11. Modal verbs in Balto-Finnic

*Petar Kehayov and Reeli Torn-Leesik*

1. Aims

This article outlines an account of modal verbs in the Balto-Finnic languages, focussing on seven core modal verbs. The analysis of the modal verbs into different types of modality is based on that of van der Auwera and Plungian (1998). The central aim of the article is to describe the Balto-Finnic modal verbs in terms of the grammaticalisation parameters proposed in Lehmann (2002). The last section of the article looks at the effects of language contact on the modal verbs in Balto-Finnic languages.

2. Types of modality

Definitions of modality vary across different approaches to the topic. In analysing Balto-Finnic modal verbs the present study employs the classification of modality types provided by van der Auwera and Plungian (1998), who define “modality” as applying to “semantic domains that involve possibility and necessity as paradigmatic variants, that is, as constituting a paradigm with two possible choices, possibility and necessity” (ibid.: 80). The semantic domains involve four types of modality: participant-internal modality, participant-external modality, deontic modality, and epistemic modality. Participant-internal modality refers to possibility or necessity that is “internal to a participant engaged in the state of affairs” (ibid.: 80). While internal possibility concerns a participant’s ability, internal necessity implies a participant’s internal need. Participant-external modality involves possibility and necessity external to the participant, that is, it refers to circumstances external to the participant. Deontic modality, a subtype of participant-external modality, “identifies the enabling or compelling circumstances external to the participants as some person(s), often the speaker, and/or as some social or ethical norm(s) permitting or obliging the participant to engage in the state of affairs” (ibid.: 81). Epistemic modality refers to the speaker’s judgment about whether something is certain or probable. Table 1, repeated here from van der Auwera and Plungian (1998: 82), summarises these types of modality.
Table 1. Modality types (van der Auwera and Plungian 1998: 82).

<table>
<thead>
<tr>
<th>Possibility</th>
<th>Non-epistemic possibility</th>
<th>Participant-external possibility</th>
<th>Epistemic possibility (uncertainty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant-internal possibility (Dynamic possibility, Ability, Capacity)</td>
<td>(Non-deontic possibility)</td>
<td>Deontic possibility (Permission)</td>
<td></td>
</tr>
<tr>
<td>Participant-internal necessity (Need)</td>
<td>(Non-deontic necessity)</td>
<td>Deontic necessity (Obligation)</td>
<td></td>
</tr>
<tr>
<td>Participant-external necessity</td>
<td></td>
<td>Epistemic necessity (Probability)</td>
<td></td>
</tr>
<tr>
<td>Non-epistemic necessity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While the division between the family of possibility types and the family of necessity types can be made relatively straightforwardly, distinctions within each family are not so clear-cut.

3. The Balto-Finnic languages

The Balto-Finnic languages form a subgroup of the Finno-Ugric language family that are spoken mostly around the eastern coast of the Baltic Sea. Although the precise number of Balto-Finnic languages varies in different descriptions (for example, Raun 1971 distinguishes only three; Décsy 1965 has five, Laanest 1975, and Viitso 1998 seven), the most widely accepted number is seven. These are: Estonian, Livonian, Votic, Finnish, Ingrian, Karelian and Veps. The Balto-Finnic languages form a dialect continuum (Viitso 1998: 96), something that can be observed most clearly in the northern branch (Finnish, Karelian and Veps). Estonian, Livonian and Votic form the southern branch. Ingrian, which historically belongs to the northern branch, shares many features with the southern branch due to its intense contact with Votic. Only Estonian and Finnish are used as official state languages. Livonian, Votic and Ingrian are on the verge of extinction.

The present study is based on these seven Balto-Finnic languages. A default reference is the standard form of a language. We will refer to non-standard forms if there is no established standard language with a long
4. The study of Balto-Finnic modal verbs

4.1. Data collection

Of the seven Balto-Finnic languages, Finnish and Estonian are the most thoroughly studied. Although there are several studies focussing on the semantics and the historical development of modal verbs in these two languages, studies of modal verbs in other Finnic languages are sparse or nonexistent. The number of verbs included in the class of modal verbs within one language varies in different descriptions as well (Flint 1980, Kangasniemi 1992). There is certainly no generally accepted account of modal verbs in Balto-Finnic.

Before presenting the analysis of modal verbs, it should be stressed that modal verbs are not the only means of expressing modality in Balto-Finnic languages. Finnish, Karelian, Votic and Ingrian have a special morphological category of potential mood to express probability or possibility, although in the last two languages it is disappearing (Ariste 1948, Laanest 1975). While Kettunen (1947: 81) reported that Livonian also had a potential mood, Laanest (1975: 155) denies its existence.

All of these languages have conditional and imperative moods and a number of modal adverbs. The latter are used instead of modal verbs in particular in eastern Balto-Finnic languages. For instance, in Veps the adverb tarbiž/tariž is very frequently used to express necessity. It can be used with the infinitive of a lexical verb as in (1b) or without a verbal complement, i.e. similarly to Russian nado, as illustrated in (1a):

1. a. tariž kodi-he (Zaitseva 2001: 106)
   must(=ADV) home-ILLAT
   ‘One needs to go home.’

   b. tariž mända magadamha
      must(=ADV) go.INF sleep.INF
      ‘One needs to go to sleep.’ (Deniss Kavinov: Northern Veps, p.c.).

Other types of constructions which do not explicitly contain a modal verb are also used to express modality. For instance, in Livonian the partitive
singular of the fourth infinitive in its verbal use is often employed to express necessity (Kettunen 1947: 86).

(2) Mi’nim um ända-mst.
    I.DAT be.3SG give-INF.PRT
    ‘I must give something.’

These other means of expressing modality in Balto-Finnic will, however, not be discussed in detail here. For the purpose of gathering a working sample of modal verbs, the following materials were taken as a descriptive basis:

- grammars and other available descriptions of Balto-Finnic languages;
- linguistic studies focusing on any aspect of the modal system of a particular Balto-Finnic language;
- bilingual dictionaries;
- published texts (usually stories, memoirs, etc.);
- informants: three for Karelian, one for Veps, and nine for Ingrian.

As modal verbs in the Balto-Finnic do not form a clear morphosyntactic class, restrictive selectional criteria had to be applied when choosing the modal verbs for the study. These criteria were (i) the number of languages in which the verb occurs as a modal and (ii) the modal domains it covers. The application of these criteria helps to identify the core modals from idiosyncratic uses of verbs in particular languages.

4.2. The inventory of modal verbs

Modal verbs in Balto-Finnic follow two patterns: a personal modal pattern and an impersonal modal pattern. In the personal pattern, the verb agrees with the subject of the sentence in person and number and the subject is in the nominative. The modal verb is followed by the infinitive of a lexical verb. In the impersonal pattern, the modal verb is in a 3SG form followed by the infinitive of a lexical verb and shows no agreement with the (agentive) nominal argument. The latter is either in the genitive (or dative) or in an external local case (adessive, allative). These two patterns are illustrated in (3):

(3) a. Sinä voi-ʔ nukkua.
    you.NOM can-2SG sleep.INF
    ‘You can sleep.’
The two modal patterns show variation between languages as well as variation involving the same verb within one and the same language. For instance, there can be differences in case marking involving the same verb in different languages or dialectal differences in case marking by the same verb in the same language. These differences are represented in examples (4–5). Example (4) illustrates a personal pattern in Estonian and examples (5a) and (5b) show dialectal differences in Livonian, where the former shows a personal pattern and the latter an impersonal pattern.

(4)  Mina **pid-i-n** varem minema.
    I must(=hold)-PST-1SG earlier go-INF
    ‘I had to leave earlier.’

