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Explaining the distribution of infinitives of impersonals in Russian

In Russian infinitives of impersonal verbs have a peculiar distribution: they are not acceptable in most syntactic contexts, but there are also syntactic contexts in which they are perfectly acceptable. Based on a qualitative analysis of data from corpora, the Internet and an acceptability survey, it is argued that the restrictions on impersonals in infinitival constructions can be explained if both morphological and semantic-syntactic factors are taken into account. As is shown, the infinitive in Russian is easily associated with a human (arbitrary) subject. The restrictions on infinitives can be accounted for in terms of a semantic-syntactic incompatibility between the meaning of the impersonal verb, which lacks a subject, and the meaning of the infinitive, which is easily associated with a human subject. This analysis not only explains the data from Russian, but also makes predictions about similar data from other languages.

1. Introduction¹

As is remarked by Perlmutter and Moore (2002), in Russian there is a restriction on infinitives of impersonal verbs. Perlmutter and Moore explain this restriction by postulating null (covert, non-audible or written) forms, more specifically null nominative subjects of finite impersonal verbs, and the requirement that subjects of infinitival clauses be dative.

¹I benefited greatly from comments by three anonymous reviewers. I am also greatly indebted to Lisa Cheng, Roberta D'Alessandro and Andries van Helden, for commenting on earlier drafts of this article, and Boris Kozlov for his help in conducting the acceptability survey.

Because of its elegance, Perlmutter and Moore's explanation of the Russian data is quite attractive. It can therefore be argued that as long as no alternative explanation is provided, both the use of null forms and the rule that the case of the subject of the infinitive is dative cannot be rejected. This opinion is clearly expressed by Perlmutter (2007, p. 304), when he states that '[w]hile readers are certainly entitled to their opinions about what is desirable or undesirable, it is incumbent on those who find null subject undesirable to show that a grammar without them is superior to one that posits them.'

However, as I will contend in this paper, even though the analysis given by Perlmutter and Moore (2002) provides an important generalization of the data, it is incomplete, and in some cases gives an oversimplified picture of the data. Furthermore, the 'null dative subject hypothesis' at times makes wrong predictions. Following Babby (2009), and in contrast to Perlmutter and Moore (2002), I will contend that data cannot be explained with reference to case. In contrast to the purely syntactic approach given by both Perlmutter and Moore and Babby, I will argue that the restriction on infinitives of impersonals is not just syntactic, but also has a (morpho)semantic dimension.

This article is structured as follows: Section 2 provides an overview of the relevant data; Section 3 discusses the analysis of infinitives and impersonals in Russian given by Perlmutter and Moore (2002) and Babby (2009); Section 4 presents an alternative analysis to the same data; Section 5 provides a general conclusion.

2. The data and theoretical preliminaries

This section sets forth definitions of the terms 'impersonal verb' and 'subject' and provides a general overview of the data, as well as the methodology I have used to collect and analyze said data.

For this analysis I will use the term ‘impersonal verb’ with respect to verbs (or constructions) that do not have a subject that agrees with the verb, and which have third person singular (neuter) marking when they are used as a finite form, for example:

- (1) Morozilo.
froze-3SG-N
‘It was freezing.’
- (2) Morosilo.
drizzled-3SG-N
‘It was drizzling.’

Weather verbs are typical instances of this type of impersonal (see, e.g. Birjulin (1993) for an analysis of this class of impersonal verbs), and therefore these meteorological verbs will be my focus here. However, Russian has a vast array of other types of impersonal verbs and constructions (see, e.g. Guiraud-Weber (1984) for an overview of such impersonal constructions in Russian). It should be stressed that some of these impersonal verbs – including meteorological impersonal verbs – do in fact have personal counterparts with a comparable meaning that show agreement between the subject and the verb:

- (3) Morosil doždik.
drizzled-3SG-M rain-N-M
‘The rain was drizzling.’

Furthermore, in some cases, the impersonal nature of the verb is due to the construction, and the impersonal status of the verb is not part of its argument structure. See, e.g. Babby (2009) for an overview of the argument structure of various impersonal verbs and impersonal constructions.

Note that the class of impersonals under discussion does *not* include the so-called ‘undetermined personal constructions’ and ‘generalized personal constructions’, which are traditionally distinguished in Russian grammars (e.g. Švedova 1980). Such constructions are associated with a non-specific (generic or arbitrary) human first participant, which cannot be expressed by a nominative form, for example in the following sentences from the Russian National Corpus (henceforth RNC):

(4) **Stučat.** (RNC)

knock-3PL

‘Someone is knocking at the door.’

(5) Bez kritiki ne **proživeš’.** (RNC)

without criticism not survive-2SG-PRES

‘You (one) cannot survive without criticism.’

These constructions cannot be infinitival, since the specific generic or arbitrary interpretation of the first participant (subject) is directly related to the second or third person marking on the verb (for an analysis of similar constructions cross-linguistically within a more formal framework, see, e.g. Egerland, 2003). As such, they fall outside the scope of the present analysis.

To reiterate, the aforementioned impersonal meteorological verbs will be the focus of this section, and other types of impersonals will be discussed in section 4.5.

Another term requiring elaboration is ‘subject’. In linguistic literature the term ‘subject’ is defined in various ways, depending on the theoretical framework used by the author. The present analysis will use the term ‘subject’ in two ways. First, I will use it as a syntactic term for the form, which agrees with the verb (called ‘morphological subject’ by Babby 2010b).

Prototypically this means that the subject is a noun, pronoun or noun phrase with nominative case marking.²

Second, I will use the term ‘subject’ as a semantic term to refer to the first participant of the infinitive, that is, the participant with agentive or actor-like properties that is associated with the infinitive. It should be noted in formal (generative) syntactic frameworks the subject of the infinitive is also taken to have a particular covert form (PRO). Similarly, such models usually also regard instances where the first participant of the infinitive is expressed by a dative noun or pronoun as an actual subject (for example Moore and Perlmutter 2000, and Babby 2009).

I will now turn to the discussion of the data. As remarked above, Perlmutter and Moore (2002) observe that, in Russian, infinitives of impersonal verbs are not acceptable in most contexts. There is only one type of context in which infinitives of impersonals are fully

² I deliberately use the term ‘prototypically’ because there may very well be instances where the form that governs agreement is not a nominative noun or pronoun. One reviewer argued, for example, that in the following Russian sentence the prepositional phrase *po pjat’ bol’nyx*, which is not a nominative noun, agrees with the verb, which may show either singular or plural morphology:

- (i) U nix v bol’nice ežednevno **umirajut/umiraet** po pjat’ bol’nyx.
at them in hospital daily die.3PL/ die.3SG per five patients-GEN
‘In their hospital five patients die every day.’

In the case of plural agreement one might also give an alternative analysis, and argue that the PP cannot be seen as the subject, in the same way as in the following sentence from the Internet the nominative *sobaki* (‘dogs’) is the subject, and not the genitive plural form *štuk* (‘pieces’):

- (ii) Zimoj v Kožuxovskom prijute sobaki umirali po pjat’šest’ štuk za den’.
winter-INSTR in Kožuxovskij shelter dogs-N died-PL per five-six pieces-GEN a day
‘During winter in the Kožuxovskij shelter dogs were dying five-six pieces a day.’

In the same vein, in (i) the plural agreement of the verb could be explained in the same way as the plural agreement of the undetermined personal constructions as in (4). Cf.:

- (iii) Na vstreču ot každygo klassa, načinja s pjatogo, **vybiral** po pjat’ čelovek.
in meeting from every class starting from fifth selected-3PL per five people
‘When they visited, they selected five people [per class], starting from the fifth class.’ (RNC)

I will refrain from further discussion of the term ‘subject’ here, and refer readers to Babby (2010b) for an analysis within a formal framework, or Keenan (1976) for a typological approach to subjecthood.

acceptable. This is the case if they occur as the complement of auxiliary verbs. An example is (6) with the auxiliary verb *perestat'* ('stop'), and the infinitive of the impersonal verb *morosit'* ('to drizzle'):

- (6) Perestalo morosit'. (Perlmutter & Moore 2002, p. 636)
stopped-3SG.N drizzle-INF
'It stopped drizzling.'

Such sentences are fully acceptable and absolutely not stylistically marked in any way.

