

(Non)epistemic modality: English *must*, *have to* and *have got to* and their correspondences in Lithuanian

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Abstract

This paper deals with the three types of modality – epistemic, deontic and dynamic. It examines the relation between the synchronic uses of the modal auxiliary *must* and the semi-modals *have to* and *have got to* as well as their Lithuanian translation correspondences (TCs) found in a bidirectional translation corpus. The study exploits quantitative and qualitative methods of research. The purpose is to find out which type of modality is most common in the use of *must*, *have to* and *have got to*; to establish their equivalents in Lithuanian in terms of congruent or non-congruent correspondence (Johansson 2007); and to determine how Lithuanian TCs (verbs or adverbials) correlate with different types of modality expressed. The analysis has shown that *must* is mostly used to convey epistemic nuances, while *have to* and *have got to* feature in non-epistemic environments. The findings show that *must* can boast of a great diversity of TCs. Some of them may serve as epistemic markers; others appear in deontic domains only. *Have (got) to*, on the other hand, is usually rendered by the modal verbs *reikėti* ‘need’ and *turėti* ‘must/have to’, which usually encode deontic modality.

Key words: modality, epistemic, deontic, dynamic, necessity, obligation, translational correspondence, corpus-based analysis

(Ne)episteminis modalumas: anglų kalbos *must*, *have to* ir *have got to* bei jų vertimo atitikmenys lietuvių kalboje

Santrauka

Šio darbo objektas yra trys anglų kalbos modaliniai veiksmažodžiai – *must* ‘turėti/privalėti’, *have to* ir *have got to* ‘turėti/reikėti’ ir jų vertimo atitikmenys lietuvių kalboje.

Tyrimas paremtas tekstynų inspiruota metodologija – empirinė medžiaga paimta iš dvikrypčio lygiagrečiojo tekstyno *ParaCorp_{EN→LT→EN}*, kuri sudaro grožinės literatūros tekstai ir jų vertimai į anglų bei lietuvių kalbas. Straipsnyje pateikiama kiekybinė ir kokybinė šių anglų kalbos modalinių veiksmažodžių ir jų vertimo atitikmenų lietuvių kalboje analizė. Tyrimo tikslas yra nustatyti, koks modalumo tipas (episteminis, deontinis ar dinaminis) vyrauja veiksmažodžių *must* ‘turėti/privalėti’, *have to* ir *have got to* ‘turėti/reikėti’ vartosenoje, kokie yra jų prototipiniai vertimo atitikmenys lietuvių kalboje ir kaip tie atitikmenys koreliuoja su reiškiamu modalumo tipu.

Kiekybinė analizė atskleidžia, kad *have to* ‘turėti/reikėti’ grožinės literatūros tekstuose vartojamas du kartus dažniau nei *must* ‘turėti/privalėti’, o konstrukcijos su *have got to* ‘turėti/reikėti’ yra gana retos. Tai galėtų rodyti, kad pagrindinių anglų kalbos modalinių veiksmažodžių vartoseną nyksta, o jų vietą užima pusiau modaliniai veiksmažodžiai, tokie kaip *have to* ‘turėti/reikėti’ (Leech 2003; Tagliamonte & D’Arcy 2007).

Kiekybinė ir kokybinė analizė parodė, kad tirti lingvistiniai vienetai yra įvairialypiai ir daugiafunkciai. Taip pat buvo patvirtinta pirminė hipotezė – *must* ‘turėti/privalėti’ prototipiškai kvalifikuoja propoziciją episteminiu aspektu: episteminis *must* ‘turėti’ yra dvigubai dažnesnis nei deontinis *must* ‘privalėti’. Kiti du veiksmažodžiai *have to* ir *have got to* ‘turėti/reikėti’ beveik išskirtinai vartojami deontinėje aplinkoje; jų episteminė reikšmė reta. Taip pat paaiškėjo, kad *must* ‘turėti/privalėti’ ir *have to* ‘turėti/reikėti’, nors ir labai retai, gali koduoti dinaminį modalumą, kai kalbėtojas reiškia norą atlikti tam tikrą veiksmą arba kai tam tikro veiksmo būtinumas yra sąlygojamas išorinių aplinkybių.

Vertimo atitikmenų analizė leido nustatyti, kad *must* ‘turėti/privalėti’ dažniausiai verčiamas kaip modalinis adverbialas, kita vertus, *have to* ir *have got to* ‘turėti/reikėti’, išvertus į lietuvių kalbą, dažniausiai išlieka modaliniai veiksmažodžiai; jų prototipiniai atitikmenys yra *reikėti* ir *turėti*, kurie, kaip ir jų anglų kalbos atitikmenys, paprastai figūroja deontinėje plotmėje. Tokią tendenciją galima paaiškinti tuo, kad adverbialai paprastai vartojami tik episteminiam modalumui reikšti, o modaliniai veiksmažodžiai abiejose kalbose yra daugiafunkciai.

Raktažodžiai: modalumas, episteminis, deontinis, dinaminis, būtinumas, vertimo atitikmenys, tekstynų paremta analizė, kontrastyvinė analizė

1 Introduction

Modality is one of the widely discussed issues in linguistics and is especially rich in the proposed theoretical frameworks, interpretations, and definitions. Despite its evasive character, one can distinguish several orientations in definitions of modality, namely

(a) delineation of modality by describing its *types* (cf. Downing & Locke 2002, 38; Nuyts 2006, 1–2); (b) definitions in terms of *speakers' attitudes* (cf. Jespersen 1924, 313; Lyons 1977, 452), (c) definitions in terms of *actuality, factuality, validity, or realis/irrealis* (cf. Lyons 1977, 749; Palmer 1986, 17; Chung & Timberlake 1985, 241; Papafragou 2000, 3; Palmer 2001, 1–2 among others), and (d) definitions in terms of the expression of *possibility* and *necessity* (cf. Kiefer 1994, 2515; van der Auwera & Plungian 1998, 80). In this paper, modality is perceived as the expression of the author/speaker's (subjective) attitudes and opinions towards the state of affairs at a truth-functional level.