(5)  a. Mina varim **pid’** läem.
    I earlier must(=hold).PST.1SG go-INF
    ‘I had to leave earlier.’ (Salats dialect, Saukkonen 1965: 123)

    b. Minnon varald **pid-iks** läem.
    I.DAT early must(=hold)-COND.3SG go-INF
    ‘I would have to leave earlier.’ (Piza dialect, Saukkonen 1965: 123)

In Karelian and Veps, the counterpart of Estonian *pidama* ‘must’ can follow either pattern, whereas in Finnish, Votic and Ingrian it only follows the impersonal pattern. Comparing these two patterns in different Balto-Finnic languages, one finds that Estonian uses the personal pattern with nearly all verbs except for the verbs *tulema* ‘come; must’, *tarvitsema* ‘need’ and *pruukima* ‘need’, where the last two demonstrate variation between the personal and impersonal patterns. Other Balto-Finnic languages allow more verbs either to follow the impersonal pattern or to demonstrate pattern alternation.

As already mentioned, Balto-Finnic modals verbs do not form a clear morphosyntactic class. In order to extract the most typical modal verbs, the criteria given in 4.1. were specified as follows:

- The verb occurs as a modal in at least three Balto-Finnic languages;
- The verb expresses at least two types of modality in addition to its primary (premodal) meaning at least in two languages.
Figure 1 shows that seven verbs satisfy these two criteria: voida, saada, pitää, tulla, tarvita, lie- and täytyä (the forms given are those from Standard Finnish as representative for all Balto-Finnic languages). In the Figure below, the darker the shade of grey, the greater the number of languages in which the respective modal verbs occur. The labels POSSIBILITY and NECESSITY refer to two modal domains.

As can be seen from Figure 1, three verbs voida, saada and pitää form the core of this class as they occur in all languages. If the sample restriction is relaxed to five or more languages, the verbs lie- and tulla enter the group. If the restriction is relaxed even more, to three or more languages, täytyä and tarvita can be added. The vertical broken line divides the domains of possibility and necessity. The verb voida is the only verb that is exclusively used for expressing possibility. The other verbs, lie- and saada, which are used across the area as markers of possibility, cover also some types of necessity in certain restricted areas.

Table 2 presents the original or premodal meanings of these modal verbs. The original or premodal meaning of the modal verbs in Balto-Finnic tends to be preserved along with their modal and postmodal
meanings. For example, the original meaning of the verbs *saada* and *tulla* is maintained in all languages.

Table 2. The original or premodal meanings of the core modal verbs in Balto-Finnic

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>voida</td>
<td>‘to be able/capable’ &lt; *‘to be strong’ (Saukkonen 1966: 74–75)</td>
<td></td>
</tr>
<tr>
<td>saada</td>
<td>‘to get’ &lt; *‘to come’ (Saukkonen 1966: 5)</td>
<td></td>
</tr>
<tr>
<td>pitää</td>
<td>‘to seize; to hold’ (Saukkonen 1965: 113; Laitinen 1992: 137)</td>
<td></td>
</tr>
<tr>
<td>tulla</td>
<td>‘to come’</td>
<td></td>
</tr>
<tr>
<td>täytä</td>
<td>‘to get filled; to suffice’ (Saukkonen 1965: 144)</td>
<td></td>
</tr>
<tr>
<td>tarvita</td>
<td>‘to need’ (Laitinen 1992: 130)</td>
<td></td>
</tr>
<tr>
<td>lie-</td>
<td>modal variety of auxiliary ‘be’ (Saukkonen 1965: 174)</td>
<td></td>
</tr>
</tbody>
</table>

The results of the analysis cannot be claimed to be definitive since they only show the bare minimum of the class of modal verbs in the language family. A more thorough study could possibly increase the number of verbs by one or two. Moreover, as noted above, the northern branch of the Balto-Finnic forms a continuous group, and the status of the individual languages is still a controversial topic. Any revision of the internal classification of the family could perhaps change the situation slightly, but none of these factors would bring about any significant relocation of the verbs already included.

In addition to the core modals, there are several cases where a certain verb is not used as modal in the majority of languages, but is very prominent in the modal system of a particular language. For example, in addition to other verbs, Finnish *saattaa* and Karelian *soattoa* (< *saada* get + causative suffix -tta) express dynamic, participant-external non-deontic and epistemic possibility (see ISK 2004: 1495–1496 for Finnish). In Estonian, the verb *pruukima* ‘need’ (< Middle Low German *brūken*, c.f. contemporary German *brauchen*) is used to negate necessity alongside the verbs *pidama*, *tarvitsema* and *tulema*.

There is an interesting case of areal grammaticalisation along the eastern coast of the Gulf of Finland. The verb (*hjölia* ‘to care, to be concerned’) is used with the impersonal pattern for negating necessity in Votic and Ingrian and also in the adjacent Estonian and Finnish dialects (see Saukkonen 1966: 130–131). Example (6) is from Ingrian:

(6) Häne-l ei hōli-nD töö-Da tehā.  
    s/he-ADE NEG.3SG care-PST.PTCP work-PRT do.INF  
    ‘S/he didn’t have to work.’ (InkMS 1971: 69)
Tegese in Veps is a form of the verb ‘do’ that is marked with impersonal voice morphology and used to express different types of non-epistemic necessity:

(7) \textit{raffa-le tege-se möda lehma-d}  
people-ALL do-IMPS sell.INF cow-PL  
‘People have to sell the cows.’ (Zaitseva 2001: 110)

As noted above, probably the most productive marker of necessity in Veps is the adverb \textit{tarbiž/tariž}. This adverb can either be used with the infinitive of a lexical verb or without it.

The next section of this article approaches the core modal verbs from the perspective of the grammaticalisation parameters proposed in Lehmann (2002).

5. Grammaticalisation parameters

Lehmann (2002) suggests the following six parameters of grammaticalisation: Integrity, Paradigmaticity, Paradigmatic variability, Structural scope, Bondedness and Syntagmatic variability. Each of these parameters has a dynamic equivalent — a process that relates different parameter-values on a grammaticalisation scale. In certain cases this process may involve a number of more specific structural processes. For instance, \textit{attrition}, a process corresponding to the Parameter Integrity, may be characterised by more specific notions of semantic bleaching, phonological attrition and morphological degeneration. Another important variable here is the instantiation of a parameter, which however is often a matter of interpretation and can lead to disagreement among scholars. A single development can be related to different processes, and correspondingly, also to different parameters. For example, the loss of the distinct $2SG$ inflection of the Dutch modals \textit{kunnen} and \textit{zullen} (see Mortelmans, Boye, and van der Auwera: this volume) can be seen either as an instantiation of morphological degeneration and subsumed under the Parameter Integrity or as an instance of paradigmaticisation (increased homogeneity) and subsumed under the Parameter Paradigmaticity.
5.1. Integrity

5.1.1. Semantic bleaching

The process of semantic bleaching may follow two possible scenarios. The first involves meaning extension without depleting the source meaning. The second presents a classical example of grammaticalisation, a process in which the item is “pushed” away from its source domain by other items, and as a result it completely shifts from the source to a novel domain. The Balto-Finnic modal verbs exhibit only the first scenario. The path from the non-epistemic to the epistemic domain is claimed to be universal in the semantic extension of modal verbs (see Bybee, Perkins, and Pagliuca 1994; van der Auwera and Plungian 1998). Although in some cases a certain form of a given verb may show a strong specialisation within the epistemic domain, none of the verbs discussed so far has lost its initial non-epistemic meaning(s). Thus, instead of “losing” their history, the modal verbs in our corpus tend to preserve it and become polyfunctional. The notion of polyfunctionality was defined by van der Auwera, Ammann, and Kindt (2005) as functional coverage by a single item of both non-epistemic (called situational by these authors) and epistemic domain. Assuming that the different modality types suggested by van der Auwera and Plungian (1998) are discrete entities, we can provide a fine-grained distinction between the degrees of polyfunctionality in the modal domain by counting the number of modal types covered by a given verb. This index of polyfunctionality was computed for the seven core verbs for each of the languages involved.