In order to determine in which contexts infinitives of impersonals are not acceptable, I looked for instances of infinitives of impersonal verbs other than in contexts like (6) in a corpus of spoken and written Russian (RNC) and on the Internet. In the RNC no examples were evidenced, however various examples were confirmed on the Internet. Even though the examples from the Internet were taken from a large variety of sources, ranging from forums to novels and journals, there are, of course, potential hazards arising from the use of data collected from the Internet. Because the sample of data is relatively small, it is difficult to determine to what extent the examples can actually be seen as acceptable instances of modern standard Russian. Furthermore, in some cases it is not possible to determine who the authors of the sentences are, and to what extent their speech represents modern standard Russian. To overcome these difficulties, an acceptability test was conducted with 58 native speakers of Russian. The participants were asked to grade 62 sentences (including the sentences found on the Internet) on a five-point scale.³ Participants were asked to rate a sentence as "1" if they

³ The survey included both impersonal meteorological verbs and instances of the accusative experiencer construction, which will be discussed in section 4.5.

found it completely unacceptable, “3” if they were not sure about acceptability and “5” if it was fully acceptable.⁴

The survey shows that infinitives of impersonal meteorological verbs are acceptable with the subordinators *pered tem kak* (‘before’), and *vmesto togo čtoby* (‘instead of’), as in the sentences given below (in each case the mean acceptability score is given, and in some cases the mean acceptability score of the corresponding finite sentence; see the appendix for the median scores and standard deviations per sentence):

- (7) Leto prošlo, ja èto čuvstvuju. **Pered tem kak poxolodat’**
summer passed I that feel before get.cold-INF
okončatel’no, vseгда na kakoe-to vremja tepleet.⁵
finally always for some time be.warm-3SG.PRES

‘The summer has ended, I can feel it. Before it finally gets cold, it’s always warm for some time.’

[*mean acceptability 3.53; mean corresponding finite sentence 4.19*]

- (8) Solnce stalo skatyvat’sja k gorizontu. No, **vmesto togo čtoby**
sun-NOM began go.down-INF to horizon but instead.of
poxolodat’, stalo žarče.⁶

⁴ All the participants are native speakers of Russian (both male and female), mainly between the ages of 20 and 35 years old and having a university education. – The survey was conducted via the Internet. Participants were sent the file containing the survey question, the sentences and grading scale for each sentence. The answers were returned by e-mail. The participants were partly found with the help of the Russian social network “Be in contact” (<http://vkontakte.ru>). A copy of a test was uploaded on one of the Russian forums (<http://talks.mark-itt.ru/forummisc/blog/6906/8095.html>). In addition, people from Moscow, St. Petersburg, Yekaterinburg, Kazan and Izhevsk were asked to participate in the test using Internet communication programs such as ICQ and Skype. – The participants were not aware of the purpose of survey, and the survey was designed in such a way to disguise the intent of the research (e.g. with respect to the order of the sentences that had to be rated). The participants received a standard introduction to the survey of about five minutes. The participants filled in the survey while online so that they could ask questions about the survey if needed. On average it took them ten to fifteen minutes to fill in the survey. – A number of clearly ungrammatical sentences were added to the survey in order to test whether the participants filled in the test seriously and attentively. Participants that chose 3, 4 or 5 on one of the ungrammatical sentences were removed from the test (of the 61 participants, three were removed).

⁵ <<http://erofeeva.livejournal.com/tag/кино>>

cool.down-INF become-3SG.N.PAST warmer

‘The sun started to slide towards the horizon. But instead of getting colder, it became warmer.’

[*mean acceptability 3.31; mean corresponding finite sentence 2.55*]

The mean acceptability of these sentences lies between 3 (‘uncertain about the acceptability’) and 4 (‘quite acceptable’) on a 5-point scale, and the median of such sentences is 4. The data show that there is variability between speakers, which suggests that the acceptability of such sentences is also partly a matter of style and register. Also note that in the case of (8), with *vmesto togo čtoby*, the infinitival sentence is considered to be more acceptable on average than the corresponding finite version, whereas in the case of (7), with *pered tem kak*, the corresponding finite sentence is seen as more acceptable.

It should be noted that in all the examples with *vmesto togo čtoby* and *pered tem kak* substantiated here, both the subordinate clause and the main clause contain a finite (meteorological) impersonal verb. Apparently, the occurrence of a finite impersonal verb in the main clause is necessary for the occurrence of an infinitive of an impersonal verb in the subordinate clause.

Regarding examples on the Internet, none or extremely few were verified of infinitives of impersonal meteorological verbs with the following subordinators:

- *esli* ‘if’;
- purpose (instrumental) clauses with *čtoby*;
- *čtoby* in the construction of degree (with *sliškom/dostatočno* X *čtoby* Y ‘too/enough X to Y’);

⁶ <www.gramotey.com/?page=45&open_file>

In the survey the following construed sentences were tested, which all show that the acceptability is lower than 3:

- (9) * **Čtoby morozit'** na Gavajax, nado, čtoby zemlja perevernulas'.
in.order freeze-INF in Hawaii, need that earth-NOM turn.over-PST
[corresponding sentence in English, according to Perlmutter and Moore: 'In order for it to freeze in Hawaii, the world would have to turn upside down.'] (Perlmutter & Moore, 2002, p. 621)

[mean acceptability 1.79; mean acceptability corresponding finite sentence 3.17]

- (10) **Esli morozit'**, to budet očen' xolodno.
if freeze-INF.IPFV then will.be very cold
[intended meaning: 'If it is to freeze, it will be very cold.']

[mean acceptability 2.60]

- (11) V Afrike sliškom žarko, **čtoby morozit'**.
in Africa too hot in.order freeze-INF
[intended meaning: 'In Africa it's too hot to freeze.']

[mean acceptability 2.16; mean acceptability corresponding finite sentence 2.98]

It can, therefore, be concluded that infinitives of meteorological impersonals are acceptable with a limited number of subordinators. In such sentences both the subordinate clause and the main clause contain an impersonal verb.

3. Existing analyses

In their paper Perlmutter and Moore (2002) (henceforth also P&M) provide a syntactic analysis of the distribution of infinitives of impersonals in Russian. They provide example (9) with the infinitive of the impersonal verb *morozit'* ('to freeze'), which they argue is not acceptable, and

its finite counterpart (12), which they argue is fully grammatical. Their acceptability judgments are confirmed by the acceptability test I have conducted. Sentence (9) is clearly ungrammatical, with a score below 2, whereas (12) has a mean acceptability above 3:

- (12) **Čtoby morozilo** na Gavajax, nado čtoby zemlja perevernulas'.
in.order freeze-3SG-N-PST in Hawaii, need that earth-NOM turn.over-PST
'In order that it freeze in Hawaii, the world would have to turn upside down.'
[mean acceptability 3.17]

It should be emphasized that the restriction on the infinitive in (9) is due to the impersonal status of the lexical verb *morozit'*, since the same construction is perfectly acceptable with an infinitive of a personal verb, as in (13) with the personal transitive verb *issledovat'* ('investigate'):

- (13) **Čtoby issledovat'** ètot vopros, on dolžen znat' nemeckij jazyk.
in.order investigate-INF this question he ought know-INF German language
(P&M, 2002, p. 635)
'In order to investigate this question, he should know German.'

P&M explain the restriction on infinitives of impersonals on the basis of a set of rules that are specific to Russian. First, they argue that surface subjects (i.e. overt subjects) of finite clauses are nominative (P&M, 2002, p. 621). The next step in the argumentation of P&M is that the nominative subject is also present when the subject is silent, as in (1) or (2) (P&M, 2002, pp. 630-631). In such sentences, P&M argue, Russian has a silent expletive subject comparable to English *it* (the term 'expletive' means that the form does not refer to anything).

The rule that the subject of a finite verb is nominative is generally accepted in linguistic literature, but in their argument P&M also provide systematic evidence for another rule, namely that the subject of the infinitive in Russian is dative. To illustrate this they mention two types of constructions with a dative infinitive subject, specifically sentences with a conjunction (subordinator) and an infinitive predicate, and sentences without conjunction (subordinator) where the infinitive is the main predicate of the sentence. Examples of these constructions with an overt dative subject are given below:

(14) [čtoby **nam** uexat' na vokzal] (P&M, 2002, p. 621)
 in.order us-DAT go.out-INF to railway-station
 'in order for us to go out to the railway station'

(15) **Mne** ne sdat' èkzamen. (P&M, 2002, p. 620)
 me-DAT NEG pass-INF exam-ACC
 'It's not (in the cards) for me to pass the exam.'

In (14) we find a purposive clause with the conjunction *čtoby* ('in order') and dative pronominal subject. In (15) we find a so-called infinitival root clause (also called 'infinitive sentence', or 'dative-infinitive construction'), also with a dative pronominal subject. P&M focus on the latter construction in their discussion. An important attribute of P&M's explanation involves pointing out that, while pronoun-drop (*pro*-drop) of the subject is possible in finite clauses, and even obligatory in the case of nominative expletives, it does not occur in INFINITIVAL clauses such as (15). Therefore, the dative subject cannot be omitted in (15), or, as will be explained below, at least not while maintaining the same meaning:

(16) *Ne sdat' èkzamen. (P&M, 2002, p. 620)
 NEG pass-INF exam-ACC
 P&M's translation: 'It's not (in the cards) for me to pass the exam.'

According to P&M (2002, p. 633), this can be seen as evidence that there are no phonologically null dative pronouns. This provides the solution to the question of why (9) is not acceptable: the impersonal *morozit* ('freeze') requires a silent NOMINATIVE subject, whereas the subject of the infinitive is DATIVE. Expressed differently, there is an incompatibility of case in (9). Of course, one could imagine a rule that makes it possible for the silent subject of the impersonal verb to be assigned a silent dative case. However, P&M argue, *pro*-drop is not possible in the case of the dative subject.

