A Study on Modal Predicates of Necessity in Russian*

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1. Introduction

Russian shows various kinds of predicates that are semantically characterized as modals expressing necessity(необходимость). To this category of modal expressions belong the impersonal modal predicatives (=MP, hereafter) such as НАДО, НУЖНО and НЕОБХОДИМО, the impersonal modal verbs (=MV) such as придается–PF/приходится–IMPF, следует, стоит, надлежит, полагается, and so on, and finally, ДОЛЖЕН, which has been referred to as a personal modal adjective (=MA).1) Syntactically, they occur with infinitive predicates (cf. examples in 1),2) but cannot be embedded in infinitive predicates (cf. example 2).3)

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1) In this paper, impersonal sentences are assumed to have no nominative NP, with which the predicate can agree. In contrast, personal sentences are those sentences where the nominative NP-predicate agreement is implemented. This paper does not deal with all modal predicates enumerated above, but rather limit its discussion to some representative predicates such as ДОЛЖЕН, НАДО/НУЖНО and придается/приходится; they show a relatively higher text frequency. The number of ДОЛЖЕН-sentences examined for this study is 227; НАДО/НУЖНО - 306; придается/приходится - 255. Some of the observations made in this paper were already discussed in Choi(1994a, b).
2) This paper does not adopt any specific theoretical framework, but utilizes some traditional generative terms useful for a description of the Russian modal predicates. Lexemes are cited in capitals, and word-forms in italics.
3) This property separates the predicates under discussion from such quasi-modal
The fact that these modal predicates constitute a natural class, however, does not mean that they are class-internally undifferentiated with respect to their semantic and syntactic behaviors. As traditionally recognized, MP and MV are impersonal modals that do not have a nominative-cased NP as their subject. True, this is an important syntactic feature, which distinguishes them from MA. However, MA does not always occur with a nominative NP, as shown in (3a).

(3) a. Ему должно быть веселым.
    'He must be merry.'

In (3a) должно obviously cannot be personal. In fact, the surface predicates as УМЕТЬ, ПОНАДОБИТЬСЯ и НУЖДАТЬСЯ, which can be used in the form of an embedded infinitive.

(i) Авторитет Ленина должен служить тому, что нужно партии сегодня и может понадобиться завтра. (DA, 195)
    'The authority of Lenin must serve for what is necessary for the party today and what may be needed tomorrow.'

(ii) А пока вождь не достиг единоличной власти, он должен уметь убеждать.
    (DA, 239)
    'But the leader has not yet attained personal power, he must know how to convince.'

4) ДОЛЖНО in this example should not be confused with archaic ДОЛЖНО, which is impersonal (cf. Chvany 1974; Kondrashova 1994, 266).
syntactic structure of (3a) appears very much similar to that of (3b), which is truly impersonal. Now the question is whether these two sentence types share an identical underlying structure. On the basis of a number of syntactic differences between MA and impersonal modals to be discussed in section 2, it will be argued that the differences stem ultimately from their difference in argument structure.

It has been observed (cf. Chvany 1974, Nakhimovsky and Leed 1980, Бондарко et al. 1990, Choi 1994a, etc.) that there are differences in semantics and usage between MA and impersonal modals. One notable difference in usage is that MA can express what has been called epistemic necessity. In contrast, the impersonal modals cannot express epistemic modality, being restricted to root (=non-epistemic) necessity. In section 3, it is claimed that MA's ability to express epistemic necessity has something to do with the absence of an external argument in its argument structure.

It has been traditional to utilize the conceptual distinction between epistemic and root modalities in providing a semantic description for modal expressions (Lyons 1977, Perkins 1983, Беляева 1985, Бондарко et al. 1990, etc.). As characterized elsewhere (cf. Choi 1997, 1999), this distinction is concerned with the kind of conditional relation holding between a certain situation and the situation expressed in the infinitival complement. This paper will demonstrate that there is another facet of the modal semantics, which involves the inferential mode of the conditional relation; namely, the distinction between abductive modality and deductive modality. Its relevance to a semantic description of the Russian necessity modals is justified by a semantic analysis of придётся/приходится, which are typical expressions for the deductive modality in Russian (cf. section 4).

The ultimate goal of this paper is to demonstrate, on the basis of the discussions in sections 2 and 3, that the two modal categories—personal modals vs. impersonal modals, and within the latter category, modal predicatives vs. modal verbs—form a hierarchical oppositional structure that is defined in terms of MARKEDNESS (cf. Andersen 2001, 22 et
passim). As will be shown in each section, the markedness principle according to which one of the two opposed terms will have a broader distribution and referential potential than the other predicts the differences in syntactic distribution and usage between personal modals (=Unmarked) and impersonal modals (=Marked), on the one hand, and between MP (=Unmarked) and MV (=Marked), on the other.

2. Syntax of modal predicates

This section discusses several syntactic differences between MA and impersonal modals and attempts to explain them in terms of their participant role/argument structure: namely, MA has a clausal argument only, whereas MP has two arguments, a clausal complement and an experiencer NP. The differences are discussed in this section as follows: (1) section 2.1 discusses the case and participant role of the matrix NP, (2) section 2.2 argues that the difference in participant-role/argument structure between MP and MA is responsible for their difference in combinatorial possibility of a ὁτὸς-clause, (3) in section 2.3 it will be shown that there are some restrictions on the MP’s infinitival complement, and finally (4) in section 2.4, MP’s inability to occur with infinitive predicates in the short form adjective will be discussed.

2.1 Case and participant role of the higher NP

5) Since MP subsumes MV with respect to distribution and usage, only MP will be cited and discussed. MV will be discussed separately in section 4. One thing to be mentioned is that the dative NP occurring with MP has been treated either as the subject (cf. Kondrashova 1994) or as the indirect object (cf. Moore & Perlmutter 2000). This issue is not crucial to my analysis: what matters here is that MP subcategorizes the dative NP carrying the participant role of experiencer.

6) I assume that all modal predicates, whether they are used epistemically or
MA normally occurs with the nominative NP (cf. 1c), but can conjoin with the genitive or dative NP (cf. examples in 4).

(4) a. хлеба-GEN должно хватать.
   'Bread must be sufficient.'
   b. БМУ-DAT должно быть 20 лет.
   'He must be 20 years old.'
   c. В настоящей рабочей, пролетарской семье не должно быть уголовников-GEN. (DA, 43)
   'A real working, proletarian family mustn’t have criminals.'

In these examples, the NP's case is obviously not determined structurally and has nothing to do with должно. The NP in (4a) is in the genitive because the infinitive verb хватить 'suffice' assigns the genitive to its complement; e.g., дела-GEN хватит на целый день 'There is enough work to last the whole day'. In (4b), the whole predicate быть 20 лет assigns the dative to the NP; in (4c), the semantics of negation in the infinitival clause motivates the genitive case. The case assignment for the NPs in (4a-c) then suggests the fact that each of them represents an argument that the lower predicate selects, rather than an argument that должен selects.7)

Moreover, their participant roles have nothing to do with the semantics of должен for example, the genitive NP-referent in (4a) participates in a situation represented by хватить. This observation leads us to suspect that

7) The dative NP occurring with должен (cf. 4b) could be seen as being either raised (i.e., quirky-case-marked subjects) or fronted; cf. Perlmutter (2000), who argues that the dative NP is not raised, but only fronted. In this paper, without any argument, the raising hypothesis is adopted.
the nominative NP in MA sentences (e.g., example 1c) is not really an argument of ДОЛЖЕН, but rather an element of the infinitival clause in the underlying structure; in other words, MA is one of raising verbs that do not select an external argument.