The results are presented in Table 3. The numbers in the table denote the total of the modal types covered by a given verb. The maximum of modal types is eight (see Table 1). Some verbs, however, may occur in other types of modality different from those attested. Cases where there is a strong likelihood of other modal types are marked with ‘+?’. As Table 3 shows, the figures for the first three verbs voida, saada and pitää are more than double the figures for the remaining verbs. A high degree of polyfunctionality actually means less specific semantics or, in other words, an advanced process of desemantisation. Table 3 can help to single out the verb with the highest potential to develop polyfunctionality. This verb is saada ‘to get’, which in Finnish, Estonian and Livonian expresses five types of modality.
The Estonian examples given in (8) illustrate participant-internal (a) and participant-external non-deontic possibility (b), deontic possibility (c) (which is rare), epistemic possibility (d) and participant-external non-deontic necessity (e) (which is also rare):

(8) a. Sina saa-d mind aidata. (Erelt 2003: 107)
   you can(=get)-3SG me help.INF
   ‘You are able to help me.’

   b. Saa-b ujuma minna, kui ilma-d on can(=get)-3SG swim.INF go.INF when weather-PL be.3SG ilusa-d.
      beautiful-PL
   ‘It is possible (for us) to go swimming when the weather is good.’

   c. Kaasa saa-b võtta 10 krooni. (Erelt 2003: 107)
      with can(=get)-3SG take.INF 10 kroon.PRT
      ‘One is allowed to take 10 kroons along.’

   d. Ootamatus-i saa-b alati juhtuda.
      surprise-PL.PRT can(=get)-3SG always happen.INF
      ‘There can always be surprises.’ (Erelt 2003: 107)
e. Sa-i-n ooddata, et mine või hullu-ks.
get-PST-1SG wait.INF that go.IMP.2SG or crazy-TRANSL
‘I had to wait for an insanely long time.’ (Uuspöld 1989: 474)

The types of modality covered by the verb *saada* ‘to get’ in each language are presented in Figure 2.

![Figure 2. Functional coverage of the verb *saada* ‘to get’ – language-based isoglosses](image)

The only domain that is not affected by the functional expansion of *saada* on a family level is epistemic necessity. The evidence for near-obsole...
languages like Veps or Votic is scarce and there is no absolute guarantee that the area covered is not actually larger. Our evidence, however, is robust enough to claim that in the languages spoken in the western part of the area – Livonian, Estonian and Finnish – saada exhibits a higher degree of polyfunctionality than in the eastern languages Karelian, Ingrian, Veps and Votic.

Besides their initial lexical meanings and their modal polyfunctionality, some verbs have acquired additional post-modal meanings, which can be seen as one further step in the process of their auxiliarisation and semantic bleaching. These post-modal extensions derive from various implicational meanings.

The most salient tendency is probably the development of a future, a morphosyntactic category with no distinctive realisation in the majority of Finno-Ugric languages. Historically, the future was expressed with the equivalents of the Finnish lie-, which in some of the languages (Karelian, Veps and Votic) are still used in this function (Metslang 1996). The verb lie- is special in the sense that it is often analysed as a suppletive variant of the auxiliary olla ‘to be’ that is marked for modality/futurity. This functional markedness can be traced back to a rather early stage of Finno-Ugric (see Tauli 1966, Metslang 1996), and therefore it would be speculative to speak about pre- or postmodal uses as no direction of change can be verified. The second most common means of expressing futurity in Balto-Finnic is the verb saada (see e.g. Tauli 1966), and in the Swedish contact area the use of tulla (see Metslang 1996: 132–133) is attested as a marker of the future.

Another target-domain is that of evidentiality. In some languages, such as Finnish and Estonian, the verb pitää has acquired evidential functions. This extension is most stable in Standard Estonian where the 3SG imperfect tense form of pidama is used to express reported evidentiality as illustrated in (9):

(9) Ta pid-i rumal olema (Erelt 2001: 17)
    s/he must(=hold)-PST.3SG stupid be.INF
    ‘He is said to be stupid.’

In general, there seems to be a positive correlation between the high degree of modal polyfunctionality of an item and other signs of increased semantic vagueness. This is valid in regard to the semantic feature of implicativity. In the majority of the languages under consideration, the polyfunctional verb pitää is non-implicative and thus semantically less specific, while its
less polyfunctionalecessive counterparts like Finnish tätä, Karelian tarvita and Estonian tulema tend to be implicative. Compare the Finnish example (10a) where the completion of the action is implied, with the non-implicative (10b).

(10) a. Hänen tätä-i lähteä kuude-lta
   s/he-GEN must(=get_filled)-PST.3SG leave.INF six-ABL
   (ok ja hän läht-i helma-t helmu-ten
   and s/he leave-PST.3SG hem-PL wobble-INF.INS
   / mutta hän jä-i vielä katsomaan
   but s/he stay-PST.3SG still watch.INF
   viimeise-n näytökse-n). (ISK 2004: 1488, alternative added)
   last-GEN performance-GEN
   ‘S/he had to leave at six (ok and s/he left with her/his coat flying open / but s/he stayed to watch the last performance).’

b. Hänen pitä-i lähteä kuude-lta (ok ja
   s/he-GEN must(=hold)-PST.3SG leave.INF six-ABL and
   hän läht-i helma-t helmu-ten
   s/he leave-PST.3SG hem-PL wobble-INF.INS
   / mutta hän jä-i vielä katsomaan
   but s/he stay-PST.3SG still watch.INF
   viimeise-n näytökse-n). (ISK 2004: 1488, alternative added)
   last-GEN performance-GEN
   ‘S/he had to leave at six (ok and s/he left with her/his coat flying open/ ok but s/he stayed to watch the last performance).’

Although the non-implicative reading of pitää seems to be common in Balto-Finnic, in some Finnish dialects this verb is implicative (ISK 2004: 1488–1489) and the situation in the dialects of the other languages must be investigated further. There are also cases in Finnish (Hakulinen and Sorjonen 1989, ISK 2004: 1499) where pitää carries a negative implicature, i.e. implying that the action did not take place. It is possible that the negative implicature is related to the development of a specific function called ‘avertive’ (Kuteva 1999) or ‘impending’ action (Hansen 2004: 256). Example (11) comes from Estonian, but the same phenomenon is attested also in south-western dialects of Finnish (see Laitinen 1992):

(11) Ta pid-i oma koha-st ilma
   s/he must(=hold)-PST.3SG his/her position-ELA without
   jääma. (Erelt 2001: 12)
leave-INF
‘S/he nearly lost her/his position (but didn’t). (Lit. S/he had to lose
her/his position.’)

The development from a negative implicature to a postmodal avertive
function can be explained by the counterfactuality of the proposition.

In sum, the Balto-Finnic evidence shows a positive correlation between
the degree of polyfunctionality within the modal domain, the number of
postmodal extensions and the commonness of non-implicative
interpretations. All these are instantiations of semantic bleaching going
hand in hand with the auxiliarisation of the modal verbs.

5.1.2. Formal erosion

Formal erosion involves both phonological reduction and morphological
degeneration. Strictly speaking, the Balto-Finnic modal verbs do not
undergo phonological reduction. They tend to retain the phonological
substance of their premodal equivalents and be homonymous with them.
One of the few cases where there is a different verb form of the same verb
for the premodal and modal meaning is the Estonian verb
\textit{pidama}. The
premodal (‘to hold’) and modal (‘must’) forms of \textit{pidama} are homonymous
except for the imperfect tense form where the former is realised as \textit{pidas}
and the latter as \textit{pidi}. It is notable that although the form \textit{pidi} is historically
older, its semantic application is novel compared to the semantics
associated with the form \textit{pidas} (see Erelt 2001). This counter-directionality
of semantic and formal change can be explained by the tendency of modals
to select the shortest form available at the time they are being
grammaticalised.