Strong evidence in favour of P&M's claim is that the two types of syntactic contexts in which one can argue that the case of the infinitive subject is not dative do indeed allow for infinitives of impersonals. P&M (2002, p. 621, note 2) point out that these two types of contexts are so-called obligatory control contexts, where the embedded subject often takes the case of the controller, and so-called raising contexts, where the subject of the infinitival complement bears the case of the raise.⁷ This can be exemplified with the following sentences:

(17) [čtoby uexat' na vokzal **odnomu**
in.order go.out-INF to railway-station alone-DAT
'in order to go out to the railway station alone'

(18) **Ja** xoču rabotat' **odin.**
I-NOM want-1SG work-INF alone-NOM-SG-MASC
'I want to work alone.'

(19) **On** načal rabotat' **odin.**
he-NOM started-1SG-MASC work-INF alone-NOM-SG-MASC
'He started to work alone.'

⁷ It should be noted that not all formal (generative) models make a distinction between raising and control. See, e.g. Babby (2009) for an alternative analysis of the data, which does not make use of the notion of interclausal case agreement.

According to formal syntactic frameworks (see, e.g. Comrie, 1974; Franks, 1995), in (17) the form *odin* ('alone') is dative because it agrees in case with the subject of the infinitive, which is dative by default. However, in control context (18) and raising context (19), the form *odin* ('alone') is not dative but the same as the case of the nominative subject of the finite verb. As such, the case assignment to the forms *odin* ('alone') and *sam* ('self') can be seen as a diagnostic for the presence or absence of a dative infinitive subject. These constructions are indeed an exception to the rule that infinitives of impersonals are blocked. An example is (20), with *perestat* ('stop') and the infinitive of the impersonal verb *morosit* ('to drizzle'):

- (20) Perestalo morosit'. (P&M, 2002, p. 636)
 stopped-3SG.N drizzle-INF
 'It stopped drizzling.'

The data presented by P&M therefore validate their statement that the 'true generalization is that they [impersonals] can occur in environments where the subject must be nominative.'

(P&M, 2002, p. 639)

Even though P&M certainly point at an important generalization of the data, their explanation in terms of covert dative infinitival subjects is not as elegant as it initially seems. First of all, P&M's (2002) postulation of dative infinitive subjects does not easily explain why the restriction on infinitives only occurs in the case of impersonal verbs that are associated with non-expressed nominative subjects. To return to an earlier example by P&M, why is (13), with an infinitive of a personal verb, acceptable, whereas a similar construction with an impersonal verb, such as (9), is not? And why is there a dative subject in (14), even though there is no overt dative subject in (13)? This can also be illustrated by means of the temporal clauses in (21)

(without dative subject) and (22) (with dative subject) (cf. the example provided by P&M, 2002, p. 621):⁸

(21) Prišlos' pobrit'sja **pered tem kak**

necessary-PRED-PST shave.oneself-INF before

idti fotografirovat'sja. (RNC)

go-INF having.picture.taken-INF

'I had to shave myself before having my picture taken.'

(22) [Tut nastal moj čered.]

Pered tem kak mne vystupat', vdrug podnjalsja šepot.

before I-DAT appear-INF suddenly occurred whisper

'Then it was my turn. Before I had to go onstage, suddenly people started to whisper.'

(RNC)

P&M suggest a solution in terms of the notion of control. With regard to sentences like (13) or (23), they argue that 'in frameworks where controlled subjects are represented as PRO, such clauses as well are grammatical infinitival clauses with silent subjects' (2002, p. 635). It is not

⁸ The use of the dative subject can be seen as a special linguistic device with a special function. Sentences with a dative express that the situation is 'planned', or 'going to happen', whereas this modal feature is not explicitly transmitted in sentences without dative (see Fortuin, 2006, for a detailed analysis how the modality comes about). This does not accord with Rubinstein (1986), who argues that the main factor triggering the use of a dative subject in similar sentences with *čtoby* 'in order' is avoidance of coreference disturbance. Examples where the dative subject is coreferent with the subject in the main clause do, however, occur, in sentences with a conjunction, e.g.: *A pered tem kak emu zaxvorat', on oslab vdrug do nevozmožnosti* (M. Zoščenko, cited in Fortuin, 2006), 'But before getting ill, he suddenly became extremely weak (but before he-dat get.ill-inf.pfv, he got.weak suddenly to impossibility)'. Furthermore, Fortuin (2006) provides statistical data showing that the percentage of coreferent contexts in sentences with a conjunction of anteriority, a dative subject and an infinitive clause is not different from sentences with a nominative subject and a finite predicate. Nevertheless, I am reluctant to deny that coreference (or emphasis) may be an important trigger for the use of the dative subject. However, this does not exclude an analysis, which attributes a 'modal' meaning to the expression of the dative. It is only in contexts that are somehow compatible with such a modal meaning that the dative can be used to avoid coreference disturbance. The association with a modal meaning probably also explains why the dative subject is not used with all conjunctions of anteriority; it is, for example, very restricted with the conjunction *prežde čem* ('before') (see Fortuin, 2006).

clear to me, however, how this analysis can deal with the fact that in such presumed control contexts, PRO is associated with dative case. Note, for example, that in (13) the subject of the infinitive must be dative, which becomes evident if we insert the form *sam* ‘self’, as in the following sentence:

- (23) [Čtoby issledovat’ ètot vopros **samomu**
 in order investigate-INF this question self-DAT
 ‘In order to investigate this question himself.’

Thus, whereas P&M argue that in controlled constructions we do not have a dative subject but a silent infinitive subject (PRO), the data clearly suggest that in such contexts the underlying case of the infinitive subject is dative.

Another problematic issue is that infinitive sentences like (15) do in fact occur without overt dative subject. In such sentences the infinitive subject is interpreted as a generic or arbitrary subject, or as the speaker or addressee:

- (24) **Pokurit’** by.
 Smoke-INF IRR
 ‘If only I could have a smoke.’
- (25) Èkzamen ne **sdat’**.
 exam not pass-INF
 ‘One cannot pass that exam.’

These interpretations of the subject are due to the absence of a dative noun, and absent if a dative form is used in these sentences (see Fortuin, 2005, for a more thorough analysis of such sentences, the question of how the modality comes about, and the semantic and syntactic conditions for a generic reading, such as the presence of negation or the subjunctive particle *by*).

Again P&M maintain their analysis by arguing that the subject in such sentences must be analyzed as PRO, and that one cannot speak of *pro*-drop (2002, p. 633, note 21; p. 634, note 24).⁹ Even though the analyses of these problematic cases make sense within the model of P&M, they also have the character of an *ad hoc* explanation with respect to the explanation of the restrictions in impersonals. Furthermore, as I have already shown, their explanation in terms of case assignment is not able to deal with the entirety of data. It does not explain, for example, that in some contexts, which are not predicted by the model of P&M, sentences with infinitives of impersonals are in fact acceptable, as in (7) and (8).

The analysis given by P&M is based on the assumption that impersonals can occur in environments where the subject must be nominative, and not in contexts where the expressed or non-expressed case of the infinitive subject is dative. Because of this, P&M contend that the dative case is in fact the CAUSE of the restriction on impersonals. However, the data suggest that those contexts where a dative case occurs with the infinitive have something in common, and that this common feature also explains why impersonals are banned in the majority of the same contexts.

3.1. Babby's analysis

Within formal linguistics, an alternative analysis of the data is proposed by Babby (2009). Babby presents a theory of syntax in which argument structure, which he terms *diathesis*, plays an essential part. Babby discusses Russian infinitives in terms of their formation: 'Infinitive formation is a diathesis-based operation that composes the diathesis of a lexical verb stem **V**,

⁹ A dative pronoun or noun can be omitted in sentences where the modal element of the construction is expressed by an overt modal form, such as the non-verbal predicate *nado* ('necessary'). Cases like these are not explicitly discussed by P&M (2002), but in an earlier paper Moore and Perlmutter (2000) argue that the dative cannot be seen as an actual dative subject in sentences with a non-verbal predicate. Because of this, they behave differently. P&M refer to this in a footnote, where they argue that 'the dative nominal in these constructions is not the surface subject' (2002, p. 623). Similarly, in note 28 (P&M, 2002, p. 637) on the same type of construction, they argue that a dative noun is not a subject and refer to Moore & Perlmutter (2000) for justification.

which is common to all finite and nonfinite verbal categories, with the diathesis of the infinitive-forming suffix **-inf** (...). This entails that an infinitive's syntactic projection consists of VP embedded as the complement of **-inf**, which heads its own affixal projection, the infinitive phrase (...).' (Babby, 2009, p. 172) According to Babby, an infinitive's final argument structure (diathesis) can project to syntax in different ways. With respect to the topic under discussion, the following syntactic structures are relevant:

- (a) Infinitive small clause (s-clause)
- (b) Bare infinitive phrase

The s-clause is exemplified by the dative infinitive construction, as in (15), sentences with a subordinator (complementizer) and an infinitive predicate, as in (13), and a number of other constructions that all share a common aspect: the case of the (covert or overt) infinitive subject (PRO) is dative. The diagnostic for this is the occurrence of the forms *sam* ('self') and *odin* ('alone') in the dative case when they occur with the infinitive. Even though Babby (2009) does not explicitly discuss this topic, the model he provides explains quite straightforwardly why infinitive small clauses cannot be impersonal: the infinitive small-clause has a (dative) subject, whereas impersonal verbs, such as *morozit* ('freeze'), are subjectless.