In contrast, MP occurs invariably with the dative NP, which refers to an experiencer of the modal situation of necessity (cf. examples 1a & b). In (1a = мне надо поехать домой 'I have to go home'), for example, the referent referred to by the dative NP, мне, is an experiencer undergoing the situation where the infinitival situation 'going home' is necessary. And the dative NP controls the subject (i.e., PRO) of the lower infinitival predicate, which suggests that MPs are control predicates. This explains ungrammaticality of the following sentences with the non-coreferential lower subject.

(5) a. *Хлеба надо хватить.
   'Bread must be sufficient.'

   b. *В настоящей, proletарской семье не надо быть уголовников.(DA, 43)
   'A real working, proletarian family mustn't have criminals.'

   c. *Ему надо быть 20 лет.
   'He must be 20 years old.'

There is no doubt that the unspecified dative NP in (5a) is not coreferential with the (raised) genitive subject (i.e., хлеба-GEN) of the lower infinitive predicate. Similarly, in (5b) the lower subject in the genitive of negation (i.e., уголовников-GEN) cannot be construed as representing a dative experiencer of the matrix situation. For a discussion on the ungrammaticality of example (5c), see section 2.3.

2.2. Combinatorial possibility of a чтобы-clause

As pointed out in the previous literature (Bondarko et al. 1990), MP may occur with a чтобы-clause, while MA may not. Let us discuss this
contrast in more detail. Consider the following sentences:

(6) a. Нам нужно, чтобы больной больше лежал.
   'It is necessary for us that the sick person should lie down more.'

b. Больному нужно больше лежать.
   'The sick person needs to lie down more.'

Obviously, the lower subject (expressed by больной) in (6a) is not referentially identical with the dative experiencer (expressed by нам) undergoing the modal situation of necessity; i.e., non-coreferentiality obtains between the dative NP and the lower subject. In (6b), where the infinitive situation is necessary for the sick person himself, however, the dative experiencer (= больному) undergoing the situation of necessity is the person that will perform the infinitive action: namely, the lower subject is PRO (cf. section 3.4 for more discussion). This contrast suggests that the two types of clausal complement are complementarily distributed and that the distribution can be described in terms of coreferentiality between the dative NP and the lower subject.9) Put in a slightly different way, the clausal complement that MP is subcategorized for can be either finite (e.g., 6a) or non-finite (e.g., 6b).

In contrast, MA does not occur with a чтобы-clause,10) as shown in (7a).

(7) a. *Долго, чтобы больной больше лежал.
   'The sick person must lie down more.'

b. Больной должен [т] больше лежать.

The ungrammaticality of (7a) is accounted for by the fact that MA

8) The modal verbs do not occur with a чтобы-complement, but the reason for this differs from that of the должен case (cf. section 4.2).
9) This will be elaborated later in section 2.3.
10) In section 4, I will discuss the problem of MV’s non-occurrence with a чтобы-clause.
selects no argument other than a clausal complement; i.e., there will be an empty subject position to be filled in. Coupled with the fact that Russian does not allow a pleonastic expression like *it in English, бо́льшой in the embedded clause raises to the empty subject position, which results in example (7b).\(^{11}\) The existence of a trace (\(=t_0\)) in the subject position, by stipulation, assigns the feature-value of \([\text{FIN: INF}]\) to the verb lexeme.\(^{12}\)

In summary, MP selects two arguments: an experiencer argument and an clausal argument. The former is expressed in a dative NP and the latter in a \(\text{что-то}-\) finite clause or in an infinitival clause (cf. this section and section 2.3). In contrast, MA selects a single argument, i.e., a clausal argument; the lower subject raises to the higher subject position and the lower predicate is always realized as the infinitive form.\(^{13}\)

\(^{11}\) The GB theory, which assumes functional categories such as INFL or AGR, would explain raising in terms of the Case theory. The structural case like the nominative is assigned by INFL (FIN or AGR) and since \([-\text{FIN}]\) or \([-\text{AGR}]\) associated with the embedded infinitive does not assign the Case to the embedded subject-NP, the latter must raise in order to acquire the Case, which is the nominative. On the other hand, the embedded NPs in (4a, b, c) do not need to raise, since they are inherently or semantically assigned their respective Case. Therefore, their occurrence in the sentence-initial position may be ascribed to fronting (cf. Perlmutter 2000, where the fronting, not raising, analysis is argued to be correct on independent grounds).

\(^{12}\) The \([\text{FIN: INF}]\) may be specified in the subcategorization of MA, but this misses a generalization on Russian infinitival clause; namely, the finiteness choice in the lower complement is entirely predictable (cf. footnote 13).

\(^{13}\) This contrast between MA and MP can be stated in terms of the syntactic status of the clausal complements they subcategorize. Specifically, MP subcategorizes CP, while MA selects IP. However, this is nothing but a restatement of the surface fact that MP may occur either with an infinitival clause or with a \(\text{что-то}-\) clause (thus, CP), while MA occurs only with an infinitival clause (thus, IP). The fact that the presence or absence of the complementizer is predictable (cf. section 2.3) is not incorporated in this account. Moreover, the choice between the infinitive form (\([-\text{tense}]\) and/or \([-\text{AGR}]\) under INFL) and the finite form (\([+\text{tense}]\) and/or \([+\text{AGR}]\)) is treated as lexically determined. I think that the complementary distribution between infinitival and finite complements must be properly described in any grammar.
2.3. Restrictions on the infinitival complement

Example (8b) shows that MP puts a certain restriction on the infinitival complement:

(8) a. Ему весело.
   'He feels happy.'

b. *Ему надо быть весело.
   'He has to feel happy.'

Sentence (8a) is a typical impersonal sentence, where the referent referred to by the dative NP (=ему) is an experiencer 'feeling happy'. Now, recall that MP sentences with an infinitival complement show the relation of coreferentiality between the matrix subject and the embedded subject (e.g., Ему; надо, [PRO; поехать домой]). The problem is that sentence (8a) cannot be embedded as the MP's clausal complement (cf. 8b and 5c), although the coreferentiality relation still holds between the two experiencer NPs (i.e., Ему; надо [PRO; быть весело]). Thus the question is: what is responsible for the ungrammaticality of (8b)?

Since the embedded clause in (8b) is the type of clause whose predicate requires its argument to be marked as dative, a plausible answer to the question would be that a predicate requiring a non-nominative subject is excluded from being embedded as an MP's infinitival complement. Indeed, when the lower predicate is a personal one with a similar meaning15) (cf. of Russian (cf. fn. 12).

14) If the two experiencer NPs are not coreferential, then the lower COMP position becomes occupied by the complementizer чтобы, and the complement clause becomes finite, as seen in the following:

(i) Ей надо, чтобы ему было весело.
   'For her it is necessary that he should feel happy.'

15) Personal verbs like поехать occur with a nominative subject except when they are used in independent infinitive sentences, where the subject is in the dative and the main verb takes the infinitive form (e.g., Борису-ДАТ не дойти до дома
(9) a. Он был веселым.
   'He was happy.'
   b. Ему надо [PROи быть веселым].
   'He has to be happy.'

Therefore, the restriction that MP puts on the infinitival complement could be stated in terms of the lower predicate's case assignment property. In other words, only those predicates, whose subject is assigned the nominative by default case assignment,\(^\text{16}\) can be embedded as MP’s infinitive predicates.

Inversion sentences such as (10a) can be embedded as infinitival complements (cf. 10b), even though they contain a dative-experiencer NP, just like in (8a). See the following examples:

(10) a. Мне понравился он.
   'I liked him.'
   b. Ему надо [PROи мне понравиться].
   'He needs for me to like him.'

\(^\text{16}\) I assume that the subject NP acquires the least marked case (i.e., nominative case) when it is not assigned case either lexically or semantically (cf. Paninian principle). This point, which I will elaborate in my future study, is radically different from the current syntactic theories, including GB.
The reason for this, as I argue here, is because the predicate нравиться is one that normally occurs with a nominative subject, whatever the latter's participant role may be.