A more holistic approach to the notion of erosion of form would relate it
to the general process of morphological degeneration, which as Lehmann
(2002: 118) points out is the result of an interaction of semantic and
phonological processes. Morphological degeneration can be broadly
understood as a process whereby certain options for inflectional, lexical and
syntactic derivation become blocked. Such “blockings” can be called
paradigmatic restrictions and considered signs of the grammaticalisation of
modals. Habicht (2001), for example, claims that the number of such
restrictions demonstrates a positive correlation with the degree of
grammaticalisation of the modal verb in Estonian. The restrictions attested
in Balto-Finnic fall into the following categories:
– lack of person/number inflection;
– lack of mood inflection;
– lack of voice inflection;
– lack of tense inflection;
– lack of negative or positive forms;
– lack of nominalisation(s) that are productive with other verbs.

As for the first category, it is clear that all the verbs that follow the impersonal pattern lack person/number inflection. The impersonal pattern is a very old construction and for that reason, there are only few cases where the syntactic reanalysis leading to the loss of person/number inflections of a verb is documented. For instance, in Old Written Estonian the modal verb tulema ‘to come’ agreed in person/number with the argument that is nowadays analysed as an object of the infinitive, while in Contemporary Estonian this verb follows the impersonal pattern (see Penjam 2005). These cases are compared in (12a) and (12b):

(12) a. Nende tähtes sanna-de sees tulle-wad mei-l
   these.GEN important word-PL.GEN in come-3PL we-ADE
   keige ennamiste kaks asja tähele panna
   SUPER most two thing.PRT to_notice.INF
   (Seitse Paasto-Jutlust 1817: 56: Penjam 2005: 106)
   ‘In these important words there are two things that need to be noticed above all’

   b. Nende tähtsa-te sõna-de sees tule-b
   these.GEN important-PL.GEN word-PL.GEN in come-3SG
   mei-l kõige rohkem kahte asja tähele panna.
   we-ADE SUPER most two.PRT thing.PRT to_notice.INF
   ‘In these important words there are two things that need to be noticed above all.’

In the Old Written Estonian example in (12a) the argument kaks asja ‘two things’ is analysed as the grammatical subject of the sentence. In Contemporary Estonian (12b) the same argument is however analysed as an object of the infinitive, which is shown by the partitive case of the numeral. Kiuru (1988) documents another case of the loss of person inflection. She shows that Finnish modal verbs lost their original third person present ending -pi earlier than other verbs did.

The lack of imperative forms is an example of the second category (lack of mood inflections). As in many other languages, the modal verbs of the Balto-Finnic family lack imperative forms, although third person imperatives (sometimes considered “jussives”) are attested.
The third category relates to voice restrictions. As a rule, Balto-Finnic modal verbs lack passive/impersonal forms if they follow the impersonal modal pattern, i.e. if they select non-nominative actors (see Laitinen 1992, ISK 2004: 1491, Torn-Leesik 2007).

In contrast to many other European languages, tense restrictions (the fourth category) do not generally hold for the Balto-Finnic. Except for the special verb lie- which in some cases is tense-defective, the other modal verbs are inflected for all tenses available in a given language. In many cases, however, certain tense forms are associated with certain types of modality. Such instances of fossilisation and obligatorification will be discussed in section 5.2. Seuren (2003) argues that the lack of perfect tense is one of the basic characteristics of verbs that go through the process of auxiliarisation. According to this criterion, Balto-Finnic modal verbs are not auxiliaries yet, although they show some sporadic signs of auxiliarisation. For example, in Standard Finnish the epistemic modal verbs tend to get pushed outside the locus of TAM (tense/aspect/mood). Although the examples in (13a) and (13b) are both fully grammatical, example (13a), where the main verb is marked for tense, sounds more natural than example (13b), where the modal bears tense marking.

   house can.3SG [be.INF paint-PST.PASS.PTCP]PERFECT
   ‘It is possible that the house has been painted.’

   house [be.3SG can-PST.PASS.PTCP]PERFECT paint.INF
   ‘It is possible that the house has been painted’

The fifth category is a lack of positive or negative forms. Balto-Finnic has several verbs which behave like polarity items in their modal application. Most follow the impersonal pattern. Examples include Finnish täytyä, Finnish tarvita and Estonian tarvítsema, Estonian pruukima and Ingrian and Votic (hjölla). Consider (14), where the use of the Estonian verb tarvítsema is acceptable in a negative sentence, but not in an affirmative one:

(14) a. *Ta ei tarvítse kodu-s olla.*
    S/he NEG.3SG need home-INE be.INF
    ‘S/he need not be at home.’
The last category, the lack of nominalisations that are productive with other verbs, is one of the most common diagnostics used in the grammars of various Balto-Finnic languages in identifying a class of modal verbs. A classical example is the lack of MA-infinitive of the modal verbs. In the Finnish examples in (15), the main verb *joutua* ‘to be forced’ requires a verbal complement in the form of a MA-infinitive. In (15a) the complement of *joutua* is the MA-infinitive of the lexical verb ‘to go’ and the sentence is grammatical. In (15b), on the other hand, the modal verb *voida* functions as the complement of *joutua*. Since modals do not have MA-infinitive forms, example (15b) is ungrammatical.

(15) a. Joudu-i-n mene-mään.
   be_forced-PST-1SG go-INF(=MA)
   ‘I had to go’

b. *Joudu-i-n voi-maan mennä. (ISK 2004: 1490)
   be_forced-PST-1SG can-INF(=MA) go.INF
   ‘*I had to can go. (meaning: I had to be able to go.)’

There are also derivational restrictions which are semantically motivated. One of them is a restriction on the formation of agentive nouns ending in -ja. It is possible to form agentive nouns only from those verbs which are in an agentive relation with the subject of the underlying clause (see Rätsep 1972: 27). Compare the Estonian examples in (16):

(16) a. ta tahab tulla
   ‘s/he wants to come’ → tulla tahtja
   ‘one who wants to come’

b. ta võib tulla
   ‘s/he can come’ → *tulla võija
   ‘one who can come’
In contrast to (a), the subject ta ‘s/he’ in (b) is not a semantic argument of the finite modal verb, but of the infinitive, and therefore an agentive noun cannot be derived from the modal.

5.2. Paradigmaticity

At first glance, Balto-Finnic modal verbs form a fuzzy category with a very low degree of paradigmaticity. On closer inspection, however, a number of diagnostic criteria can be given, according to which these verbs can be seen as an exceptional subclass of verbs. Most of the paradigmatic restrictions exemplified in section 5.1.2. can be thought of as signs of paradigmaticisation. An ideal example of paradigmaticisation is the shift from an open class to a closed class whose members are linked to each other by clear-cut paradigmatic relations. This often involves an increase in irregularity and fossilization (see Lehmann 2002: 118–122). It is known that in many languages the class of modal verbs is characterised by a cluster of idiosyncratic properties which set it apart from the other verb classes (see Hansen: to appear). As observed in section 5.1, Balto-Finnic languages are not exceptional in this respect. One could say that in these languages certain inflectional, lexical and syntactic derivations, which were available for the original open class verbs, are blocked for the new (closed) class of modal verbs. This would oversimplify the picture. The openness or closedness of a class is a matter of degree (Lehmann 2002: 119–120), and so the number of derivational restrictions also varies for different Balto-Finnic verbs.