The bare infinitive phrase only occurs as the complement of an auxiliary, with which it forms a complex predicate, as in (20). Impersonal (subjectless) verbs can be infinitives in this construction because the auxiliary verb inherits the impersonal verb's external argument. In generative theory the external argument of a predicate X is the argument that is not contained in the maximal projection of X. In most cases, this is the subject of the predicate. In the case of impersonal verbs, there is no external argument; hence the auxiliary inherits the impersonal status of the infinitive. This is rephrased, as follows, in Babby (2010, p. [16]): 'The external argument X of the lexical verb's diathesis becomes the external argument of the auxiliary verb and the rest of the lexical verb's diathesis W becomes the infinitive complement of the

auxiliary. The infinitive complement thus gives the impression of controlling its matrix auxiliary verb because the auxiliary in effect inherits the lexical infinitive's external argument.' (see also Babby, 2009, p. 223, for a description in terms of Babby's theory of diathesis).

In my view, Babby's analysis of impersonals is more plausible than Perlmutter and Moore's analysis, and both theoretically and empirically appealing. However, there are still a number of questions that are left unanswered. First, Babby's analysis does not explain or predict why infinitives of impersonal verbs are possible with some subordinators in Russian. Second, Babby's (2009, pp. 220-227) explanation of the restriction on infinitives of impersonals, and the possibility of such infinitives with auxiliaries, is framed within purely syntactic terms. It would be possible to strengthen this explanation, I believe, by adding a semantic dimension. In the remainder of this article such an analysis will be provided. It should be remarked that, even though my analysis is not framed within a formal syntactic framework, it is not incompatible with such frameworks.

4. A morpho-syntactic semantic approach

4.1. Infinitives, subjects and agentivity

As is argued in Fortuin (2003), the infinitive denotes in all its different uses a SITUATION TYPE, and can be seen as a verb (cf. Ebeling, 1984). The term 'situation' is used as a cover term for events, states, processes, etc. Situation types can be seen as abstractions from individual occurrences of situations that are grouped together on the basis of similarity. Because the infinitive denotes a situation, it can evoke the thought of a subject of the situation (PRO) and the idea of the realization of a situation. In contrast to individual situations, which are expressed by finite verbs, the infinitive does not express person, number, or tense.

There are two reasons why there are restrictions on infinitives of impersonals and not on finite impersonal verbs. First, infinitives do not express their impersonal status by

morphological marking for (third singular) person and (neuter) gender. They can only acquire an impersonal interpretation if there is another impersonal finite verb of the same type present in the syntactic context, as in (6), (7) and (8). Second, an important factor triggering the restriction on infinitives of impersonal verbs is that, without context, the default interpretation of the infinitive is as having an animate and generic or arbitrary subject, which obviously clashes with the meaning and status of impersonals. This association can be overruled by establishing coreference with another subject. In the case of sentences such as (18) or (19), the subject of the infinitive is coreferent with the subject of the main clause (so-called ‘subject control’), but there are also sentences where the subject of the infinitive is coreferent with the object of the matrix verb:

- (26) On zastavil **menja** rabotat’.
 he-NOM forced me-ACC work-INF
 ‘He forced me to work.’

A similar pattern can be observed in sentences consisting of a subordinate clause (introduced by a subordinator), and a main clause. In such sentences the subject of the infinitive is coreferent with the first participant of the main clause, as in (27)¹⁰, or, in the case of object-controlled infinitives, with the (direct or indirect) object of the matrix verb of the main clause, as in (28):

- (27) **Čtoby** **pet**’, emu nužno oščuščat’ sebja junošej. (RNC)
 in.order sing-INF he-DAT necessary-PRED feel-INF REFL youth-INSTR
 ‘In order to sing, he needs to feel young.’

¹⁰ I use the term ‘first participant’ as a semantic cover term for what is often called logical subject. The first participant can be expressed by a nominative noun or pronoun, or by a dative noun or pronoun, and even by other types of nouns, such as accusative nouns or pronouns. In the following example, the first participant is expressed by the accusative pronoun of the impersonal experiencer verb *tošnit’*: *Pered tem kak umeret’, ego tošnilo.* (Before die-inf, he-acc nauseate-3sg.n), ‘Before he died, he threw up.’

- (28) Ona predložila Lent'evu nateret'sja odnim iz ètix preparatov
 she-NOM suggested Lent'ev-DAT anoint-INF one-INSTR of these preparations
pered tem kak idti v parnuju. (RNC)
 before go-INF in steam.room
 'She suggested Lent'ev to anoint his body with one of these preparations, before going
 into the steam room.'

If no coreference can be established, the infinitive subject is interpreted as a human and generic (arbitrary) subject ('one', 'people in general'), for example:

- (29) Čtoby razorvat' kusok provoloki, trebujutsja značitel'nye
 in.order tear-INF part wire-GEN require-3PL-PRS significant-PL-NOM
 usilija. (RNC)
 strengths-PL-NOM
 'In order to tear a part of the wire, significant effort is required.'

See, e.g. Ebeling (1984) for a functional-structuralist analysis of the rules of coreference in Russian infinitives. In addition, note that similar rules are also stated within formal frameworks using generally accepted notions, such as PRO-licensing and arbitrary PRO.

The association with a human subject in the case of the infinitive can also be found in a language such as English. For example, consider sentence (9), given by Perlmutter and Moore. In this sentence the subject of the subordinate clause is an impersonal weather verb (in their model, the silent subject of *morozit*'), but the main clause does not contain an impersonal weather verb. Instead the main clause consists of a non-verbal predicate (*nado*) and a subordinate clause introduced by *čtoby*. The subject of this clause is *zemlja*. Because there is no impersonal finite verb available in the main clause, the infinitive subject gets a generic (arbitrary) reading, which clashes with the meaning of the impersonal verb ('If one wants to

freeze in Hawaii, it is necessary that the world would turn over.’). Note that the absence of an impersonal verb in the main clause also explains why in the corresponding English sentence coreference can only be established by using the *for it* construction in the subordinate clause. There are data that suggest that the association with a human subject in the case of the infinitive is stronger in Russian than in a language such as English, even though in English we find a similar phenomenon. More specifically, in Russian the same construction (*čtoby* + X_{inf} + *nado čtoby* Y) in fact also prevents a correct interpretation in the following personal sentence, where the intended meaning is that the subject of the infinitive is coreferent with the INANIMATE subject of the subordinate clause (‘planet earth’):

- (30) ?**Čtoby rastekat’sja, nado, čtoby zemlja nakalilas’.**
 in.order crack-INF, need that earth-NOM heat-PST

[corresponding sentence in English: ‘In order to split open, it’s necessary that the earth heats up.’]

As will be argued in the following sections, because the infinitive presupposes the idea of a subject (first participant), which has to be contextually provided, and because the default interpretation of the infinitive subject is an animate (generic, arbitrary), infinitives of meteorological impersonals are not acceptable or marked in most contexts.

4.2. *Complement of an auxiliary verb: Infinitives accepted*

As mentioned previously, there is only one syntactic context in which there are no restrictions on the use of an infinitive of an impersonal verb, namely in sentences where the infinitive functions as the complement of an auxiliary verb. As has also been observed, infinitive complements of auxiliary verbs differ syntactically from other infinitives in Russian. The main reason to assume this difference is the nominative case assignment of *sam* and *odin* in sentences

such as (18) and (19). Based on earlier observations by Comrie (1974), Franks (1990) argues that the nominative subject is assigned in those contexts where the infinitive can be seen as a verbal phrase (VP), whereas in contexts where the dative subject is assigned, the infinitive functions as a complementizer phrase (CP) or clause if a complementizer is absent. That the infinitive and the auxiliary form a complex predicate is an important feature of such a VP. A similar view can be found in Babby (2009), as discussed in the previous section, who also asserts that infinitive complements of auxiliary verbs must be analyzed as infinitive phrases, which form a complex predicate with the auxiliary verb.