Needless to say, when the coreferentiality between the higher NP and the lower nominative NP does not obtains, then it must occur as a чтобы-Clause, as shown in example (11).

(11) Мне надо, чтобы мне понравился Максим.
'It is necessary for me to like Maksim.'

The fact that a чтобы-Clause occurs even though the higher (modal) experiencer-NP is coreferential with the lower experiencer-NP further indicates that the embedded subject's case is the crucial factor for the choice between the infinitival clause and the чтобы-Clause (cf. Franks 1995).

Finally, subjectless verbs do not occur with MP as the embedded infinitive, either.

(12) a. Пахло серой.
'It smelled like brimstone.'

b. *Надо пахнуть серой.
'It has to smell like brimstone.'

As example (12a) shows, ПАХНУТЬ is a verb that does not select an external argument. For this reason, when it occurs with MP as an embedded predicate, there will be no possibility for PRO to appear in the lower subject position. This is tantamount to saying that пахнуть cannot occur with a nominative NP, and therefore its impossibility of being embedded as an infinitival predicate is accounted for.

When the embedded clause of MP cannot have PRO for one or another reasons, then it must take the complementizer чтобы (cf. 13).
From these discussions it should be concluded that infinitive predicates occurring with MP must be ones that, whether lexically or semantically, do not assign a non-nominative case to their external argument. In contrast, those predicates that normally take no subject at all or non-nominative subjects take place in the чтобы-clause.

In contrast, MA does not show the restrictions that MP imposes on the infinitival complement, as seen in the following examples:

(8) b'. Ему должно быть весело.
(9) b'. Он должен быть веселым.
(10) b'. Он мне должен понравиться.
(12) b'. Должно пахнуть серой.

Again, since the matrix subject position is not occupied, the embedded subject freely raises, retaining its case and participant role.

2.4. Restriction on the embedded predicate adjective

It has been noted that MP cannot occur with the short form adjective; it occurs only with a long form in the instrumental case (cf. 14a, b; Nichols 1981). MA, however, does not impose such a restriction (cf. 15a, b; Schoorlemmer 1994).

(14) a. Ему нужно быть веселым.
     'He needs to have fun.'
 b. *Ему нужно быть весел.
(15) a. Она должна быть готовой ко всему.
     'She must be ready for everything.'
In order to understand this limitation on MP, it is necessary to refer to the case assignment system of the embedded predicate adjective.

According to Nichols (1981, 300), the case assignment on the lower predicate adjective is dependent on the case of the matrix controller, that is, oblique controllers require the instrumental. See Nichols' examples (cf. also Franks 1995, 237):

(16) a. Неприятно быть больным.
   'It is unpleasant to be sick.'
   b. Заставили его быть вежливым.
   'They forced him to be polite.'
   c. Он старается быть любезен.
   'He is trying to be nice.'

In example (16a) the lower predicate adjective is provided with the default feature-values of [Gender: Neut] and [Number: Sg] by the (covert) arbitrary agreement-controller and is assigned the instrumental case (i.e., больным), since, according to Nichols, the matrix (covert) controller is in the oblique case (i.e., the dative). In (16b) the matrix agreement-controller is in the accusative, hence the instrumental on the predicate nominal. On the other hand, if the controller is in the nominative, the short form adjective is permitted, as seen in (16c) with a control predicate.

17) Similarly, the second predicate in the infinitival complement is assigned the dative case if its agreement controller in the matrix sentence is in the oblique case, as shown in Comrie (1974, 128–). Cf. Comrie's examples:
   i. Мне нужно было идти самому.
      'It was necessary for me to go myself.'
   ii. Мы попросили Ивана пойти одному.
      'We asked Ivan to go alone.'
Examples containing modals can be explained in a similar way. Example (14a) is grammatical, since the agreement-controller for the lower predicate adjective is the matrix dative NP, which requires the lower adjective to be in the instrumental. For the same reason, example (14b) is ungrammatical. In contrast, MA, which selects no underlying matrix argument and triggers the lower subject’s raising, does allow short form adjectives in the infinitival complement, because the agreement-controller of the lower predicate can be in the nominative. Thus, in example (15b), the agreement-target (=красива) is controlled by она, which was the subject of the lower clause prior to its raising to the matrix subject position.

### 2.5 Conclusion

To summarize the points made in section 2:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>MP</th>
<th>MA</th>
</tr>
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<tbody>
<tr>
<td>(1) Case of the higher NP</td>
<td>Only Dative</td>
<td>U</td>
</tr>
<tr>
<td>(2) P-role of the higher NP</td>
<td>Only Experiencer</td>
<td>U</td>
</tr>
<tr>
<td>(3) Finiteness of embedded clause</td>
<td>Sensitive to the lower predicate’s case assignment capability</td>
<td>U</td>
</tr>
<tr>
<td>(4) Possibility of Lower SF</td>
<td>No SF adjective</td>
<td>U</td>
</tr>
</tbody>
</table>

Here, U means that MA is indifferent to, or unspecified for, the relevant property. MA does not show any restriction on the higher NP with respect to the latter’s case and participant role, whereas MP occurs only with a dative NP whose participant role is fixed as a ‘modal experiencer’. These differences suggest that while both MP and MA subcategorize a clausal complement, only MP selects further argument that has the participant role of experiencer.

Now, it is possible to view the opposition between the two modal predicates of necessity in terms of markedness. MP is the marked member...
of the opposition, since it has an experiencer argument and its infinitive complement is restrictive. MA is the unmarked member, in that it does not contain an external argument, thus being less specified, and does not impose the restrictions that MP puts on the infinitival complement. In this sense the two types of modal predicates can be said to illustrate the markedness relation (cf. Andersen 2001).

The markedness relation holding between MP and MA is further manifested in their semantics and usage, to which I will turn in the next section.

3. Semantics and the usage of modal predicates

The goal of this section is to show that MP has a narrower usage scope than MA, thus confirming the markedness relation mentioned in the preceding section. Section 3.2 notes that MP’s dative NP must be referential, while MA does not show any restriction on referentiality. In section 3.3, it will be shown that MP is limited to root modality, while MA is used to express both root and epistemic modality. Section 3.4 shows that MA used to express root modality can be ambiguous in that its surface animate-subject may or may not be a person under obligation or prohibition.

Let us first define the concept of necessity.

3.1. Definition of NECESSITY

Modal predicates are viewed here as linguistic devices for signaling the existence of a specific, but unspecified in a given sentence, state-of-affairs which is in a certain conditional relation with the situation represented in the clausal complement (dictal situation hereafter). For example, when the
speaker says, *John must be a fool*, what *must* expresses is that there exist grounds upon which the speaker judges that John is a fool and the grounds are what the speaker acquires from John’s behavior, way of thinking, life style, and so on. In other words, by using *must* the speaker alludes to a certain general conditional relation holding between the (unspecified) ground and the (expressed) propositional content (=dictum).  

Modal predicates of NECESSITY are understood in this paper as expressing that ALL (or sufficient) conditions exist for the dictal situation to be actualized. In other words, the existing condition(s) in the real world is (judged by the speaker to be) in a strong conditional relation with the dictal situation. In contrast, modals of POSSIBILITY express existence of SOME (or insufficient) conditions for the dictal situation to be actualized. The speaker draws a conclusion on the basis of a weak conditional relation between the existing condition(s) and the dictal situation. When we say, *John may be a fool*, the speaker has grounds upon which he judges that John is a fool, but he does not make a strong commitment to the truth of the dictum.