Another sign of increased paradigmaticity is the existence of different inflectional restrictions on the verb that reduce the degree of ambiguity/vagueness between different modal readings. These are instances of fossilization – a process in which a certain inflectional form of the verb is steadily associated with a certain modal or postmodal meaning. An example from Estonian is the modal use of the different inflectional forms of the verb *pidama* ‘must’. Disregarding some minor exceptions (see Erelt 2001), only the forms of the third person conditional mood and imperfect tense of *pidama* can receive epistemic readings (Uuspõld 1989), and only the form of imperfect tense expresses reported evidentiality, avertive meaning and intentionality (Erelt 2001). In Finnish, the epistemic reading of *pitää* is common when the verb is in the form of third person present conditional (ISK 2004: 1499). In contrast, the interpretation of Finnish *täytyä* is narrowed by the conditional mood to an exclusively non-epistemic reading (ISK 2004: 1498), as illustrated in (17):
Modals in Balto-Finnic

(17) Hänen täyty-isi olla töi-ssä.
s/he.GEN must(=get_filled)-COND.3SG be.INF work-INE
‘S/he has to be at work.’ (‘S/he is probably at work.’)

On the other hand, when täytyä is in the perfect or pluperfect, it usually receives an epistemic reading (ISK 2004: 1498). All of these restrictions create distinctive paradigmatic relations such as opposition and complementarity, which will also be discussed in the next section as instantiations of decreased paradigmatic variability.

A classical case of fossilization is provided by the verb lie-. In Finnish, the form of the potential mood of lie- may also function as an epistemic particle or adverb (like maybe, probably), i.e. it has been reanalysed as a member of a non-inflectional class, e.g.:

(18) Väliaika-na lie-nee valmistellaan jo
break-ESS be(=SPPL)-POT.3SG prepare.PRS.PASS already
seuraavaa kokoustaa. (ISK 2004: 1522)
next.PRT meeting.PRT
‘Probably preparations will already be made for the next meeting during the break.’

The existence of binary oppositions such as positive/negative or implicative/non-implicative modal verbs, pairs in which each member is related to its opposite by complementarity, is also a sign of high paradigmaticity. This can also be considered an instance of suppletion. The suppletion signals, according to Lehmann, low semanticity of the stem which is the same as a high degree of grammaticalisation: “If the varying stems had a high semanticity, they would not be susceptible to integration into a paradigm” (2002: 122–123).

A clear-cut paradigmatic set can be also identified on the basis of peculiar syntactic behaviours, which, for instance, can be seen in the non-canonical marking of the actor argument in the so-called impersonal modal pattern. As only a limited number of verbs allow this pattern, there has been a tendency in Finno-Ugric studies to give these verbs the status of a closed class and try to find a common semantic basis for the class (the so-called ‘necessive’ verbs).

Despite their relatively low degree of paradigmaticity, the Balto-Finnic modal verbs seem to form a distinct category. Lehmann (2002: 120) points out that the degree of paradigmaticity is often reflected in traditional descriptive terminology by giving a generic category name for the whole paradigm. The existence of such a category in descriptive grammars is not
coincidental; it is needed in order to achieve maximum coverage by the rules of the grammar. Unlike the Slavonic descriptive tradition (see Hansen 2004), the Balto-Finnic tradition uses the notion of ‘modal verbs’. While some earlier descriptions (e.g. Penttilä 1963; Siro 1964; Rätsep 1972) identify the class of modal verbs on purely morphosyntactic grounds, later studies (e.g. Kiuru 1977; Flint 1980; Uuspöld 1989; Kangasniemi 1992; Erelt 2003; ISK 2004) apply semantic criteria to identify this class.

5.3. Paradigmatic variability

The modal verbs in Balto-Finnic are characterised by a relatively high intraparadigmatic and transparadigmatic variability. In most cases, the speaker is free to choose between various modal verbs, between modal verbs and other means of expressing modality, or to leave the category unspecified. This high paradigmatic variability signals a low degree of grammaticalisation (Lehmann 2002: 123–128). There are, however, many cases of decreased variability or, to use another of Lehmann’s terms, of “obligatorification”.

One example is the previously mentioned existence of inflectional restrictions that reduce the degree of ambiguity/vagueness between different modal readings of a verb. Each of these restrictions reduces the intraparadigmatic variability among the members of the class.

Different modal verbs can be compared according to the degree of their obligatorification. For example, the Estonian modal *tulema* ‘to come’ normally requires the subject of the infinitive to have the feature /+animate/ (see Uuspöld 1989 and Penjam 2005 for discussion and exceptions). In contrast, the verb *pidama* ‘to hold’, which is also used for expressing necessity, is not subjected to this restriction. Compare the following sentences, where the subject of the infinitive is non-animate:

(19) a. Müts pea-b pea-s olem. cap must(=hold)-3SG head-INE be.INF ‘A cap must be worn.’ (Uuspöld 1989: 475)

b. *Mütsi-l tule-b pea-s ola. cap-ADE must(=come)-3SG head-INE be.INF ‘A cap must be worn.’ (Uuspöld 1989: 475)

Heine, Claudi and Hünnemeyer (1991: 160) propose a metaphorical transitional chain from specific to abstract meaning which reflects the
process of grammaticalisation. The sequence along the chain is PERSON > OBJECT > ACTIVITY > SPACE > TIME > QUALITY. It seems that the modal verb tulema has retained its premodal semantics to a greater degree since it is semantically restricted to the first (and partly the second) stage while the verb pidama has developed further applications. The fact that the verb pidama is not subject to the selectional restrictions that govern tulema means that pidama is more obligatory and has higher system relevance within the class of modals.

This line of reasoning is, however, misleading as these selectional restrictions should not be attributed to verbs but to constructions (cf. Hansen (to appear) for a similar situation in Slavonic). The restrictions which govern occurrences like (19b) are not attributed to a particular Estonian verb, but to the impersonal construction with a non-nominative actor argument. Thus, verbs like pidama that follow the personal pattern, which is a default construction in Estonian clausal syntax, are naturally more obligatory and have higher system relevance than the verbs following the impersonal pattern, which is much more restricted in its occurrence.

5.4. Structural scope

The structural scope of a gram is “the structural size of the construction it helps to form” (Lehmann 2002: 128). The structural scope of a sign decreases with grammaticalisation. The parameter of structural scope allows a comparison between the grammaticalisation degree of verbs that follow the personal syntactic pattern and that of those following the impersonal pattern. The members of the first group could be called raising verbs as they do not play any role in the selection of the subject of the sentence (see e.g. Torn-Leesik 2007 for Estonian). Instead, they preserve the subject demands of their infinitival complements. In contrast, the members of the latter group are control verbs as they control the selection of the grammatical subject (Davies and Dubinsky 2004). On the basis of this, one can conclude that modal verbs that follow the personal pattern in Balto-Finnic are more grammaticalised (or auxiliarised) than those that follow the impersonal pattern. Consider the following examples from Karelian:

(20) a. Mie voi-n lähtie makuamah.
    I can-1SG go.INF sleep.INF
    ‘I can go to sleep.’
b. *Miu-la piitä lähtie makuamah.*
I-ADE/ALL must(=hold).3SG go.INF sleep.INF
‘I must go to sleep.’ (Pekka Zaikov, p.c.)

While the raising verb in (20a) does not determine the argument structure outside of the VP, the control verb in (20b) selects a nominal argument and thus its syntactic scope reaches beyond the VP-boundary. In broader terms, this means that the first verb affects argument structure only at the phrase level whereas the second verb affects argument structure at the clause level. It has been shown that raising verbs derive etymologically from control verbs (Davies and Dubinsky 2004), and this is a manifestation of a decrease in structural scope or condensation.

The distinction between verbs that determine the argument structure and verbs that do not is a frequently used criterion for delimiting the class of modal auxiliaries (see e.g. Goossens 1987 for English). Until the 1970s, the Finnish tradition considered only the verbs following the personal pattern as modal (see ISK 2004: 1489 for an overview) and in the Estonian tradition this strictly syntactic criterion has been dominant even longer due to the work of Rätsep (1972: 26, 1978: 35–39). The overall tendency, however, has been towards the recognition of semantic factors such as polyfunctionality, so that the class of modal verbs has become a predominantly semantic category (c.f. ISK 2004).