In my view, the syntactic analyses mentioned here can certainly be complemented with a semantic dimension (see also Fortuin, 2003). Auxiliary verbs indicate a phase of a particular situation (e.g. ‘to begin X’) or a modal relation with a particular situation (‘to want to X’). The situation expressed by the auxiliary not only forms a complex predicate with the infinitive syntactically, but also semantically, since they refer to a complex single event. This complex event conceptual structure explains why the auxiliary verb can inherit the impersonal status of the infinitival verb as described by Babby (2009). Phrased differently, the conceptual structure (‘complex event’) is reflected in the syntactic structure with an IMPERSONALLY MARKED auxiliary, which forms a complex predicate with the impersonal infinitive. As a result the infinitive is not associated with agentive features.

4.3. Infinitives occurring with a subordinator

As I have discussed above, not all subordinators are created equally with respect to the use of infinitives of impersonals: with some subordinators, infinitives of impersonals are acceptable, whereas with others they are excluded. The data can be summarized as follows:

Infinitives of meteorological impersonals are acceptable:

- Subordinator *pered tem kak* ('just before');
- Subordinator *vmesto togo čtoby* ('instead of');

Infinitives of meteorological impersonals not acceptable:

- Subordinators of purpose with *čtoby*;
- Subordinator *esli* ('if');
- Sentences with *sliškom/dostatočno* and the subordinator *čtoby*;

As I will argue, the reason why some subordinators are fully incompatible with impersonal infinitives is that they presuppose the feature of [+agent]. This means they presuppose a human, usually intentional first participant of the situation expressed by the predicate. The clearest example of such a subordinator is *esli*. The conjunction *esli* can be combined with an infinitive in sentences such as the following:

- (31) **Esli vstavat'** rano, uvidiš' rassvet. (Bricyn, 1990)
 if get.up-INF early see-2SG.FUT.PFV sunrise
 'If one is to get up early, one will see the sun rise.'

According to Bricyn (1990), in sentences with [*esli* 'if' + infinitive], the subject of the infinitive is obligatorily animate and generic ('you', 'one', 'people in general including the speaker').

This explains why sentences such as the following, where the subject of the infinitive is coreferent with a third person subject in the main clause, and not generic, are not acceptable¹¹:

¹¹ The construction is possible with first person subjects in the main clause if the infinitive subject can be interpreted as a generic subject:

- (1) Esli **govorit'** prosto, to my stremimsja byt' lučšim universitetom v mire (...).
 if talk-INF simply, then we try be-INF best university in world

- (32) * **Esli vstavat'** rano, on uvidit rassvet. (Bricyn, 1990)
 if get.up-INF.IPFV early he see-3SG.FUT.PFV sunrise
 'If he is to get up early, he will see the sun rise.'
[mean acceptability 2.43]

I have not found any examples of sentences like (32) in the RNC and on the Internet.

Furthermore, in our survey the mean acceptability of (32) was under 3 ('not sure about the acceptability), which corroborates the analysis by Bricyn (1990) that the subject of the infinitive of infinitival *esli* clauses can only be generic. The same rule also explains why sentences with *esli* cannot occur with non-animate subjects or weather verbs, because the subjects of such verbs cannot be associated with a generic subject:¹²

- (33) * **Esli morozit'**, to budet očen' xolodno.
 if freeze-INF.IPFV then will.be very cold
 'If it is to freeze, it will be very cold.'
[mean acceptability 2.60]

Similarly, the construction [*čtoby* ('in order to') + X_{infinitive}][*nado, čtoby* Y ('it is necessary that Y')], as in (9), cannot be combined with an impersonal infinitive, because it presupposes a human intentional agent. The meaning of this construction can be paraphrased with 'If (a person) strives for X, then Y is necessary' (cf. von Stechow & Iatridou, 2007). Obviously, this

'If you want to put it simply, we try to be the best university in the world.' (RNC)

¹² Note that the infinitive subject may get a non-generic reading or occur with non-animate subjects if the subject of the infinitive is associated with a dative noun in the subordinate clause. However, since meteorological impersonal verbs have no subject that can occur in the dative, they cannot occur in this construction.

purposive and instrumental meaning is not in accordance with the semantics of an impersonal meteorological verb.

The feature [+agent] also plays a part in the case of the construction with the degree expression *sliškom* ‘too’ or *dostatočno* ‘enough’, and a subordinate clause introduced by *čtoby*, as in (11). This construction has a different semantic-syntactic structure than the other two constructions with a subordinator discussed above. In contrast to those, the construction is a comparative-like construction. The subordinate clause is not an inherent or obligatory element of the construction, but expresses the consequences of the degree expressed in the main clause. In the case of the construction of degree, the consequences expressed by the subordinate clause have a modal character. More specifically, the subordinate clause presupposes a human agent that is able or unable to do something. Informally, the construction [*dostatočno* X, to Y] means that the degree (or quantity of) X is such that Y can be realized. From my standpoint, this modal character of the construction explains why it is not possible to use an infinitive of an impersonal in this particular construction.

I will now turn to the subordinators that can be combined with infinitives of impersonals, namely sentences with *vmesto togo čtoby* (‘instead of’), and *pered tem kak* (‘just before’). The meaning of [*vmesto togo čtoby* X_{INF}, Y] can roughly be paraphrased as ‘one could think that X would occur, but Y occurred’. This subordinator does not presuppose the semantic feature [+agent], because of which it is perfectly in accordance with an inanimate subject or impersonal verb. Furthermore, the data from the corpus (RNC) show that the large majority of sentences with this conjunction have an infinitive predicate, and that the use of a finite predicate is very infrequent. It may be that this factor further contributes to the preference for infinitives, even in the case of impersonal weather verbs.

Similarly, the subordinator *pered tem kak* does not presuppose the feature [+agent], but merely indicates that the situation described in the subordinate clause occurs just before the situation expressed in the main clause. It should be noted here that even though the use of infinitives of impersonal weather verbs is possible with *pered tem kak*, the finite counterpart is

preferred. This was illustrated earlier with example (7), which had a mean acceptability of 3.53 in our survey, whereas its finite counterpart had a mean acceptability of 4.19. Data from the Internet indicate a corresponding tendency. A search on the Internet (via Google and Yandex) for the conjunctions *pered tem kak*, and *do togo kak* and the impersonal verbs (*po*)*xolodat* ('get cold'), *morozit* ('freeze'), and *smerkat 'sja/smerknut 'sja* ('get dark') resulted in five instances with an infinitive, all with *pered tem kak*, and 26 instances with a finite verb (eighteen instances with *do togo kak*; eight instances with *pered tem kak*).¹³ Even though the conjunction *pered tem kak* typically occurs with an infinitive predicate (Fortuin, 2006), this suggests more examples were confirmed with a finite weather verb than with an infinitival weather verb on the Internet. There must be an explanation accounting for both properties. Why are such sentences possible, and why are they also restricted? To answer the first question, the conjunction *pered tem kak* does not necessarily presuppose the idea of an intentional human agent. As such, the use of infinitives of impersonals is not fully blocked. The reason why infinitives of impersonal weather verbs are acceptable, even though in the same context the finite counterpart is preferred, can probably therefore be attributed to the general restrictions on impersonal infinitives in constructions with a conjunction and an infinitive clause.

Finally, I will discuss a construction without subordinator that has not been discussed thus far, one that cannot be combined with infinitives of impersonal verbs. This construction contains a non-verbal predicate such as *nevozmožno* ('impossible') or *trudno* ('difficult'), which typically expresses a state that can be experienced by people, similar to English constructions such as *It's difficult to X*; *It's time to X*, etc. An example of this construction is given below with the non-verbal predicate *trudno* ('difficult'):

- (34) Rabotat' bylo trudno.
 work-INF be-3SG.N.PST difficult-PRED

¹³ In the case of the verb *smerkat 'sja*, the construction contained a finite form of *načat'/načinat* 'begin', and an impersonal infinitive. These instances are counted as finite.

‘It was difficult to work.’

The non-verbal predicate occurs with a neuter singular form of the verb ‘to be’ (*byt’*) (which is not expressed in the present tense in Russian). In (34) the subject of the infinitive is either interpreted as contextually given (e.g. associated with the speaker), or as a generic subject (‘one’, ‘people in general’). By using a dative noun or pronoun, the subject of the infinitive may be associated with a specific person who functions as the experiencer of the state expressed by the predicate:

(35) Mne bylo trudno rabotat’.
I-DAT bes-3SG.N.PST difficult-PRED work-INF
‘I found it difficult to work.’

What about the use of impersonal weather verbs in this construction? Since non-verbal predicates like *trudno* or *nevozmožno* express states that can be experienced by people, they cannot be combined with impersonal weather verbs, for example:

(36) * V Afrike nevozmožno morozit’.
in Africa impossible freeze-INF
[corresponding sentence in English: ‘In Africa it’s impossible for it to freeze.’]

The construction [*nevozmožno* + infinitive] expresses internal possibility (ability, capacity), which presupposes a human agent. This is semantically incompatible with impersonal weather verbs. As is shown by the translation of (36), a similar restriction also occurs in the English [*impossible* + infinitive] construction, where coreference is established by using *for it*. The predicate *nevozmožno* can, however, occur with an impersonal finite verb in sentences that are introduced with a subordinator (*čtoby*), as in (37):

- (37) Nevozmožno, čtoby morozilo v Afrike.
 impossible-PRED that-IRR froze in Africa
 ‘It is impossible that it freezes in Africa.’