As discussed in section 2, MA selects only a clausal complement, which means that there is no logical subject (i.e., experiencer) undergoing the situation denoted by *должен*. Its semantic structure then could be represented as follows: ‘*должен* P’, where P represents a complement

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18) This way of viewing modality distinguishes it from other grammatical categories such as MOOD and EVIDENTIALITY. Mood is concerned with the actuality relation between the propositional content and the reality, i.e., indicative vs. subjunctive: the indicative mood expresses the actuality of the event, while the subjunctive mood expresses its non-actuality. Evidentiality deals with the source of the event described in the sentence: e.g., visual vs. non-visual, direct experience vs. indirect experience, quotation vs. non-quotation, and so on.

19) As Palmer (1986, 53) states, modality is essentially subjective: i.e., the grounds the speaker has at the time of utterance are judged by him to be enough to draw a conclusion. When the speaker says, he must be a fool on the grounds available to him, the hearer could counter it, saying no, I don’t think he is.
situation. In this semantic representation, **должен** should be understood as defined in the preceding paragraph: 'all grounds exist for P to be true'.

On the other hand, MP does select an argument representing the experiencer of the modal situation: '**надо/нужно** (x, P)', where x represents an animate referent who undergoes a modal situation denoted by **надо/нужно** and "P", an complement situation. "x" is encoded as the dative NP in the underlying syntactic structure.

### 3.2 Referentiality

The fact that MP selects the dative NP denoting the modal experiencer implies that the dative NP should be referential. Consider the following sentence, recited from Chvany (1974, 116):

(17) **моя жена должна быть как можно умнее.**

'My wife must be as intelligent as possible.'

According to Chvany, (17) is anomalous unless said of an existing wife who feels a need to be as intelligent as possible (p.116). This should be understandable, since the modal experiencer must be a concrete animate referent (person) who undergoes the situation of necessity.

In contrast, MA may occur with a non-referential subject NP, as shown in the following example, again recited from Chvany (1974, 116).

(18) **моя жена должна быть как можно умнее.**

'My wife must be as intelligent as possible.' (A sentence said of a hypothetical, as yet unfound, wife.)

Since MA obviously can occur with a referential subject NP, it is plausible to conclude that MA does not show any limitation on the subject NP with respect to referentiality. Again, this can be explained by the fact
that the surface subject-NP occurring with MA is underlyingly a lower subject-NP, which is not characterized in terms of referentiality.

### 3.3. Epistemic modality

It has been reported that MP cannot express epistemic necessity, while MA can (cf. Bondarko et al. 1990). Consider the following examples:

(18) a. Из своего короткого прохода по залу она устроила триумфальное шествие; направленные на нее взгляды должны свидетельствовать о ее красоте... (DA, 211)
   'From her short passage along the hall she gave a triumphant procession; eyes directed to her would likely witness her beauty'
   
   b. ...направленные на нее взгляды, должно быть свидетельствуют о ее красоте...
   '...eyes directed to her probably witness her beauty...'

(19) a. Пете должен быть дома; на кухне свет горит.
   'Peter must be home: the light is on in the kitchen.'
   
   b. ?Пете надо/нужно быть дома; на кухне свет горит.
   '?Peter has to be home: the light is on in the kitchen.'

The given context in (18a) suggests that должен expresses epistemic necessity. This is supported by the paraphrasability of (18a) into (18b), where the parenthetic epistemic adverb, должно быть 'probably', is used. On the other hand, another example with epistemic должен in (19a) cannot be replaced with any impersonal modals in this context, as shown in (19b). This impossibility certainly does not have a syntactic reason; the sentence, Пете надо/нужно быть дома, is syntactically flawless. Rather, it is due to the semantic conflict between the given context where the epistemic reading is forced and the usage restriction that MP cannot be used to express epistemic necessity.

The impossibility of MP for epistemic usage is further supported by the
following argument. As shown in section 2.3, only MA may occur with impersonal infinitival complements. What is of importance here is that when it occurs with them, it always expresses epistemic modality; cf. the following examples:

(20) a. ДОЛЖНО ТОШНУТЬ ДЛЯ.
   'My uncle must feel sick.' (recited from Schoorlemmer 1994, 416)
   b. ДОЛЖНО ВЕЧЕРЬ.
   'Night must be falling.' (recited from Schoorlemmer 1994, 416)

Now, MP cannot occur with impersonal infinitival complements, but it does occur with impersonal чтобы-clausal complements, as shown in the following example:

(21) КОГДА ПОКАЖУТСЯ КРАСНЫЕ ГЛАЗА, НУЖНО, ЧТОБЫ ПАХЛО СЕРОЙ.
   'When red eyes show up, it is necessary that it should smell like brimstone.' (recited from Bondarko et al. 1990, 156)

Unlike MA sentences where impersonal complements evoke the epistemic reading, MP sentences like (21) have the reading of root modality only, as the translation indicates.21

This usage restriction on MP cannot be a lexical accident or its idiosyncratic property; rather it may be accounted for in terms of semantic structure. Notice that epistemic modality is concerned with an inferential

20) Bondarko et al. (1990, 156) notes that (21), an example from a prose of Chekov's, can be uttered as a stage direction.
21) It can be added that this usage restriction on MP could explain the reason why they do not form the modal parenthetic words that are lexically related and express exclusively epistemic modality. For example, there are no parenthetic words like *НАДО БЫТЬ, *МУЖНО БЫТЬ, and so on, which would be used epistemically. In contrast, ДОЛЖЕН (and for that matter, МОЖЕТ) has its lexical relative, ДОЛЖНО БЫТЬ (and МОЖЕТ БЫТЬ), which could be explained by its ability to express epistemic modality.
relation between propositions. It expresses the speaker’s guess about the
dictum (i.e., the proposition that the embedded clause expresses) on the
basis of grounds available to him. What this means is that an epistemic
modal situation does not involve any participant that would experience the
situation of necessity itself. Accordingly MP, which does select an
external argument that represents a modal experiencer, cannot express
episemic necessity. On the contrary, MA’s non-selection of an
experiencer-argument is compatible with the conception of epistemic
modality.

3.4 Semantic im-personality of MA
In view of the semantic representation suggested in section 3.1, MA can
be said to be im-personal, in the sense that it does not involve a
participant that experiences the modal situation. On the other hand, MP
(the impersonal modal) can be said to be semantically personal, since it
does select a modal experiencer.

It is sometimes suggested that root modals do not involve raising
movement (cf. Picallo 1990, Schoorlemmer 1994). It seems correct to
maintain that MP expressing root modality only is a control predicate, but
a semantic examination of root MA counters the treatment of all root
modals as non-raising control predicates.

First consider the following examples, where должен expresses root

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22) Of course, it is the speaker who evaluates the epistemic status of the dictum,
but the speaker as a modal evaluator is not expressed in sentences with modal
predicates.

23) The claim here should not be taken to imply that root modality necessarily
involves an experiencer of modal situation. Root modal situations may or may
not be experienced: MP expresses the former situation, while MA is used to
express the latter situation. My claim is that epistemic modality involves no
participant undergoing the modal situation and because of this, MP that does
select an experiencer-argument cannot express epistemic modality (see section
3.4 for more discussion).
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modality:

(23) a. "Учти это хотя бы ради Саши, который не должен сейчас лишаться матери."
'Keep this in mind at least for Sasha, who must not lose his mother now.'

b. Дверь должна оставаться открытой. (DA, 78)
'The door must remain open.'

According to the context where (23a) occurs, Sasha's uncle warns his elder sister (=Sasha's mother, who is angry at the Soviet regime for arresting Sasha) about her harsh remarks on Stalin. The context therefore makes it obvious that the surface subject (i.e., Саша, which is the antecedent of который) does not denote a person under obligation/prohibition; it only represents a person participating in the infinitival situation. Now, recall that semantically im-personal MA sentences do not express a participant taking part in the situation of obligation/prohibition, although the situation of obligation itself logically requires its subject. For this reason, example (23a) is read as if 'it is a certain person's (not expressed in the sentence) obligation for Sasha not to lose his mother.' This semantic fact can be taken to suggest that MA of root modality too should be treated as a raising predicate. This suggestion is further supported by examples with an inanimate subject like (23b), since, needless to say, the inanimate subject cannot be a participant responsible for the obligation.