5.5. Bondedness

The degree of bondedness or syntagmatic cohesion is low among Balto-Finnic modal verbs. Constituents may be inserted between the modal verb and its infinitival complement and there are many cases of coordination reduction. Consider (21), from Estonian:

(21) *Kui klient tea-b, mida ta või-b ja saa-b tahta, siis on võimalik ka vastava-id kulu-sid analüüsida.*
if client know-3SG what.PRT s/he can(=be_able)-3SG and can(=get)-3SG want.INF then be.3SG possible too respective-PL.PRT expenditure-PL.PRT analyse.INF
‘When the client knows what he may and can ask for, then it is also possible to analyse the respective outlays.’
No cases of cliticisation are attested, although the Eastern Balto-Finnic languages need to be studied more carefully in this respect.

5.6. Syntagmatic variability

The parameter of syntagmatic variability concerns the positional mutability of a sign with respect to those constituents with which it forms a construction (Lehmann 2002: 140). All modal verbs in Balto-Finnic occur only within the predicate, but within these boundaries their positional freedom is relatively high. They can occur on either side of the infinitival complement although the pre-infinitival position is the unmarked one.

6. Parameter discomfort or a wrong approach?

As Lehmann admits (2002: 143–145), some of the parameters above are very difficult to quantify. This fact and the insufficient information about the paradigmatic and syntagmatic properties of each verb in the present sample make the precise quantification of the degree of grammaticalisation impossible at this stage.

**Figure 3.** Ideal case of grammaticalisation
There are also cases of a lack of correlation between parameters. According to Lehmann (2002: 146), a normal grammaticalisation process should satisfy the following condition: “an item which is grammaticalized in a construction will occupy a point on each of the six parameters in such a way that the six points are roughly on a vertical line.” It follows that the lines for any two items would be roughly parallel (or coincide) and that no intersections should be expected. This prediction is demonstrated in Figure 3. If an item \( X \) occupies point \( c \) on each parameter and an item \( Y \) the point \( n \) on each parameter, the sums of connectors of these parameter-values should form two vertically parallel lines.

Consider now the evidence given in the previous sections concerning the grammaticalisation of the verbs that follow the personal modal pattern and those that follow the impersonal pattern. There are at least three parameters for which one of these groups shows a higher or a lower degree of grammaticalisation than the other. These parameters are formal integrity, paradigmaticity and structural scope. In comparison with the verbs following the personal pattern, the verbs following the impersonal pattern have lost their formal integrity to a greater degree. They lack person/number and voice inflection and they exhibit polarity restrictions more often (see Section 5.1.2.). Due to the idiosyncratic case marking of the actor, they also reveal a higher paradigmaticity as a class (see Section 5.2.).

\[
\begin{array}{c|c|c}
\text{VOIDA} & \text{TÄYTYÄ} \\
\hline
\text{high formal integrity} & \text{low formal integrity} \\
\text{low paradigmaticity} & \text{high paradigmaticity} \\
\text{wide structural scope} & \text{narrow structural scope} \\
\end{array}
\]

*Figure 4. The relative degree of grammaticalisation of voida and täytä*
Thus, based on their formal integrity and paradigmaticity, verbs following the impersonal pattern should be considered more grammaticalised. Nevertheless, their structural scope seems to be wider than the structural scope of the verbs of the personal pattern (see Section 5.4.), which is a sign of a lower degree of grammaticalisation. This parameter discomfort could be illustrated by using such absolute notions as ‘high’ or ‘low’ degree of a property. This is done in Figure 4 for one personal and one impersonal verb, the Finnish *voida* and *täytyä* respectively.

It is obvious that the parameters in the figure do not correlate as expected. There has been a certain amount of disagreement in the Finnic tradition regarding which group of verbs is more grammaticalised. Most scholars (e.g. Siro 1964; Rätsep 1978; Erelt 2003: 106; Torn-Leesik 2007) are inclined to give a status of auxiliary only to the verbs following the personal pattern (due to their narrow structural scope). Laitinen (1992: 162) however claims that the verbs that follow the impersonal pattern are more auxiliary-like, the reason being that they exhibit a number of inflectional restrictions and they do not have a prototypical agent marking. The intersecting lines in Figure 4 portray the source of disagreement well.

One might suspect that the lines would become straight and parallel if one chose an entirely different approach and did not compare the degree of grammaticalisation of verbs but that of constructions. Such a study certainly deserves to be carried out, but at first glance it seems to run into problems of how to operationalise parameters like paradigmaticity when comparing our two constructions. Another way to save Lehmann’s parametric harmony is to reassess the directionality of changes. The problematic parameter seems to be the one of structural scope. As Tabor and Traugott (1998) and recently Song (2005) have shown, changes in grammaticalisation need not always involve decrease in structural scope, but may also lead to an increase in structural scope. If this is correct, and increase in scope is consistent with grammaticalisation, then all the parameters correlate in the expected way and the lines in Figure 4 become straight and parallel.

### 7. Effects of language contact

#### 7.1. Lexical borrowing

Balto-Finnic languages exhibit several cases of lexical borrowing in the domain of modality. Examples include the borrowing of non-finite verbal forms (e.g. Karelian *dolžen* < Russ. ‘be obliged’(=PTCP), see Pyöli 1996;
Sarhimaa 1999) as well as particular finite verbal forms like Karelian and Veps prīššos’ (< Russ. ‘must(=come)-PST.REFL’, see Grünthal 1941: 171 for an example). The degree to which a certain loan is integrated into the structure of a given language varies from pure cases of code-switching in which a native noun agrees with a foreign inflected verb form (e.g. Ingrian toin mōžet ‘the other can’ = ‘Ingr. other + Russ. can-3SG’: Eva Saar p.c.) to fully integrated loans like the Estonian necessity verb pruukima (< Middle Low German brūken). The first cases are more common in highly endangered languages like Votic, Ingrian and Livonian.

7.2. Code-copying

Among the cases of code-copying, a basic distinction can be drawn between semantic and morphosyntactic calques. In the first case a functional isomorphism between the host and the target language is achieved by reorganizing semantic patterns which aim at word-by-word translation. In the second case a formal isomorphism is achieved through morphosyntactic adjustment to the structure of the host-language.

German → Estonian

The abundant German influence first targeted Old Written Estonian – a form created and maintained by native Germans or bilingual individuals. The most striking examples are the following.

The epistemic possibility uses of saama ‘to get’ in Estonian are attested earlier than the non-epistemic uses, which does not conform to the unidirectionality ‘non-epistemic’ > ‘epistemic’ (c.f. van der Auwera and Plungian 1998: 114). These epistemic uses have, however, been explained as direct translations from the corresponding uses of the German verb werden (Habicht 2001). In Old Written Estonian, the verb tahtma ‘to want’ was used with epistemic/future meaning. This now obsolete use is most likely based on the Low German wollen-future (Habicht 2001). Both German sollen and Estonian pidama ‘to hold’ have undergone a development from ‘obligation’ to ‘hearsay’ (see Hansen 2004: 256 for sollen). According to Kask (1984: 270), the hearsay application of pidama is due to the direct influence of sollen.

