective, intransitive inergative verbs (i.e. verbs containing an Agent in their semantic structure). Unaccusative verbs are not usually followed by an NP_{acc} of duration, and do not form the perfective with the prefix pro-:

- (21) On promolčal celuju nedelju. [He didn't speak for one week.]
- (22) On probyl vsju žizn' v gusarax.
 [He spent his whole life in the corps of hussars.]
- (23) On produmal vsju noč'. [He was thinking all night.]
- (24) * Lodka protonula celyj čas. boat pro-sank whole hour

⁴ On the relationship between inversion and grammatical categories, see Nichols (1985).

It seems evident, that NP_{accs} of duration are bare aspectual elements, which act on the semantic and grammatical aspect of the verb.

 NP_{accs} of duration share the role of Measure with other NP_{accs} , determining the telicity of verb. It follows, that all sentences, such as *On pročital vsju noč'* can be interpreted as illustrated in (27), where Or corresponds to the Origin of the event, the NP_{acc} has the role of Measure and *pro*- is Aspect, the formal correspondent in the verb. Usually Or has the role of Agent, but other nominal classes can also have this role.

- (25) Derev'ja prošumeli vsju noč'. trees pro-rustle all night.acc [The trees rustled all night.]
- (26) Lampa progorela vsju noč'. [The lamp burned all night.]
- (27) On pro-čital vsju noč'.

 Derev'ja pro-šumeli vsju noč'.

 [Or [Asp [V Meas]]]

An NP_{acc} of measure has definite constraints: it is neither an adverb, nor a circumstantial adverb, because of its fixed position (cf. Cinque 1997:.40). It is definite, even if expressed by a quantifier (*all*, *the whole*), and cannot be preceded by a preposition. Nevertheless, NP_{accs} can be preceded by a preposition or can be an adverb as in (28):

(28) Drova progoreli za polčasa / nedolgo. wood pro-burned in half an hour / quickly. [The wood burned in half an hour / quickly.]

In fact, *pro*- may have different meanings, according to the lexical component of the NP and to its semantic relation with the verb. In (28) the adverb or the adverbial component determines the resultative meaning of *pro*-. This supports my initial hypothesis, that the NP_{acc} is an aspectual constraint, reflected in the prefix because the same *pro*-V can express different aspectual features, which are determined by the NP_{acc}.

Even NP_{accs} measuring space can act as measures, especially with verbs of movement, which are inherently imperfective and intransitive; NP_{accs} following such verbs may refer either to the time taken to cover the distance or to the distance covered.

- (29) Ivan begal v parke.
 Ivan ran (I) in park.loc
 [Ivan was running in the park].
- (30) Ivan bežal v park.
 Ivan ran (I) in park.acc
 [Ivan was running to the park.]
- (31) Ivan pobežal (*probežal) v park.
 Ivan po-ran (P) to park.acc
 [Ivan ran to the park.]
- (32) Ivan probežal (*bežal, I) pervye 100 metrov. Ivan pro-run (P) first 100 meters [Ivan covered the first 100 meters running.]

The verb *begal* (29) describes the movement carried out in a specific location, which is presupposed when not made explicit. The verb *bežal* in (30) describes the action carried out in relation to a target, which must be specified (**Ivan bežal*). Even if *begal* and *bežal*, are both grammatically imperfective, there is obviously an opposition between telic and atelic movement. The perfective verb *pobežal* (31) focalises the beginning of the movement, symmetric to *bežal*. In (32) the prefix *pro*- of the verb *probežal* is determined by the NP_{acc} of measure. The NP_{acc} following the perfective verb *pobežal* (33) can be replaced by an adverb because the perfective form with *po*- is not related to the NP. Nevertheless, the same adverb does not act as an NP of measure, and thus cannot give rise to the verb *probežal* (34):

- (33) On pobežal tuda. he po-run there [He ran there.]
- (34) *On probežal tuda

The interaction of the NP_{acc} of measure and the grammatical properties of the pro-V holds even if the NP_{acc} is expressed by an anaphoric pronoun:

- (35) On prošel vsju dorogu, i ja probežal ee. he pro-went whole way.f.acc and I pro-run it.f.acc [He walked and I ran the whole way.]
- (36) On pročital ves' den', i ja prospal ego. he pro-read whole day.m.acc and I pro-slept it.m.acc. [He spent the whole day reading and I spent it sleeping.]

(37) On pro-V NP_{acc} / Pronoun [Or [Asp-V [Meas]]]

An NP_{acc} which measures aspect may have the properties of a Theta-Role and appear as the subject of a passive sentence, but only if the P passive participle is marked with pro- and not with other prefixes such as po-. This concerns certain stative verbs like $\check{z}it'$ [to live] and certain verbs of movement like idti, echat' [to go]⁵:

- (38) Oni prošli (*pošli) pervuju polovinu puti. they pro-went (* po-went) first half.acc of way [They walked the first half of the way.]
- (39) On prožil (*požil) v Italii pervuju čast' svoej žizni. egli pro-live in Italy first half.acc of.his life [He lived the first half of his life in Italy.]
- (40) Polovina puti byla projdena (*pojdena). first half of.way was walked
- (41) Pervaja čast' ego žizni byla prožita (*požita) v Italii. [The first part of his life was lived in Italy.]
- **3.** The same imperfective intransitive verb may give rise to two different perfective transitive *pro*-V, determined by two different NP_{accs}: an NP of measure and an NP that does not indicate measure:
- (42) On prospal tri časa. he pro-slept three hours [He slept for three hours.]
- (43) On prospal urok.
 he pro-slept lesson
 [He missed the lesson because he slept late.]
- (44) On prozeval ves' den'. [He yawned all day.]
- (45) On prozeval zanjatija.

 he pro-yawned lessons
 [He missed the lesson because of his tiredness.]