In fact, the surface animate subject in MA sentences is ambiguous in that it may or may not refer to a participant undergoing the obligation (i.e., obligator). However, the ambiguity is not semantic, but discourse-pragmatic, since, as shown repeatedly, MA does not select the external argument and therefore information on it can be given only with the help of discourse or pragmatic context. Thus, in the following example,
(24) Болной должен лежать как можно больше.

'The sick person must lie down as much as possible.'

the sick person to which Болной refers may be interpreted as the obligator; it is his obligation to lie down as much as possible. Or, it may be that the obligation is imposed on, say, his parents or a doctor in order for the sick person to lie down as much as possible. Which interpretation is appropriate in a given context is discourse-pragmatically determined. What remains constant however is the semantic fact that Болной represents an argument of the embedded complement. This again lends some support to the claim that MA of root modality too is a raising predicate.

In contrast, MP sentences do not show this sort of ambiguity, since MP does select a modal experiencer, i.e., obligator, expressed by the matrix dative NP (cf. section 2.3).

(25) a. Болному надо лежать как можно больше.

'The sick person must lie down as much as possible.'

b. Нам надо, чтобы больной лежал как можно больше.

'It is necessary for us that the sick person should lie down as much as possible.'

(25a) with the infinitival complement expresses identity between the obligator and the actor of the dictal situation, whereas (25b) with the чтобы-complement expresses non-identity between them (cf. Бондарко et al.1990, 156).

3.5 Conclusion

The semantic differences between MA and MP confirm their markedness relation, which is established on independent grounds (i.e., their syntactic
behavior). They are summarized in the following table:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>MP</th>
<th>MA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Referentiality</td>
<td>Referential</td>
<td>U</td>
</tr>
<tr>
<td>of the matrix NP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Kind of modality</td>
<td>Root modality only</td>
<td>U</td>
</tr>
<tr>
<td>3. Obligator</td>
<td>Semantically given</td>
<td>U</td>
</tr>
</tbody>
</table>

MP requires its dative NP to be referential, while MA is indifferent to such a restriction. MP cannot express epistemic modality, while MA can express it. The surface subject with root MA may or may not refer to a person under obligation, while the dative subject with MP invariably refers to a person experiencing the situation of obligation. In view of these facts, MA is inclusive of MP with respect to referential potential, thus confirming that MP is marked as opposed to MA, which is unmarked.24)

4. Semantics and usage of придается/приходится

Besides impersonal predicatives discussed in the previous sections, Russian has yet another category of impersonal modals, namely modal verbs (=MV) such as придается and приходится. In this section, I would like to show that there are a variety of usage restrictions imposed on MV, which are not observed in MP sentences. This will be taken to suggest that within the category of impersonal modals MV is marked as opposed to MP, which is unmarked, thus providing a further instance of the markedness relation.

24) MA can be said to be the representative of all necessity modals, thus being in hyponymic relation with other impersonal modal predicates; cf. Jakobson's discussion on осли 'donkey' (Unmarked) vs. ослица "she-ass" (Marked).
4.1 Argument structure of MV: specified clausal argument

One of the notable differences between MP and MV is that MV does not occur with a что́бы-complement.

(26) a. *Ему придется, что́бы она поехала домой.
'It will be necessary for him that she should go home.'

b. Ему придется поехать домой.
'He will have to go home.'

Recall that MA also shows this combinatorial impossibility (cf. example 7a in section 2.2). This similarity however is only apparent and does not suggest that MV is a raising predicate like MA. The reason for this is because the matrix NP is invariably dative-cased and has the invariable participant role of 'modal experiencer', both of which are MP’s properties. In view of this fact, MV is better treated as a control predicate subcategorizing a clausal complement whose subject is PRO and whose predicate normally takes the nominative NP, thus excluding possibility of a что́бы-clausal complement.

It is noteworthy that MV has more specific argument structure than MP, where the coreferentiality of the lower subject and the case-assigning property of the lower predicate are left unspecified. This is compatible with the fact that, as will be shown shortly, MV shows more restricted usage than MP (and MA as well), which has to do with the markedness relation between the two types of impersonal modals.

4.2 Modality in terms of inferential mode

The distinction between necessity and possibility is made in terms of the strength of the conditional relation (or, in terms of the two quantifiers, ALL vs. SOME), while the distinction between epistemic vs. root modality
is made in terms of the kind of the conditional relation. Both distinctions are well established (cf. Lyons 1977, Palmer 1986, etc.).

However, there is yet another important aspect of the modality, which has not been recognized at all in the previous literature on modality, viz. the distinction between the abductive vs. the deductive modality. This distinction is made in terms of the relationship between the dictal situation and some other situation(s). Now let us discuss it in greater detail.

4.2.1 Abductive modality: modalizing an antecedent situation

The abductive modality is concerned with an inferential mode where an antecedent situation (=a dictal situation) is inferred (i.e., abduced) on the basis of the consequent situation.

Assuming that there is a strong conditional relation between situation A(nteecedent) and situation C(onsequent) (i.e., 'if A, then C'), situation A can be modally inferred, if situation C is already actualized in the real world. For example, on a generalized conditional relation like 'if there's fire, then there's smoke', existence of a fire can be inferred and modalized, when one sees smoke: e.g., there must be a fire.

Alternatively, the antecedent can be modally inferred, even when the consequent is viewed as an event to be realized in the future. That is, 'A is necessary for C to be actualized': e.g., 'there has to be a fire, if there is smoke'. In both instances, we say that the modal predicate expresses abductive modality.

4.2.2 Deductive modality: modalizing a consequent situation

The deductive modality has bearing on an inference where the consequent is predicted (i.e., deduced). To take the example of

25) In logic the abductive inference is fallacious but in the linguistic modality it is always possible for the speaker to modally abduce the truth of a proposition.
26) In some of my previous works, I tried to demonstrate the validity of this
fire-smoke, the consequent can be modally predicted, if the antecedent is observed in reality; in English, *there will be smoke*.

Alternatively, deductive modal predicates may express that the dictal situation was a natural consequence of the pre-existing situations, in consideration of the normal developmental sequence of events; i.e., *C* is necessitated by *A* (e.g., *there had to be smoke*).

I will show here that MV explicitly asserts deductive necessity, whereas MP and MA are not sensitive to the distinction, thus being able to convey either meaning.

### 4.2.3 MV as a deductive modal expression

First, consider the following example:

(27) a. -Фра, - сказала Вика, - я выхожу замуж. Нам придется с тобой расстаться, Фра. (DA, 376)

'Jura, said Vika. I’m getting married I’ll have to part with you, Jura.'

b. Все же (ему) пришлось зайти в кооператив, кончился папиросы.

(DA, 314)

'Still he had to drop by the shop; he’d run out of cigarettes.'

In example (27a), the dictal situation ('Vika’s parting with Jura' =C) obviously is a natural consequence of the situation of 'Vika’s getting married' (=A). Thus the speaker, who knows that there holds a strong conditional relation between the existing situation (A) and the dictal situation (C), asserts by using придается that the dictal situation will be unavoidably actualized. Similarly, the use of пришлось in (27b) indicates

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distinction. Choi (1999) argues that видно, one of modal parenthetic words in Russian, signals abductive modality coupled with an experiential evidentiality. In Choi (1997), the aspectual opposition in нельзя context is claimed to be correlated with the modality opposition: PF vs. IMPF = Deductive vs. Abductive.
that the situation of 'his having run out of cigarettes' forced him to go to
the shop to buy cigarettes. In short, MV expresses that the dictal situation
is necessitated by a certain situation, which may or may not be specified
in the surrounding context.