Swedish → Finnish

Although not so overwhelming, the impact of Swedish on Finnish is comparable with that of German on Estonian.
The Finnish *tulla* ‘to come’ has developed a future meaning probably due to the influence of the Swedish *komma att* construction (Laitinen 1992: 222). According to Raukko and Östman (1994: 52–53) the uses of *saada* ‘get’ as a marker of necessity are likely to be an influence of the Swedish verb *få*. Although such uses are more common in Finnish than in the other Balto-Finnic languages, the same verb can also be used as a marker of necessity in Estonian, Livonian, Karelian and Ingrian, which makes Swedish influence an unlikely explanation. We are more likely dealing with frequential copying (see Johanson: this volume) where Swedish has reinforced pre-existing patterns. There is also an interesting isomorphism between the Swedish and Finnish verbs expressing ability, which cannot be coincidental. In Swedish, the verb *må* has developed from participant internal possibility to the postmodal meaning ‘feel (good)’ (see van der Auwera and Plungian 1998: 105). In Finnish, the verb *voida* has a similar lexical meaning ‘be strong; be in good health, feel good’ as in (22), but the opposite direction of development has been suggested here, i.e. from ‘be strong; be in good health’ to participant internal possibility (Saukkonen 1966: 74).

(22) Minä **voi-n** **hyvin**.

I feel(=be able)-1SG good

‘I feel good. / I am in good health.’

There are also cases of structural isomorphism between Finnish and Swedish dialects. In some Finnish dialects, the necessity verbs which normally follow the impersonal pattern are used personally, and this is ascribed to the impact of the neighbouring Swedish dialects (Laitinen 1992: 48).

Russian → Karelian, Veps, Ingrian, Votic
The dative case in the Russian construction *mne nado/nužno* ‘I-DAT need(=MOD.ADV)’ is substituted in Karelian, Veps, Ingrian and Votic with an external local case (ablative-adessive-allative) (see Pyöli: 1996: 257–258 for the situation in Karelian). Thus, following the Russian construction with the dative, the original genitive case on the nominal argument in the impersonal pattern was replaced with an external local case in Eastern Balto-Finnic. Nevertheless, the construction with the genitive tends to be productive alongside the new construction with local case and there may be cases of functional divergence between the two, but this needs to be studied further.
This Russian model has deeper consequences for the morphosyntax of modal verbs in Eastern Balto-Finnic. The Russian dative construction is similar to the impersonal modal pattern in Balto-Finnic. Word-for-word translations have resulted in an expansion of this pattern in Karelian, Veps, Ingrian and Votic. In these languages the verbs of possibility also tend to follow the impersonal pattern, although they normally follow the personal pattern. This is not surprising considering the fact that the Russian dative occurs also with modals expressing possibility. Based on the available evidence from different Karelian dialects, it is striking that practically all core modal verbs can occur in the impersonal construction with adessive-allative case marking on the nominal argument. Examples are provided in (23):

(23) a. \textit{Voi-d-go} miu-la tei-l’ä
\hspace{0.5cm}can(=be\_able)-3SG-Q you-ADE/ALL
\hspace{1cm}üödä  moata.
\hspace{0.5cm}night.PRT sleep.INF

‘Can I sleep at your place tonight.’ (Palmeos 1962: 33)

b. \textit{Suaw-go} lähtie sinu-l?
\hspace{0.5cm}get(=get).3SG-Q you-ADE/ALL

‘Can you go?’ (SKJ-LD 1990: 364)

c. \textit{Koska auto rikkautu}, mei-lä
\hspace{0.5cm}because car brake.REFL.PST.3SG we-ADE/ALL
\hspace{1cm}pit-i kulkie.
\hspace{0.5cm}must(=hold)-PST.3SG walk.INF

‘As the car broke down, we had to walk.’ (Pekka Zaikov: Standard Karelian, p.c.)

d. \textit{Häne-lä tarvičče-nut sukeltaa.}
\hspace{0.5cm}s/he=ADE need-PST.PTCP dive.INF

‘S/he had to dive.’ (Anastassia Trifonova: Olonets dialect, p.c.)

e. \textit{Miu-l} tuloo sanuo
\hspace{0.5cm}I-ADE/ALL must(=come).3SG say.INF

‘I must say.’ (Saukkonen 1965: 154)

f. \textit{Miu-l} täydyö lähtie
\hspace{0.5cm}I-ADE/ALL must(=get\_filled).3SG depart.INF

‘I need to go.’ (Saukkonen 1965: 147)
Table 4 presents the spread of the impersonal modal pattern with the three most central verbs. Although the evidence from Ingrian is scarce, the situation in Ingrian is probably similar to the situation in Karelian, its closest relative. It is obvious that contact with Russian has triggered a typological drift characterised by an “impersonalisation” of the modal verb system in Eastern Balto-Finnic.

Table 4. Verbs used with the impersonal modal pattern

<table>
<thead>
<tr>
<th></th>
<th>Livonian</th>
<th>Estonian</th>
<th>Finnish</th>
<th>Votic</th>
<th>Ingrian</th>
<th>Karelian</th>
<th>Veps</th>
</tr>
</thead>
<tbody>
<tr>
<td>voida 'to be able'</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>?</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>saada 'to get'</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>pitää 'to hold'</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

The second important consequence is related to the categorial interpretation of modal verbs. In Eastern Balto-Finnic languages, the modal pitää may surface as a main verb. In those cases, pitää is not accompanied by a non-finite form of the main verb, but is itself the only form of the predicate, as illustrated by the following example from Votic:

(24) mi-l piä-b olu (Heinsoo 1990: 42)
    I-ADE must(=hold)-3SG beer.PRT
    ‘I need beer.’

However, the original structure of (24), which is preserved in Finnish and Estonian, requires an infinitive of the verb ‘to be’ after the modal. Such “elliptical” uses like the one in (24) are by no means very old. Since no auxiliary should fill the predicate slot alone, one can assume that these secondary uses manifest an increase of the lexical prominence of the modal, and could be regarded as cases of degrammaticalisation. The omission of the main verb also leads to a categorial reanalysis of the modal. In all such uses, the modal follows the impersonal pattern, and thus appears
only in the form of third person singular as an invariable word. The absence of an infinitival complement makes the verbal status of the modal verb even more opaque, and as a consequence, the frozen 3SG can be reanalysed as an adverb. The reanalysis into a non-inflectional class helps word-for-word translations from Russian as Russian expresses necessity mostly with adverbs (e.g. *nado*, *neļzja*, *nužno*). The example in (25) comes from Lude, an intermediate dialect between Karelian and Veps:

   b. Russian *Čego tebe nado?*
       *what for-you need(=ADV)*
       *‘What do you need?’*

Intense contact with Russian seems to have even more general consequences for the typology of Balto-Finnic languages. Let us consider the choice between expressing modality with modal verbs and expressing modality with adverbs. Porák (1968) noted a peculiar areal distribution of the modal markers in Slavonic. He claims that the west Slavonic languages prefer modal verbs while the east Slavonic languages prefer modal adverbs (see also van der Auwera, Schalley, and Nuyts 2005 for empirical data bearing on this observation). Where the expression of necessity is concerned, a similar areal division seems to hold for Balto-Finnic. The preference for modal adverbs over modal verbs is most striking in Veps − the easternmost language of the family. For example, the adverb *tar(b)již*, whose syntax and semantics duplicate that of Russian *nado*, is the most frequent means of expressing non-epistemic necessity in Veps. In contrast to Slavonic, where this areal distribution is explained with a more general typological pattern, namely with the structural proximity to Standard Average European, in Balto-Finnic, this typological drift is an instance of contact-induced change.