Such sentences express a different kind of modality, one that is closer to epistemic modality (‘it can’t be true that the situation expressed by the infinitive is the case’). For this reason, this construction is not incompatible with meteorological verbs.¹⁴

The only non-verbal predicate that was evidenced with impersonals is the predicate *rano* (‘early’), as in (38):

- (38) **Rano, rano** ešče svetat’, rabota ne sdelana.¹⁵
 early-PRED early-PRED still get.light-INF work not done
 ‘It is still too early to get light, the work isn’t done yet.’
 [*mean acceptability 3.57*]

A possible explanation is that *rano* is less strongly associated with a human subject than the other non-verbal predicates. In other words, the concept expressed by *nevozmožno* and an infinitive is associated with a human (expressing internal possibility, ‘being able to’), whereas *rano* expresses a point on a scale ranging from ‘early’ to ‘late’ – this concept is not inherently associated with a human participant. Furthermore, the construction [*rano* + infinitive] expresses a relative property (‘too early’), and the infinitive SPECIFIES in what respect this property applies: (‘early with respect to X’). If a dative is expressed, it does not express a prototypical experiencer, but rather the person with respect to whom the situation expressed by the predicate and the infinitive applies:

¹⁴ The construction [*nevozmožno* + *čtoby* + infinitive] seems to be very restricted in Russian. In the RNC only two examples were found. These examples seem to express ability rather than epistemic possibility.

¹⁵ <www.proza.ru/texts/2004/05/21>

(39) A mne ešče **rano** **umirat**'. (RNC)

but I-DAT still early-PRED die-INF

'It is still (too) early for me to die.'

As such, it differs from prototypical 'experiencer' predicates such as *trudno* 'difficult', as in (35). With this predicate it is communicated that that the subject expressed by the dative form experiences the realization of the infinitive situation by him as difficult. Such experiencer semantics – inherently associated with a human subject – are absent with *rano*. This makes *rano* a more likely candidate to be combined with impersonal weather verbs than other non-verbal predicates. However, because the [predicate + infinitive] construction is easily associated with an agentive meaning, sentences like these may easily suggest would-be control over the circumstance of getting light, as if there might be a human subject somehow responsible for the fact that it becomes light. As such, they are not stylistically neutral and still demonstrate the typical agentive semantics associated with the infinitive.

4.4. Infinitives and agentivity from a cross-linguistic perspective

I have argued that the absence of person marking and the association with a human (generic) subject is one of the main factors that trigger the restriction on impersonals. One could expect to see similar features across languages, since absence of impersonal marking is a feature of infinitives in other languages as well. A cross-linguistic analysis falls out of the scope of the present discussion, but I will make a few remarks and observations.

If we examine Italian, a Romance language, we can perceive both similarities and differences. Italian impersonal meteorological verbs are comparable to Russian impersonal meteorological verbs. In both languages, these verbs do not have any arguments in their argument structure (see also Babby, 2009, p. 261), and they occur without expletive. As in

Russian, there are no restrictions on infinitives of impersonal weather verbs if they are used as complements of an auxiliary. Furthermore, similar to Russian, the use of impersonals with non-verbal predicates like *possibile* ('possible') is not acceptable, because it suggests an agentive reading:

(40) * E' possibile piovere in Africa.

is possible rain-INF in Africa

(41) E' possibile che piova in Africa.

is possible that rains in Africa

'It's possible for it to rain in Africa.'

Of course, the same is true for English, where *It's impossible to rain* is not acceptable, either. Italian differs, however, from Russian with regard to the use of infinitives that occur with conjunctions. In Italian the following conjunctions can occur with an infinitive predicate: *per* ('in order'/'to'), *prima di* ('before'), *dopo* (+ *aver*; 'have') ('after'), *senza* ('without'), *invece di* ('instead of'), *oltre ad* ('besides'), *fino a* ('until'). Each of these conjunctions can occur with infinitives of impersonal weather verbs. Below some examples from the Internet are given:

(42) **Prima di piovere**, lampeggia.

before rain-INF lightens

'Before it rains, there is lightning.'

(43) Qui **invece di nevicare**, piove.

here instead of snow-INF rains

'Here it rains instead of snowing.'

(44) **Oltre a nevicare** sul resto del nord nevicano anche in Liguria?

besides snow-INF in rest of north snows also in Liguria

'Besides snowing in the rest of the North, it also snows in Liguria?'

- (45) Inizialmente tuonava lontano, poi ha cominciato ad avvicinarsi
 First thundered far.away afterwards has started to get.closer-INF
 sempre di più **fino a tuonare** dietro la spiaggia.
 always more until thunder-INF behind the beach
 ‘First the thunder was far away, but then it started to approach until there was thunder behind the beach.’
- (46) Dopo una pausa di circa 1 ora **senza nevicare** sta ricominciando!
 after a break of about 1 hour without snow-INF is starting.again
 ‘After a break of about one hour without snowing, it started again.’

Like in Russian, both the subordinate clause and the main clause contain an impersonal verb in the examples given above. Sentences like these, with infinitives of impersonal verbs, seem to be relatively frequent in Italian. Data from the Internet found using Google suggest that the infinitive is used even more frequently than its finite counterpart.

Note, however, that the restrictions occurring in Russian are not an idiosyncratic phenomenon of Russian. Similar restrictions apply, for example, to Dutch. This can be illustrated with the conjunction *door(dat)* (‘because’, ‘by’), which can occur both with personal and impersonal finite verbs, but only with personal infinitives. This explains why (47), with a finite form of the impersonal meteorological verb *vriezen* (‘freeze’) and the expletive *het* (‘it’), is acceptable, whereas its infinitival counterpart in (48) is not:¹⁶

¹⁶ As in Russian, there also seem to be differences between impersonal verbs with respect to their use. Note, for example, that the impersonal transitive verbs *duizelen* (‘feel dizzy’) or *dagen* (‘remember’), as in (1), can only be infinitival if the infinitive functions as the complement of an auxiliary verb, as in (2):

- (1) Het **duizelt** me.
 it make.dizzy-3SG me
 ‘I am feeling dizzy.’
- (2) Het **begon** me **te duizelen**.
 it started-3SG me to make.dizzy-INF
 ‘I started to feel dizzy.’

(47) Doordat het vriest, kan het sneeuwen.

because it freezes, can it snow-INF

‘Because of the frost, it can snow.’¹⁷

(48) *Door te vriezen, kan het sneeuwen.

because to freeze-INF can it snow-INF

[corresponding sentence in English: ‘Because of the frost, it can snow.’]

These data seem to suggest that there are some cross-linguistic similarities between Russian, Italian, Dutch and English, but also some differences. In all these languages, including Dutch, there are no restrictions on infinitives of impersonals if they are used as complements of auxiliaries (modal and phase verbs). Furthermore, in all these languages, the use of infinitives of impersonal verbs is unacceptable with non-verbal predicates like ‘possible’. This is also the case in Dutch; cf. (40), with the following Dutch example:

(49) * Het is onmogelijk om te regenen in Afrika.

it is impossible in.order to rain-INF in Africa

‘It is impossible for it to rain in Africa.’

There are, however, some differences with respect to the use of infinitives with conjunctions.

More specifically, in Italian there seem to be few or at least fewer restrictions on infinitives of

It is not possible to use the infinitive of these verbs with subordinators. As such they differ from meteorological impersonals, which can be infinitival with some subordinators. This is at least true for the meteorological verb *sneeuwen* (‘snow’) and the subordinator *in plaats van* (‘instead of’) (cf. (48)):

(3) Toen we daar aankwamen, bleek het te regenen in plaats van te sneeuwen.

when we there arrived, turned.out it to rain-INF instead of to snow-INF

‘When we arrived, it turned out to rain, instead of snowing.’