Now, let us consider a couple of examples with MA or MP where
abductive modality is expressed.

(28) a. Чтобы назвать эти выступления антипартийными, назвать их
политической диверсией, мы должны найти у Панкратова
преднамеренность. (DA, 39)

'In order to call this behavior anti-party and political sabotage, we
must find out Pankratov's prior intention.'

b. (Ему) надо быть уверенными, веселыми, только так он сможет успокоить
мать. (DA, 78)

'He has be confident and merry. Only that way will he be able to
soothe his mother.'

Example (28a) with должны includes a чтобы-purpose clause, which
provides a reason for the assertion of root necessity. The conditional
relation between the situation expressed in the adverbial clause and the
dictal situation would be: if we find Pankratov’s prior intention (=A) then
we are justified to call his behavior anti-Party and political sabotage (=C).
The чтобы-clause expresses the consequent of this conditional statement,
while the infinitival complement expresses its antecedent; MA itself
expresses that A is necessary for C to be actualized. In other words,
должны modalizes the antecedent situation, which is an instance of
abductive modality. Similarly, надо in (28b) indicates that the dictal
situation ('his being confident and merry'=A) is necessary for the
situation ('his being able to soothe his mother'=C) to follow. Indeed,
example (28b) can be rephrased by using a чтобы-purpose clause without
any notable semantic change: чтобы успокоить мать, ему надо быть
уверенным, веселым.27)
Sentences expressing abductive modality are often followed by a sentence beginning with such sentential adverbs as иначе, а то, только так, etc, the sort of pro-adverbs that conditionalize the dictal situation as either a positive or a negative antecedent. Только так in (28b) means 'only if he is confident and merry'. The function of иначе in the following fragment is to conditionalize the given dictal situation negatively.

(29) Он жесток с ней. Но она должна быть готовой ко всему, иначе удар потом будет еще тяжелее. (DA, 89)

'He is strict with her. But she has to be ready for everything. Otherwise, she will be hit even harder.'

The dictal situation of 'her being ready for everything' is negatively conditionalized by иначе: 'if she is not ready for everything'. A presumable conditional proposition would be something like 'if one is ready for anything that might happen in the future, then s/he will find it easier to handle'. Note that должна modalizes the antecedent situation. These pro-adverbs then can be said to indicate that the involved modality is abductive.

In contrast, sentences with deductive necessity cannot co-occur with a sentence with these pro-adverbs, because what they express is that the dictal situation is necessitated by the situation that is already actualized.

27) The following examples illustrate deductive modality expressed by MA and MP, both of which modalize consequent situations:

(i) Если люди не могут жить вместе, они должны разойтись. (DA, 135)

'If people cannot live together, they must divorce.'

(ii) Но Вика права, здесь новый, незнакомый мир и надо держаться по-другому. (DA, 210)

'But, Vika is right: this is a new, unknown world and it is necessary to behave differently.'

In (i), it is self-evident that MA modalizes the consequent situation; in (ii), надо alludes to such a conditional proposition as 'if people find themselves in a new and unknown place, then they behave differently in that place', and modalizes the consequent.
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and thus cannot be conditionalized as an antecedent. See the incoherency of the following discourse:

(27b’) Все же (ему) пришлось зайти в кооператив, (*инаке/*только так)
кончились папиросы.28

This confirms the claim that MV is a modal expressing deductive modality.

4.2.4 Further evidence for MV as a deductive modal

The characteristic of MV, that the existing situation forces the modal experiencer to perform the dictal action, naturally explains the reason why придается/приходится is modified by such an adverb as неизбежно, meaning 'unavoidably'. On the other hand, modal predicates like должен and надо/ нужно, when they are used to express abductive necessity, are modified by adverbs such as обязательно 'obligatorily' or необходимо 'necessarily', as seen in examples (30a, b).

(30) a. Каждому из вас (*неизбежно/*обязательно) придется проигрывать.
(Igra, 156)
‘Each and all of you will unavoidably have to lose (the game).’

b. Ему (обязательно/*неизбежно) надо присутствовать на этом
занятии.
‘He obligatorily has to attend this class.’

c. Общаться вам придется волей-неволей, —разразил Алферов, три года
в молчанку не приграешь, общение неизбежно. (DA, 451)

28) It should be pointed out that a to would signify ‘since’ rather than the usual ‘otherwise’ if it were used in examples like (27b’). This further supports our claim that MV expresses deductive modality, since the sentence followed by a to represents the antecedent situation of the following conditional proposition: ‘if one runs out of cigarettes, then s/he goes to the store to buy them’. Note that MV in (27b’) modalizes the consequent.
'Willy-nilly, you will have to meet (people), objected Alferov, - You won’t waste three years in silence, meeting people is unavoidable.'

Note that in (30c) similar semantic content is repeated once by придется and once by the short form adjective, неизбежно.29)

4.3 Modal negation vs. Dictal negation

This section discusses the two types of negation, modal negation vs. dictal negation, claiming that МН is not used to express dictal negation, while the other modals are ambiguous between these two readings. At first, let us discuss some points on the distinction between modal and dictal negation.

4.3.1 Identity relation between the two types of negated necessity

There are two possibilities of negating a sentence with modal predicates: what is negated may be either the modal predicate or the lower predicate. I will refer to the former as modal negation and the latter as dictal negation. Consider the following sentences:

(31) a. Он не может принять на собрание.
   'He cannot come to the meeting.'

b. Она могла не принять на собрание.
   'She may not have come to the meeting.'

c. Он не может не признать, что она права.
   'He cannot but confess that she is right.'

29) Collocations like неизбежные последствия 'unavoidable consequences' and необходимые условия 'necessary conditions' (cf. Артюнова et al. 1992, 144) lend some support to our claim.
Sentence (31a) illustrates modal negation, showing negated possibility. *Ne* in (31b) negates the lower predicate; the proposition that she didn’t come to the meeting is judged to be possible. Sentence (31c) shows that both the modal predicate and the infinitive predicate are negated: 'his not confessing that she is right is not possible’. With мочь, these two types of negation are indicated by the position of не.

There are two notable points on negation in sentences with necessity modals. First, it is difficult for them to have double instance of не, occurring once before the modal, once before the infinitive; thus, sentences like Он не должен не приходить на собрание, Ему не надо/нужно не приходить на собрание, etc. are never found. Second, virtually no instance of the dictal negation (i.e., constructions like *должен не ехать,* надо/нужно не ехать) is found with the necessity modals. These observations might lead one to conclude that dictal negation is prohibited in Russian modal sentences of necessity.

However, a logical analysis of the conception of necessity leads to the suspicion that the apparent modal negation may be a derived structure, resulting from a certain syntactic process. My arguments for this are as follows. There is a (partial) semantic identity relation between modal negation and dictal negation in the context of necessity; i.e., saying that all conditions hold for *non-P* to be true (i.e., the dictal negation) can be understood as meaning that there is no condition for *P* to be true (i.e., the modal negation): nec ~p => ~nec p (cf. Rappaport 1984, 211). In other words, the surface modal negation may well be construed as manifesting

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30) In modal logic, '¬nec ¬P' is treated as equivalent to 'poss P', while '¬poss ¬P' = 'nec P' (Lyons 1977, 787). In linguistic modality, however, an expression of '¬nec ¬P' seems to be practically impossible.