Table 5. Areal properties of the modal verbs in Balto-Finnic

<table>
<thead>
<tr>
<th></th>
<th>West</th>
<th>East</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>high polyfunctionality of ‘to get’</td>
<td>low polyfunctionality of ‘to get’</td>
</tr>
<tr>
<td>2.</td>
<td>verbs of possibility feature</td>
<td>verbs of possibility feature also</td>
</tr>
<tr>
<td></td>
<td>always with personal pattern</td>
<td>with impersonal pattern</td>
</tr>
<tr>
<td>3.</td>
<td>preference for modal verbs</td>
<td>preference for modal adverbs</td>
</tr>
</tbody>
</table>
Table 5 summarises the areal peculiarities of the system of Balto-Finnic modal verbs. There seems to be a clear-cut west-east cline:

8. Conclusions

The main aim of the article was to study Balto-Finnic modal verbs in the framework of the grammaticalisati on parameters proposed in Lehmann (2002). The fact that modal verbs in Balto-Finnic do not form a coherent morphosyntactic class and that the number of modal verbs varies in various treatments of different languages made the selection of modal verbs for the study a difficult task in itself. The selection was further complicated by the fact that the majority of languages discussed here are very poorly studied as regards their modal strategies. Applying the criteria of geographical spread and modal polyfunctionality helped to identify seven verbs which appear to represent best the Balto-Finnic lexical inventory of modality.

Contemporary Finnic linguistics treats modal verbs as a semantically defined class with rather heterogeneous morphosyntactic properties. In other words, modal verbs form a fuzzy morphosyntactic class with few diagnostic features that apply to all of its members. The only clear distinction that can be drawn is that between personal and impersonal patterns, which allows a distinction to be drawn between modal auxiliaries and modal verbs (Torn-Leesik 2007).

The results of the study on the realisation of grammaticalisation parameters in the Balto-Finnic modal verbs point to a relatively low degree of grammaticalisation. The class of modal verbs displays a relatively low degree of semantic integrity, but high formal integrity, low paradigmaticity and high paradigmatic variability. Syntagmatically, verbs following the personal pattern have a narrower structural scope than the verbs following the impersonal pattern, while both exhibit low bondedness and a relatively high syntagmatic variability.

As regards language contact, the class of modals appears to be susceptible to contact-induced change. There are many cases of both lexical loans and structural calques. As for the areas of structural affinity, three main conclusions can be drawn (which, however, are not generally acknowledged in Finnic linguistics). These are: the existence of higher degrees of polyfunctionality of the modal ‘to get’ in western Balto-Finnic languages than in eastern ones, the expansion of the impersonal pattern to verbs of possibility in eastern Balto-Finnic and the increasing preference for adverbial strategies in eastern Balto-Finnic as opposed to the verbal strategies in the western ones.
9. Acknowledgements

This study was supported by grants 2568 and 5202 from the Estonian Scientific Foundation. Our gratitude goes to the language informants Prof. Pekka Zaikov (Standard Karelian), Anastassia Trifonova (Olonets Karelian), Maria Peleshenko (Olonets Karelian) and Deniss Kavinov (Veps); to Eeva Saar who interviewed the Ingrian speakers Jevdokiya Vasil’eva, Zoya Kuznetsova and Nikolai Rodionov, to Natalia Kuznetsova who interviewed the Ingrian speakers Anna Gadyaka, Lyudmila Kosolap, Lyubov’ Ilyina, Sofya Alekseyevna and Valentina Dzhalalova, and to Tiit-Rein Viitso for his valuable information about Livonian. We are also indebted to Mati Erelt, Bernd Heine, Jim Blevins and to the reviewers for their helpful comments on different drafts of the chapter.

Dictionaries and text materials


Notes

1. Not all linguists agree about the status of Ingrian as an independent language. For instance, whereas Finnish linguists often consider Ingrian as a dialect of Karelian or even of Finnish (e.g. Kettunen 1957; Turunen 1988), Soviet Finno-Ugricists treated Ingrian as an independent language (e.g. Ariste 1956). Lude is also either seen as an independent language (Itkonen 1983) or a dialect of Karelian (Turunen 1988; Saarinen 1997, Viitso 1998).
2. Kettunen (1947: 81, 88) also notes that ‘nomen agentis’ can be used to express the potential in Livonian.
3. It must be emphasised that the term ‘impersonal’ here refers to the use of a 3SG verb form and a lack of agreement and should thus be kept apart from the impersonal voice found in most of the Balto-Finnic languages. The impersonal voice is expressed with specific morphological markers, which is in opposition to a system of personal forms, as described in Torn (2002).
4. The premodal meaning is given as an English translation of the modal verbs in the rest of the article.
5. However, in Standard Estonian this verb has a clear lexical meaning.
6. By doing so we alter the sense in which ‘polyfunctionality’ is understood by van der Auwera, Ammann, and Kindt (2005). We also consider polyfunctional those cases that are spread across the boundary between possibility and necessity.
7. By counting the degree of polyfunctionality on the basis of van der Auwera and Plungian’s eight modality types (see Table 1), we disregard some finer distinctions such as ‘physical vs. mental’ participant-internal modality. The coding of this distinction in Balto-Finnic must be studied independently, but the general tendency is that the verbs of possibility express physical but not mental capacity (for which a special verb is preferred), while the necessity verbs are polyfunctional across the distinction between physical and mental participant-internal necessity.
8. As noted by an anonymous reviewer, post-modal meanings do not always reflect one step further in the process of auxiliarization. An example of this will be discussed in section 7.2 under the notion of degrammaticalization.
10. As noted by an anonymous reviewer, it is not unprecedented that borrowings can become the core of the modal system of a language. Such cases are attested in Turkic languages.
11. As previously noted, the fact that a certain verb occurs in a language with the impersonal pattern does not mean that the opposite possibility is not available.
12. The notions ‘Western’ and ‘Eastern’ do not designate any deeper genetic kinship, but geographical reality as well the fact that the Eastern group of languages, unlike the Western group, has been located within the boundaries of Russia at least ever since the Russian-Swedish war in the early 18th century.
13. ‘Degrammaticalization’ is understood here in the traditional sense as a process whereby an item becomes less grammatical and/or more lexical (see Lehmann 2002 for an overview).
References

Ariste, Paul

Ariste, Paul

Bybee, Joan, Revere, Perkins, and William Pagliuca.

Davies, William D., and Stanley Dubinsky

Décsy, Gyula

Erelt, Mati

Erelt, Mati

Flint, Aili.

Goossens, Louis

Grünthal, Villem
Habicht, Külli

Hakulinen, Auli and Marja-Leena Sorjonen

Hansen, Björn

Hansen, Björn

Heine, Bernd, Ulrike Claudi, and Frederike Hünnemeyer

Heinsoo, Heinike

ISK = Iso suomen kielioppi. [Comprehensive Finnish Grammar.]

Itkonen, Terho

Kangasmäki, Heikki

Kask, Arnold

Kettunen, Lauri
Kettunen, Lauri
1957 Isuri keel. [The Ingrian Language.] Virittäjä 61, 124–133.

Kiuru, Silva

Kiuru, Silva

Kuteva, Tania

Laanest, Arvo

Laitinen, Lea

Laitinen, Lea

Laitinen, Lea, and Maria Vilkuna

Lehmann, Christian

Metslang, Helle
Department of Estonian of the University of Tartu.) Tartu: Tartu Ülikool Kirjastus.

Penjam, Pille 2005


Sarhimaa, Anneli  
1999  
_Syntactic transfer: contact-induced change, and the evolution of the bilingual mixed codes: focus on Karelian-Russian language alternation._ (Studia Fennica. Linguistica 9) Helsinki: Finnish Literature Society.

Saukkonen, Pauli  
1965  

Saukkonen, Pauli  
1966  

Seuren, Pieter  
2003  

Siro, Paavo  
1964  
_Suomen kielen lauseoppi._ [Finnish syntax.] Helsinki: Tietosanakirja Oy.

Song, Jae Jung  
2005  

Zaitseva, Maria  
2001  

Tabor, Whitney, and Elizabeth C. Traugott  
1998  

Tauli, Valter  
1966  

Torn, Reeli  
2002  

Torn-Leesik, Reeli  
2007  

Turunen, Aimo  
1988  
The Balto-Finnic Languages. In _The Uralic languages: description, history and foreign influences_, Denis Sinor (ed.), 58–83. (Handbuch