(example taken from the Internet: <http://www.klasse.be/leraren/archief/13347>)

¹⁷ A more literature translation of the Dutch sentence would be ‘Because it freezes, it can snow.’

impersonal verbs than in Russian or Dutch in these contexts. The data suggest that Italian [subordinator + infinitive] constructions are less easily associated with agentive features than comparable Russian constructions. English differs from both Russian and Italian in having very few subordinators that can be combined with infinitives. Instead, English uses a gerund with most subordinators (e.g. *instead of, without, before, after*). The subordinator (*in order*) *to*, which can be combined with an infinitive, cannot be combined with an infinitive of an impersonal verb if the verb has a clear purposive meaning (as in the translation of (9), *without for it*).¹⁸

Obviously, in explaining such cross-linguistic similarities and differences, an explanation like the dative subject hypothesis provided by Perlmutter and Moore (2002) is not very helpful, since it fully relies on a language-specific factor of Russian (the presence of a dative subject of the infinitive) for which there is no evidence in English, Italian and Dutch. How, then, should both the similarities and the differences be accounted for? The most important similarities can be reduced to the fact that in all four languages, as a general rule, the identity of the subject of the infinitive must be established by coreference, or is interpreted as a generic subject. In all four languages, if restrictions on infinitives of impersonal verbs occur, they are connected to the impossibility of providing the infinitive with an impersonal interpretation. Furthermore, determining the impersonal status of the infinitive is difficult in sentences with a non-verbal predicate in all four languages, whereas no such problems arise in sentences where the infinitive is used as a complement of a finite verb. Constructions where the infinitive occurs with a subordinator represent a diverse picture, as there are clear differences between the different languages. The data suggest that in Italian, infinitives are less verbal and much more action nominals when compared to Russian. As such, Italian infinitives may share

¹⁸ I do not want to conceal that there is one difference between English and Russian for which it is difficult to account. In Russian, infinitives of impersonals are not acceptable with *sliškom* ('too'), as in (11), but in English the corresponding construction seems to be acceptable, for example: *Is it ever too cold to snow?* (Example taken from C. D. Ahrens, 2007. *Meteorology today: an introduction to weather, climate, and the environment*. Thomson/Brooks/Cole, Belmont, USA, p. 164). A relevant factor that should be considered is that in Russian the same construction is in fact not very acceptable with a finite meteorological verb, either (mean acceptability 2.98). This suggests that the construction as such blocks meteorological impersonal verbs.

similarities with categories like gerunds or deverbal nouns. This is in accordance with other independent evidence. For example, note that in Italian infinitives of impersonal verbs can also be used with determiners or demonstrative pronouns, forms which can only be combined with nominal forms:

(50) questo nevicare
this rain-INF
'this raining'

(51) il nevicare
the rain-INF
'the raining'

Russian has no determiners, but the use of demonstrative pronouns with infinitives is ungrammatical: **èto morozit'* (that freeze-inf). Another feature of Italian infinitives that indicates a different status is that impersonal infinitives can also be used in contexts where there is no other impersonal verb present in the context, for example:

(52) Se continua l'umido, senza piovere troppo, potremmo tornare sul Morello.
if continues.3SG the moist, without rain-INF too could.2PL return on Morello
'If the moist continues [it continues to be moist], without raining too much, we can return to the Morello [mountain].

This may perhaps also be linked to the general tendency of Italian (or Romance languages in general) to use non-finite forms (participles, infinitives, nominalizations) where Germanic languages, and perhaps also Russian, tend to use finite forms (see, e.g. Korzen 2008). Besides these factors, there may be other aspects at play as well, such as the status of the temporal conjunctions in Italian, which can also function as prepositions, e.g. *prima della fine* ('before

the end’). In order to evaluate whether these factors are relevant, further cross-linguistic research is needed, including an acceptability survey for the various languages.

4.5. Other impersonal verbs and constructions

Perlmutter and Moore (2002) argue that the restriction on infinitives of impersonals holds for ALL impersonal verbs or constructions, not just for meteorological verbs. They illustrate this with various examples, including examples of the accusative human experiencer construction, as in (53), which cannot be infinitival, as in (54):

(53) Menja tošnit. (2002, p. 628)

me-ACC nauseate-3SG-N

‘I feel nauseous.’

(54) *[čtoby menja tošnit’ zimoj] (2002, p. 628)

[in.order me-ACC nauseate-INF winter-INSTR]

‘in order for me to feel nauseous in the winter’

It should be noted, however, that infinitives of accusative impersonal verbs are evidenced on the Internet, most specifically in sentences with the conjunctions: *vmesto togo čtoby* and *pered tem kak*.¹⁹

¹⁹ In the RNC one example was evidenced of a conjunction and infinitive of an accusative experiencer verb (the verb *lixoradit* ‘be feverish’):

(1) Vozmožno, što ustrojus’ na stabil’nuju, priličnuju rabotu, s tem, čtoby
 possible that arrange-1SG for stable nice job so.that
 ne **lixoradit**’ v ožidanii otveta iz Prokuratury. (RNC)
 not be.feverish-INF in anticipation answer-GEN from prosecutor’s.office
 ‘Perhaps I’ll arrange a stable nice job, so that I won’t have to feel feverish while waiting for the answer from the prosecutor’s office.’

The native speakers I consulted found this sentence rather marked, even though some of them considered it to be acceptable. One of the native speakers suggested that it is the impossibility to build other

(55) I **vmesto togo čtoby stošnit'**, menja načalo korčit'
 and instead.of throw.up-INF I-ACC began.3SG-N writhe-INF
 ot smexa.²⁰
 from laughter

‘And instead of getting sick (throwing up), I started to writhe with laughter.’

[mean acceptability 3.91; mean corresponding finite construction 3.00]

(56) [P]rimerno raz v polčasa/čas ee tošnit.
 about once in half.our/hour she-ACC throws.up-3SG

(pered tem kak stošnit' ona plačet).²¹

before throw.up-INF she-NOM cry-3SG-PRS

‘About once every half hour/hour she [= the cat] throws up (before throwing up, she cries).’

[mean acceptability 3.29]²²

Other instances were confirmed on the Internet as well, but these were on average judged to be unacceptable in our survey, e.g.:

(57) I postepenko skatyvaetsja k patetike. Ee ne **tak mnogo**,
 and constantly gravitates to patheticism she-GEN not so much

constructions with the intended meaning that makes the construction acceptable. Because of this, the usually impersonal intransitive verb is compelled (“coerced”) to instead become a personal intransitive verb. An alternative explanation is that *lixoradit'* is used as a regular personal intransitive verb. This use exists in Russian, even though it is archaic (see, e.g. Ožegov, 1972).

²⁰ <asya72.livejournal.com/2006/08/30/>

²¹ <www.mgks.zooclub.ru/questions.php?idconsult=5&page=5>

²² The finite counterpart of this sentence was not included in the survey. In order to gain some insight into the difference between the infinitival and the finite construction, we conducted a small-scale test by asking ten native speakers of Russian to indicate whether they preferred the version with the infinitive or the version with the impersonal finite verb (*pered tem kak ee tošnit* ‘before she vomits (before she-acc vomits-3sg).’ Three out of ten people preferred the infinitive. Note that in this sentence, it is the sentence preceding the subordinate clause, and not the main clause, that contains a finite impersonal verb.

čtoby stošnit', no i ne tak malo, čtoby ne zametit'.²³

in.order nauseate-INF but also not so little in.order not notice-INF

'And it constantly tends to get pathetic. Not that much as to make one nauseous, but not that little to not notice it, either.'

[mean acceptability 2.29]

Furthermore, it is probably not a coincidence that all the verified examples of infinitives of accusative experiencer verbs contain infinitives of *(s)tošnit'/(vy)rvat'* ('throw up'), and that no examples are evidenced as containing infinitives of *(za)znobit'* ('shivering'). A possible explanation is because of the presence of different forums where people can pose questions to doctors about health, and where the topic of 'vomiting' is simply a more popular topic than 'shivering'. One could also hypothesize that there is a semantic reason why verbs expressing 'throw up' would behave differently from verbs expressing 'shivering'. Since *čtoby* presupposes a goal-oriented action, it can only be combined with accusative experiencer verbs if the verb can be interpreted as the indirect result of this action. Perhaps, in the case of such verbs, even the use of the infinitive is (marginally) possible, because the infinitive easily suggests an agentive subject. In contrast to the idea of 'throwing up', the occurrences of 'shivering', or 'having a fever' are less easily considered as something semi-controllable. This probably blocks the use of an infinitive of these verbs altogether, but allows for the use of a finite verb. The relation between the infinitive and the idea of 'control' or 'agency' may also explain why in constructions where *čtoby* does not indicate a goal, the use of infinitives of verbs like *(s)tošnit'* ('feel sick', 'throw up') is less restricted. Additionally, it is possible that the use of infinitives of verbs like *stošnit'* is facilitated in modern informal Russian because there is a personal transitive use of this verb. Examples of this use can in fact be verified on the Internet and in the RNC, but are considered to be ungrammatical according to our survey:

²³ <<http://ajvideo.narod.ru/AIFilm/LastSamurai.htm>>

- (58) Nedeli dve nazad on **stošnil** ves' zavtrak (...).²⁴
 week two ago he threw.up-3SG-M whole-ACC breakfast-ACC
 'A week or two ago, he threw up his whole breakfast.'
 [mean acceptability 2.55]

As such, sentences like these must be regarded as substandard. In order to test whether people who accept infinitives of (*s*)*tošnit*' do so because, for them, it is an impersonal verb, it was investigated whether there is a correlation (Pearson) between the acceptability score that individuals assign to infinitives of (*s*)*tošnit*' and the score they assign to personal use of (*s*)*tošnit*' as in (58).²⁵ The results of this test are given in Table 1.