31) There are two types of instances where the negation appears to be dictal: (1) должен не забывать, (2) должен не P, a Q. In the first type, не забывать could be treated as a lexical unit that is semantically synonymous with positive п о м н и т ь. The construction не P, a Q is only partially negative, and in fact its focus is on the affirmative part.
the underlying dictal negation. Thus, the negation of **должен** in a sentence like (32) may be interpreted as a manifestation of the dictal negation, viz. **должен** (**YOU NOT LET EVERY VISITOR HAVE YOUR OWN BED**).

(32) Вы не должны уступать свою постель каждому проезжему, их много, вы один. (DA, 305)

'You mustn't let every visitor have your own bed; they are many, but you are one.'

The positioning of the negation particle **не** before **должен** in the surface then can be described as resulting from a syntactic rule that raises the embedded **не** right before **должен** (cf. Chvany 1972), as I will argue in the next subsections.

4.3.2 Negation in epistemic necessity

The rule, which is motivated by the (partial) identity relation between the modal and dictal negations, explains the fact that the epistemic **не должен** invariably signals the speaker's guesswork about the negated dictum. In (33a), which is taken to express epistemic modality, **не** appears to represent the modal negation.

(33) a. Он **не должен** опоздать. 'He must not be late (after all).'
     (recited from Бондарко 1990, 117)

b. Он, видимо, не опоздает. 'He probably is not late.'

However, the negation particle in (33a) is associated semantically with the infinitive **опоздать**, as shown in (33b) that is synonymous with (33a). This suggests that (33a) should have a semantic representation like **должен** (**НЕ NOT BE LATE**). The negation particle **не** 'not' raises right before **должен** via the postulated syntactic rule.32)

32) Chvany (1972, 518) notes that MA of epistemic modality allows a migration of
4.3.3 Exemption vs. Prohibition

This way of treating the negation in sentences with modals also helps to understand why the negation of root necessity modals is ambiguous between the two distinct types: namely, lack (or denial) of necessity (= exemption, glossed 'need not, don’t need/have to') and prohibition (glossed 'mustn’t') (cf. Lyons 1977, 837). For example, a negated sentence like (34) shows ambiguity between the two readings.

(34) Он не надо ехать домой.

‘He doesn’t have to go home’ or ‘He mustn’t go home’

(35) Никого он не должен запрашивать, может завтра отправить его в Канск с обвинением во вредительстве, это в его власти. (DA, 323)

‘He [=Alferov] doesn’t have to enquire of anyone. (He=Alferov) can send him [=Sasha] tomorrow to Kansk for the charge of a sabotage; this is in his [=Alferov] power.’

Similarly, compare (32) and (35), both of which include не должен. As the contexts make it clear, in example (32) the reading of ‘mustn’t’ is most appropriate, while example (35) should be read as meaning ‘doesn’t have/need to’.

In view of the fact that the negation of possibility does not show this kind of ambiguity (cf. examples in (31)), it is conceivable that the ambiguity may reflect an underlying syntactic difference in necessity sentences. More specifically, the underlying modal negation produces the reading of ‘don’t have to’, while the underlying dictal negation is responsible for the reading of ‘mustn’t’. The reading of ‘don’t have to’ obtains when the negative particle underlyingly negates the modal predicate: namely, ‘it is not the case that all conditions hold for the dictal situation to be actualized’. In contrast, the reading of ‘mustn’t’ obtains

TENSE, i.e., a raising of the morpho-syntactic property of [TENSE: PAST] of the lower clause to the matrix predicate position. Thus it is quite plausible to assume that NEG is also migrated to the matrix clause.
when the negative particle underlyingly negates the infinitive predicate; i.e., 'all conditions hold for the dictal situation not to be actualized'.

4.3.4 Negated MV: modal negation only

When the particle NE negates the sentence with приходит или придется, it does not show the ambiguity between modal negation and dictal negation, an ambiguity that the other modals do allow (cf. previous sections). It always shows modal negation, showing the reading of 'don’t have to'.

Consider the following example:

(36) Уходя, Липман попросил не снимать протез до завтрашнего утра, а если что-то будет мешать, вызвать его. Вызвать его не пришлось, протез сидел хорошо, Сталин был доволен. (DA, 445)

'Leaving, Lipman asked (Stalin) not to take off the false tooth until tomorrow morning and to call him if something bothers him. (But, Stalin) didn’t have to call him: the false tooth fitted well and Stalin was satisfied.'

In (36) Lipman, the dentist, suggests to Stalin that he call him if the false tooth bothers him. But it turns out to fit well, which makes it unnecessary for Stalin to call Lipman. This context makes it clear that не пришлось expresses non-necessity (the reading of exemption): it would never convey the necessity of Stalin’s not calling the dentist (the dictal negation, the reading of prohibition). If the false tooth had bothered him, Stalin would have called the dentist.

From the discussion above the following legitimate question arises: why is the ambiguity not observed for MV unlike other modals of necessity where such ambiguity is typical? I will provide a plausible answer to this question in section 4.5.

4.4 Realized dictal situation: implicativity
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Придается/приходится, whose basic semantic function is to signal deductive necessity, has an additional property when they are used in the past tense. As reported in the previous literature (cf. Бондарко et al. 1990), positive приходилось implies the actualization of the dictal situation, while their negative counterpart implies the non-actualization of the dictal situation. Therefore, MV is one of what Karttunen (1971) calls implicative verbs, that is, MV entails the factuality of the embedded clause. In contrast, other modals do not show the entailment relation. The dictal situation may or may not have been actualized in the real world.

Consider the following examples.

(37) a. Приходилось снять с телеги два чемодана, какие полегде, конвой приторочил их к седлу. (DA, 234)
‘(They) had to take out two lighter trunks from the cart and the convoy strapped them to the saddle.’

b. Рана не болела, десна тоже, принимать пирамидон не приходилось.
(DA, 395)
‘The wound did not hurt, nor the gum: [he] did not have to take pyramidon.’

c. Ему приходилось зайти в кооперативе, кончились папиросы, но все так и он не заходил.

The context of example (37a), where a positive MV is used, makes it clear that two trunks were actually taken off the cart. Example (37b) with a negated MV also conveys the meaning that Stalin actually did not have to, and in fact, did not take the medicine. The experimental example (37c), where a negated proposition of the dictal situation is added, turns out to be a contradiction.

Consider the following examples where MP or MA is used:

(38) a. Впрочем, вскоре ему надо было поступать на завод, и, оставив мать в Липецке, он уехал в Москву. (DA, 137)
‘But, soon he had to go to the factory and, having left his mother in Lipeck, he departed to Moscow.’

b. Он нашел то, что должен был найти. (DA, 162)

‘He found what he had to find.’

c. Председатель должны были сказать вы, а вы ему не сказали, и в результате аппарат вышел из строя. (DA, 320)

‘You must have talked to the director, but you didn’t tell him and as a result the whole apparatus went out of order.’

The dictal situation in (38a) is actually realized, which is clear from the context; ‘he left for Moscow, where the factory is located’. Sentence (38b) is another good example illustrating that the dictal situation is actualized. However, in example (38c) it is self-evident that the dictal situation was never actualized. From this it follows that MP and MA do not entail the factuality of the dictal situation, rather it is contextually determined.

The comparison then confirms that MV is an implicative verb, while the other modals are not. MV asserts the truth of the modal situation of necessity, entailing the factuality of the dictal situation, while MP (and MA) only asserts the truth of the situation of modality, leaving the factuality of the dictal situation undecided.

4.5 MV as an innovative use: metonymic extension

I demonstrated in the preceding sections that MV has more restricted usage than MP (and also MA); (1) it expresses deductive modality only, (2) it can convey the modal negation only, and (3) it is an implicative verb. Moreover, (4) syntactically it occurs invariably with the infinitival complement. One may wonder if such restrictions could be explained in a plausible way.

It should be noted at this moment that приходится/придется can be used to convey not only the modal meaning but also the meaning of the
'happening, coming into existence' of an event. The following examples illustrate this non-modal use:

(39) a. Ему не раз приходилось наблюдать восход солнца.