⁵ Certain scholars are of the opinion that passive sentences like ves' den' byl proveden v began'e... [The whole day was spent running] prove that the NP_{acc} can correspond to a Theta-Role (Fowler and Yadroff 1993). In my opinion, such sentences do not explain the close relation of intransitive verbs to the prefixe pro- and the NP_{acc} of duration, because the verb provesti [to pass] is not the result of the interaction of the NP with the verb. It is rather a lexically autonomous verb with an imperfective form (provesti / provodit').

- (46) On prosidel vsju noč' u okna. he pro-sat all night.acc at window [He was sitting at the window all night.]
- (47) On prosidel brjuki.
 he pro-sat trousers
 [There is a hole in the seat of its trousers.]
- (48) On proexal pjat' kilometrov he pro-went five kilometers [He drove for five kilometers.]
- (49) On proexal ostanovku. he pro-went bus stop [He missed the bus stop.]

Examples (42-49) all present the same structure: an NP corresponding to Or, a perfective verb with the prefix pro- derived from an imperfective intransitive, and an NP_{acc}. This NP_{acc} lexically determines the pro-verb, depending on whether it refers to measure or to an object (brjuki, ostanovku, zanjatija,etc.). This double regency confirms my hypothesis, that the NP_{acc} determines the aspectual and lexical specificities of the pro-verb:

(50) NP.nom pro-V NP.acc [Or [Asp-V [Meas]]]

NPs determining the formal and the aspectual features of the verb usually correspond to arguments licensing passive sentences. Let us now consider the passive form of examples (42-49):

- (42') *Tri časa byli prospany. three hours were pro-slept
- (43') ?Urok byl prospan. lesson pro-slept
- (44') *Ves' den' byl prozevan. all day was pro-yawned
- (45') ?Zanjatija byli prozevany. lesson were pro-yawned
- (46') Vsja noč' byla prosižena u okna. all night was pro-seated...
 [He spent all night at the window.]
- (47') Brjuki u nego prosiženy. trousers by him pro-seated

[His trousers have a hole.]

- (48') Pjat' kilometrov byli proechany s bol'šim trudom / bystro. five km. were pro-driven ...
 [He covered driving five kilometers with difficulty / quickly.]
- (49') Naša ostanovka byla proechana. Nam prišlos' idti obratno peškom.
 our bus stop was pro-driven

[The bus missed the stop. We had to walk back.]

Sentences with a passive participle seem to be accepted only if the basic verb is inergative. Unaccusative verbs where there is an NP of measure (42', 44'), and where the NP refers to an activity (43', 45') are unacceptable, even if the possibility of a resultative interpretation of the passive participle is not excluded by the informants consulted⁶. Verbs of movements or verbs expressing state, which are typically inergative, license a passive participle. Consequently, the conditions, determining the passive morpheme and the absorption of the Theta-Role primarily depend on the specificities of the main verb and secondarily, on the lexical properties of the NP. We can conclude that NP_{accs} of measure determining the aspectual properties of *pro*-V do not necessarily correspond to an argumental Theta-Role, even if this possibility is not excluded *a priori*.

- **4.** Let us now consider examples with a *pro*-verb derived from an imperfective intransitive followed by two NP_{accs}, one referring to measure and the other to an object. In several languages this coexistence of NP_{accs} is not excluded under certain conditions. In Italian, both NP_{accs} are possible, depending on the position of the two NPs and on their argumental properties (\pm referential, \pm definite). Even if the argument position (in nominalisation) is immediate for both the NP of measure and the object NP, the syntactic properties of the object NP cannot be ascribed to the NP of measure if the object NP immediately follows the *pro*-verb:
- (51) Gianni attese Piero un giorno intero.

 [John waited for Peter for a whole day.]
- (52) Gianni attese un giorno intero. [John waited for a whole day.]
- (53) Gianni attese Piero. [John waited for Peter.]

⁶ This is the case of examples (43') and (45').

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- (54) L'attesa di un giorno intero esasperò Gianni. [Waiting a whole day exasperated John.]
- (55) L'attesa di Piero esasperò Gianni. [Waiting for Peter exasperated John.]

In Russian both measure and object NP_{accs} show similar grammatical constraints:

- (56) Ivan čital knigi celyj den'. [Ivan read books all day.]
- (57) Direktor dumal otvet vsju noč'.
 director thought answer all night
 [The director thought about the answer all night.]