Table 1

Correlation acceptability infinitival of impersonal (*s*)*tošnit*' and finite transitive personal use

Number of sentence	Correlation with acceptability of (58)
(55)	8% (p = 0,559; not significant at the 0,05 level)
(56)	26% (p = 0, 042)
(57)	43% (p = 0,001)

This test shows that there is indeed a very weak correlation between the rating of the personal use in (58) and the infinitival use in (56) with *pered tem kak* and a strong correlation between

²⁴ <www.webapteka.ru/veterinary_arc/.../p34.html>

²⁵ An argument against this hypothesis is that in (56) we find an infinitive of (*s*)*tošnit*' and an impersonal present tense use in the same fragment, indicating that people who employ the infinitival form of the construction also use the regular finite impersonal construction. However, it may be that some people allow for different versions of the construction: (i) impersonal (intransitive) use, (ii) personal (transitive) use and (iii) personal (transitive) infinitival use.

the personal use and the infinitival use in the case of (57). However, there is no significant correlation with the personal use in (58) in the case of (55) with *vmesto togo čtoby*. In the latter case this is because this sentence is considered to be acceptable by people that do not accept personal transitive use of *(s)tošnit'*.

These data could be taken as an argument that, in the case of verbs expressing vomiting, use of the infinitival form is possible at least for some speakers, because in this case the infinitive is not interpreted as an impersonal but as a personal verb, something that is not in accordance with normative standard Russian. Note, however, that the correlations given earlier do not necessarily or strictly point to a relation of cause and effect (people that accept infinitives of accusative experience verbs do so BECAUSE for them it is a personal usage). Instead, it may be that some people that accept infinitives of *(s)tošnit'* or *(vy)rvat'* (partly) do so because they are liberal with respect to what is acceptable or not acceptable.

At this point it is important to stress that the sentences discussed here are to a large extent peripheral; this even includes the sentences that were judged to be quite acceptable in the survey. To give an example, the standard way to express a relation of anteriority between an event like 'throwing up' and another event is the use of a nominalization, instead of an infinitive or even a finite verb. In the RNC three examples were determined with the preposition *pered* ('before') and the nominalization *rvota* ('vomit'), whereas no examples were found with *pered tem kak* and an accusative experiencer verb. Furthermore, combinations such as *pered pozvyvom rvoty* 'before the urge to throw up (before urge-instr vomit-gen)' or *pered nastupleniem rvoty* 'before the start of the throwing up (before start-instr vomit-gen)' can be found quite frequently on the Internet, and have a high acceptability score, e.g.:

- (59) Pered pozvyvom rvoty u rebenka podnjalas temperatura.
 before urge vomit-nmlz-gen at child rose temperature
 'Before the urge to throw up [occurred], the temperature of the child rose.'

[mean acceptability: 4.28; median 5]

It is important to note that with other impersonal verbs or constructions, as discussed by Perlmutter and Moore (2002), there are no exceptions and the restriction fully applies.

Impersonal sentences with a genitive of negation or a non-verbal predicate, such as (60) and (61), respectively, were not evidenced on the Internet:

(60) *[čtoby v prudu ne **plavat'** kuvšinok] (P&M, 2002, p. 626)

[in.order in pond not float-INF water lilies-GEN]

[corresponding meaning in English according to P&M: 'in order for there not to be any water lilies floating in the pond']

(61) *Vmesto togo čtoby **byt'** **grustno**, mne bylo veselo.

instead.of, be-INF sad-PRED, I-DAT was-3SG-N happy-PRED

[intended meaning in English: 'Instead of feeling sad, I felt happy.']

Sentences with the non-verbal predicate *žal'*, such as the following, were evidenced very infrequently on the Internet, and were considered non-acceptable in the survey:

(62) *Čtoby Borisu **byt'** **žal'** sobak (P&M, 2002, p. 628)²⁶

in.order Boris-DAT be-INF sorry-PRED dogs-ACC

[intended meaning in English: 'in order for Boris to feel sorry about the dogs']

²⁶ On the site <lyrics.filestube.com> two examples were found with an infinitive of *žal'* ('feel sorry'), in both cases translations of English song texts. In our survey we tested the following example: *Ěto sliškom pozdno čtoby byt' žal'* 'It is too late to be sorry (that too late-pred to be-inf sorry-pred).' This sentence had a mean acceptability of only 1.28 (ungrammatical).

Finally, despite that very few instances of infinitives of reflexive impersonal verbs with a dative subject were substantiated, such as *rabotat'sja* 'to (feel like) working', the native speakers I consulted did not consider these sentences acceptable:

- (63) *[čtoby Borisu **rabotat'sja** doma]²⁷
 in.order Boris-DAT work-REFL-INF at.home

[intended meaning in English according to P&M (2002, p. 628): 'in order for Boris to be able to work at home'].

One can hypothesize that meteorological verbs behave differently from other impersonal verbs or constructions because their impersonal character is an inherent part of their argument structure (other than, for example, the genitive of negation construction). Moreover, they are not associated with experiencer semantics, as in the case accusative experiencer verbs or impersonal reflexive verbs, which usually require the expression of a dative or accusative form. To what extent it is possible to provide a general explanation for all impersonal verbs, or whether each verb or construction has to be explained differently, is something that falls beyond the scope of this analysis.

5. Conclusion and further remarks

²⁷ It should be noted that, on the Internet, instances with *čtoby* ('(in order) to') and an infinitive of *rabotat'sja* (work-refl) are evidenced, for example in the construction of degree: *Material ètix trub obyčno byl (...) dostatočno mjagkim, čtoby rabotat'sja takimi instrumentami.*

<www.smichok.ru/tag/kotoroe/> 'The material of those pipes was usually soft enough to be able to work well with such instruments (material-nom those-gen pipes-gen usually was enough soft-adj to work-refl such-instr instruments-instr).' However, since the same verb is also used as a personal verb on the Internet, it is difficult to establish whether the infinitive must be analyzed as an impersonal verb or not. In addition, according to the native speakers I consulted, this sentence is not acceptable, or at least very marked.

This article has provided an analysis of the restriction on infinitives of impersonal verbs in Russian. In contrast to the existing analysis by Perlmutter and Moore (2002), and in the same vein as the formal analysis given by Babby (2009), I have argued that this restriction is not connected to case assignment. Instead, I have shown that the data can be explained with reference to various morphological, syntactic and semantic factors.

The infinitive is not morphologically marked for its impersonal status, and the impersonal status of the infinitive is only triggered – at least in some syntactic contexts – if there is another impersonal verb present in the context. If no other impersonal verb is present, the subject of the infinitive is interpreted as a human (generic or arbitrary) subject. Only if the infinitive occurs as the complement of an impersonal auxiliary verb is the infinitive interpreted as an impersonal verb. This results from the fact that the situation expressed by the auxiliary and the situation expressed by the infinitive together express a complex single event, as well as form a syntactic unit. If the infinitive occurs with a subordinator, the infinitive is strongly associated with an agentive subject, and the interpretation of the infinitive as an impersonal is blocked. However, with some impersonal verbs, particularly meteorological verbs, and in some constructions, particularly constructions that do not presuppose human or agentive subjects, impersonal infinitives are (sometimes marginally) acceptable. Instances such as these suggest that the underlying explanatory factor is not case assignment, and that both syntactic and semantic factors play a part in the interpretation of the data.

It is my belief that the explanation I have given here is formulated in such a way that it can be invalidated by new data, and, in the same vein, can make predictions with respect to new data. An example of a potential contradiction to my explanation would be a subordinator that is not associated with agentive semantics but nonetheless blocks infinitives of meteorological impersonals. Since I have given a fairly complete overview of the Russian data, the existence of this potential contradiction is, of course, largely hypothetical. Note, however, that my explanation also makes predictions about infinitives in other languages. On the basis of my analysis one can predict the occurrence of similar restrictions on infinitives of impersonals,

provided that the infinitive is associated with agentive semantics, as in Russian. In this analysis I have only briefly compared Russian to Italian and Dutch, and indicated that Dutch shows similarities to Russian with respect to the use of infinitives of impersonals, but a typological analysis would be a welcome addition to my interpretation. In addition, some claims I have made could be corroborated or challenged by psycholinguistic research. Psycholinguistic research could investigate, for example, whether or not the claim that Russian infinitives are easily associated with human subjects or agentive features is true. I leave these issues for further research.

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Appendix

Frequencies and statistics

Sentence number	Mean	Median	Std Deviation
(7)	3,53	4,00	1,231
Finite counterpart (7)	4,19	5,00	1,115
(8)	3,31	4,00	1,259
Finite counterpart (8)	2,55	2,00	1,300
(9)	1,79	1,00	1,196
Finite counterpart (9)	3,17	4,00	1,403
(10)	2,60	2,00	1,401
(38)	3,57	4,00	1,313
(11)	2,16	2,00	1,073
Finite counterpart (11)	2,98	3,00	1,207
(32)	2,43	2,00	1,117
(33)	2,60	2,00	1,401
(55)	3,91	4,00	1,204
Finite counterpart (55)	3,14	3,00	1,432
(56)	3,29	4,00	1,228
(57)	2,29	2,00	1,185
(58)	2,55	2,00	1,259