'He often came/happened to watch the sunrise. Recited from RAS 1987)

b. Ну и, конечно, пишу для тех, кому еще не приходилось играть в эту игру. (Igra, 37)

'Well, of course, I am writing (this book) for those, who have never happened to play this game.'

In these examples, приходилось is synonymous with случаться or доводиться, meaning 'to happen, to have occasion'. Note that it has an identical argument structure with MV; both select the dative-experiencer NP and the infinitival complement.

The identity in argument structure makes it conceivable to interpret the modal use of приходит/приходится (i.e., MV) as something metonymically extended from the meaning of 'an event's coming to take place', which is closer (more literal) to the original lexical meaning of the non-ся verbs (i.e., приходить/прийти come/arrive'). More specifically, while the verbs are used to express simply 'an event's coming into existence', they may be recognized as contextually implicating that the infinitive event happened as a consequence of a certain event that is conditionally (in other words, metonymically33) related to it. When the recognition is repeated and emphasized the implication becomes conventionalized. As a consequence the verbs acquire the meaning of deductive modality.34)

33) When two events are conditionally related, we can say that they are temporally contiguous, and since metonymy is essentially concerned with a contiguous relation, we can say that the dictal event is metonymical with the necessitating event.

34) Put differently, the verbs begin to denote (i.e., symbolizes) the modal situation of deductive necessity, simultaneously indicating (i.e., indexicalizing) existence of specific conditions that necessitate the actualization of the infinitival event.
This innovative process helps explain the usage restrictions on MV.

First, MV cannot express abductive modality that modalizes the antecedent situation, since, as its non-modal usage indicates, the event comes to take place as a consequence of a certain existing event.

Secondly, MV cannot be used to negate the dictal predicate (i.e., impossibility of the reading of prohibition), since the non-modal use of приходится/придается does not permit the negation of the infinitival event. Observe the ungrammaticality of *Мне приходилось не играть в эту игру 'I happened not to play this play'. This experimental sentence is sentence-internally contradictory, since it asserts that a non-occurring event occurred.

Third, as examples in (39) illustrate, positive приходится/придается imply actualization of the infinitive event, while their negation implies non-actualization; hence, ?Ему не раз приходилось наблюдать восход солнца, но он не наблюдал восход солнца and ?Мне еще не приходилось играть в эту игру, но я играл в эту игру. The implicative nature of MV can be viewed as inherited from its non-modal use.

### 4.6 Conclusion

The following table summarizes the points made in section 4.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>MV</th>
<th>MP (and MA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lower subject</td>
<td>Nominative NP coreferential</td>
<td>U</td>
</tr>
<tr>
<td></td>
<td>with the higher subject</td>
<td></td>
</tr>
<tr>
<td>2. Type of modality</td>
<td>Deductive necessity</td>
<td>U</td>
</tr>
<tr>
<td>3. Type of negation</td>
<td>Modal negation</td>
<td>U</td>
</tr>
<tr>
<td>4. Implicativity</td>
<td>Implicative</td>
<td>U</td>
</tr>
</tbody>
</table>

For this reason, modal expressions need a rich context where some other conditioning events are expressed or at least presupposed to be known to the speaker and hearer. Also, precisely for this reason, they should be categorized as indexical symbols like the pronoun.
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Since MV selects an internal clausal complement whose subject is coreferential with the higher subject (i.e., PRO) and whose predicate is one that does not assign case to its external argument, the predicate of the complement is invariably in the infinitive form (section 4.1). It is limited to express deductive necessity (section 4.2); its negation always express exemption (section 4.3); and it is an implicative verb (section 4.4). In contrast, MP does not apply such syntactic and usage restrictions.

Since MV has more specific argument structure and more restricted usage than MP, it is concluded that the former is marked as opposed to the latter, which is unmarked.

5. Concluding remarks

In this paper, the modal predicates of necessity in Russian, which are classifiable into three groups in terms of parts-of-speech (i.e., adjective, predicative, and verb) are shown to have a number of differences in their syntax and semantics. On the basis of these differences it is claimed that the category of Russian necessity modals exemplifies the markedness relation.

It is suggested in this paper that MA has the least complex argument structure, selecting only a clausal complement. This simplicity in argument structure is argued to motivate its wider distribution and usage: (1) syntactically, it may be either personal or impersonal, (2) semantically it can express either root modality or epistemic modality, among others. In contrast, MP has a more complicated argument structure than MA in that it additionally selects an external argument that is specified as having the participant role of modal experiencer and being assigned the dative case. It is shown that the relatively complex argument structure is responsible for the syntactic and semantic restrictions imposed on MP (cf. sections 2 and
3): MP can only be impersonal and express root modality.

From this contrast, it follows that MA and MP form a relation of inclusion in terms of both syntax and semantics. Syntactically the former’s distribution includes the latter’s distribution, and semantically the former’s referential potential includes that of the latter.

This paper further suggests that within the category of impersonal modals MV has a more specific argument structure than MP. While MP selects an unspecified clausal complement, MV is claimed to select a clausal argument that is specified in terms of coreferentiality of the subject and case assigning capability of the predicate. Since MP does not specify its clausal complement, it is reasonable to conclude that MP is unmarked as opposed to MV, which is marked. The marked value assigned to MV is argued to be compatible with its restricted usage: (1) it denotes deductive modality only, (2) its negation is not used to convey the meaning of prohibition, and (3) it is an implicative verb (cf. section 4).

The discussions of the three classes of Russian necessity modals appear to suggest a scalar conception of markedness; i.e., MV is most marked, MP is marked to a lesser degree than MV, and finally, MA is least marked. However, in view of the categorical distinction in argument structure between personal and impersonal modals (i.e., presence vs. lack of an external argument), it is more appropriate to interpret them as forming a binarily hierarchical structure; namely, MA (=U) is opposed to MP and MV (=M), and between the latter two, MP (=U) is opposed to MV (=M).
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요약문

러시아어의 ‘핍연성’ 양상 서술어 연구

최성호

본 논문은 현대러시아어의 ‘핍연성’ 양상을 표현하는 서술어의 동사와 의미를 논의한다. 본 논문에서 발현한 점은 다음과 같이 요약될 수 있다. 첫째, 인칭 양상서술어인 ДОЛЖЕН은 절을 그 보어로 취하며, 주어-명사구를 논항으로 취하지 않는다. 이러한 점은 표면에서 ДОЛЖЕН과 출현하는 주어-명사구의 참여자역할과 격이 임관되지 않는다는 사실을 설명해 준다. 둘째, 무인칭 양상서술어 НАДО/НУЖНО는 명사구와 절을 하위범주화하며, 그 명사구는 ‘양상경험주’의 참여자 역할을 하며, 격은 여격으로 정해져 있다. 이러한 논항구조상의 대립은 (1) 이들이 보이는 다양한 통사적 차이를 설명해주며, (2) 이들 사이에 존재하는 분포상의 포함관계를 설명해 주며, 나아가 (3) 이러한 통사적 포함관계는 의미적/외연상의 포함관계와 지표적 관계를 이루는다는 주장은 가능하게 한다. 셋째, 본 논문은 무인칭 양상동사(придается/приходится) 역시 경험주의 참여자 역할 및 여격을 함당하는 서술어이면서서 무인칭 양상서술어와 동일하나, 절이 출현하는 주어와 동사에 제약이 있다는 점에서 유의적으로 주장한다. 그것은 (1) 이들의 응법이 매우 제한적이어서, 소위 ‘연역적 양상’만을 표현하며, (2) 소위 ‘향의’동사이며, (3) ‘급지’의 의미를 표현하지 못한다는 점에서 잘 드러난다.
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