In these sentences the NP_{acc} of duration can appear in any position. It was mentioned earlier that bare-NP adverbials in an outer position cannot modify aspect. Hence NP_{accs} of measure cannot occur with the pro-V if the position of the NP_{acc} modifying aspect is occupied by another NP_{acc}. In fact, the two NP_{accs} transmit different meanings: one determines the resultativeness of the verb and automatically has a definite reading (*knigi byli pročitany* [the books were read]; *otvet byl produman* [the answer was thought about]). The other NP_{acc} determines the perfective pro-V by specifiying duration. The perfective verb with a resultative meaning can also have a different prefix from pro- (i.e. pri-: on pridumal otvet [he found out the answer]), but this is impossible with the NP_{acc} of duration, on which only the pro-V depends (*on pridumal vsju $no\check{c}$ ' he pri-thought all night). Both NP_{accs} together cannot have the same aspectual function:

- (58) *Ivan pročital (P) knigi celyj den'. John pro-read books all day
- (59) *Direktor produmal (P) otvet vsju noč'. director pro-thought answer all night
- (60) Ivan pročital knigi. [Ivan read the books.]
- (61) Ivan pročital čas.
 [Ivan read for one hour.]
- (62) Direktor produmal otvet.

 [The director thought about the answer.]
- (63) Direktor produmal vsju noč'. [The director thought all night.]

In any case, the verbal aspect does not depend on the perfective prefix, but the latter, apart from its meaning, is determined by a resultative or durative NP_{acc} .

- **5.** The perfective verb with pro-, derived from an imperfective intransitive verb, may be completed not by a NP_{acc} of measure, but by a reflexive suffix (Rfl)⁷. As the Rfl corresponds to the syntactic and aspectual features of an NP_{acc}, we assume that the Rfl and NP_{acc} basically have the same relation to the verb.
- (64) On proguljalsja. he pro-walked-Rfl P [He had a nice short walk.]
- (65) On proguljal čas.
 he pro-walked P hour
 [He walked for one hour.]
- (66) On prošelsja po starym ulicam Moskvy. he pro-went-Rfl P on ... [He walked around the old streets of Moscow.]
- (67) On proigralsja.
 he pro-played-Rfl P
 [He was ruined playing cards.]
- (68) On propilsja.
 he pro-drank-Rfl P
 [He drank all his money away.]
- (69) On progovorilsja.
 he pro-spoke-Rfl P
 [He has said things that he should not have said.]
- (70) On progovoril ves' večer.
 he pro-spoke P all evening
 [He spoke during all the evening.]

In recent studies the reflexive pronoun (Rfl) of passive and of impersonal sentences is regarded as a single lexical item (Manzini, Savoia 1999). In research on specific languages (Schenker 1988, Fici Giusti 1994), a Rfl signals that an argument NP has been absorbed. In my examples this absorption concerns the NP $_{\rm acc}$ of measure because the pro-V form is determined by the NP $_{\rm acc}$ of duration.

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⁷ In Russian inflected clitics have disappeared, and the reflexive clitic is a suffix.

On the other hand, the Rfl can absorb the object NP_{acc} without determining an aspectual change:

- (71) Direktor postroil villu. director po-built P villa [The director built the villa.]
- (72) Direktor postroilsja.
 director po-built-Rfl P
 [The director built for himself.]
- (73) Ivan parkoval mašinu. Ivan parked.I car.acc. [Ivan parked the car.]
- (74) Ivan parkovalsja. Ivan parked-Rfl I [Ivan parked.]

In both sets of sentences the Rfl exhibits different properties. First of all, the verbs *stroit*, and *parkovat'* are transitive, and thus include the ergative argument in their structure. Hence the Rfl signals an argument NP_{acc}. With inergative verbs (e.g. *igrat'*, *govorit'*, *idti*) the Rfl signals a quasi-argumental NP_{acc} expressing measure (Fowler and Yadroff 1993), and the prefix *pro*- is proof of this function. Therefore utterances like *on proigralsja* or *on prošelsja* correspond to the previously mentioned template, formulated below in (75):

The template of the sentences *on parkovalsja*, and *direktor postroilsja* does not include the Measure component, which determines aspect.

6. Conclusions

In this paper I have analysed the relation in Russian between the NP_{acc} of measure and the perfective verb with the prefix pro. The discussion of the data has led to the following assertions:

(i) Aspect is determined by the lexical features of the NP_{acc} following the *pro*-verb.

- (ii) It is the NP_{acc} of measure, and not the object NP_{acc} that determines split intransitivity, and thus transforms intransitive inergative verbs in transitive verbs.
- (iii) NP_{accs} of measure expressed by pronouns (personal or reflexive) share the argumental constraints of other NP_{accs}. NP_{accs} of measure display the same syntactic properties as object NP_{accs}, but if the sentences include both types of NPs, the object NP determines the perfective aspect and the other NP yields.
- (iv) NP_{accs} of measure does not always admit passive transformation.

For all the above reasons, NP_{accs} of measure should be considered a quasi-argument (Fowler and Yadroff 1993), or an argument with only some of the syntactic properties typical of an argument.

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