There is no unanimous agreement among linguists regarding the list of categories to be placed under the rubric *modal*. Depraetere & Reed (2006) claim that modality is “a cover term for a range of semantic notions such as ability, possibility, hypotheticality, obligation, and imperative meaning” (Depraetere & Reed 2006, 269). In the same vein, Downing & Locke (2002) maintain that “modality is to be understood as a semantic category which covers such notions as possibility, probability, necessity, volition, obligation and permission” (Downing & Locke 2002, 382). However, traditionally it is claimed that modality is best described in terms of its division into different types. To begin with, Bybee *et al.* (1994) single out four types of modality – *agent-oriented, speaker-oriented, epistemic, and subordinating* (Bybee *et al.* 1994, 77). The first type, agent-oriented modality, subsumes such notions as obligation, necessity, intention or desire and implies some external or internal factors that have influence on an agent in performing the action expressed in the main predicate, for example:

(1) *All students **must** obtain the consent of the Dean of faculty concerned before entering for examination.* (Coates 1983, 35)

The agents referred to in example (1) are obliged by some social external factors to obtain permission from the dean. The second type of modality – speaker-oriented modality – deals with “utterances in which the speaker grants the addressee permission” (Bybee *et al.* 1994, 179), such as commands, recommendations, requests or demands; i.e. “speaker-oriented modalities do not report the existence of conditions on the agent, but rather allow the speaker to impose such conditions on the addressee” (*ibid.*). Epistemic modality refers to possibility, probability, and inferred certainty. According to Bybee *et al.* (1994), this type of modality indicates how much the speaker believes the proposition to be true. Finally, subordinating modality is basically a category covering modalities in subordinate clauses.

Although there is no consensus on how many types of modality can be distinguished, following logician von Wright (1951, 1–2), scholars traditionally distinguish three kinds

of modality: *epistemic*, *deontic*, and *dynamic*. Along the same line, Palmer (2001; 2003) proposes the three types of modality in the modal system of English and exemplifies them with the following examples (Palmer 2003, 7):

- (2) Epistemic: *They may be in the office.* – *They must be in the office.*
(3) Deontic: *They may/can come in now.* – *They must come in now.*
(4) Dynamic: *They can run very fast.* – *I will help you.*

Palmer (2001) makes a distinction between *propositional* and *event* modality where propositional modality refers to the “speaker’s judgement of proposition” and event modality is concerned with the “speaker’s attitude towards a potential future event” (Palmer 2001, 7–8), e.g.:

- (5) *John must be in his office.* (ibid. 89)
(6) *Marry must come tomorrow.* (ibid. 91)

Propositional modality is expressed in sentence (5) as it shows the speaker’s attitude towards the truth of the proposition and sentence (6) is an example of event modality, since it refers to the event which has not happened yet but is potential. He also singles out a fourth type of modality – *evidential* modality – and puts it under the rubric of propositional modality together with epistemic modality. The difference between epistemic and evidential modality is that “with epistemic modality speakers express their judgements about the factual status of the proposition, whereas with evidential modality they indicate the evidence they have for its factual status” (ibid. 8). Evidentiality, according to him, is a modality “in which, instead of making a judgment about the truth-value of the proposition, the speaker offers evidence for it” (Palmer 2003, 7). The umbrella notion *event modality* covers deontic and dynamic modalities. Deontic modality relates to obligation and permission and is participant external (see example (3)), while dynamic modality relates to ability and volition and is participant internal (as in (4)) (Palmer 2001, 8–11). The two main categories of event modality – deontic and dynamic – differ in that “deontic modality relates to obligation and permission, emanating from external source, whereas dynamic modality relates to ability or willingness, which comes from the individual concerned” (ibid. 9–10).

This paper keeps to this tripartite classification. Epistemic modality as a philosophical domain and as a linguistic category has been investigated by a number of scholars (Lyons 1977; Coates 1983; Perkins 1983; Palmer 1986, 2001, 2003; Papafragou 2000; Nuyts 2001, 2006; Fachinetti & Palmer 2004; Frawley 2006; Cornillie 2009; Holvoet 2007; Simon-Vandenberg & Aijmer 2007; Hansen & de Hann 2009 among others). Its

core definition is relevantly non-controversial. Epistemic modality is defined as dealing with the “evaluation of the chances that a certain hypothetical state of affairs under consideration (or some aspect of it) will occur, is occurring or has occurred in a possible world” (Nuyts 2001, 21), as in:

(7) *This **must be** a dream.*¹

It concerns an indication of speaker’s estimation of the truth-value of the proposition expressed in the sentence.

Dynamic modality is “characterised as an ascription of a capacity to the subject-participant of the clause” (Nuyts 2006, 3), i.e., whether the person referred to in the utterance has got a capacity of performing the action expressed by the main verb, e.g:

(8) *The measure of your faith is the measure of the pain you **can endure**, the Teacher had told him.*

The sentence above encodes dynamic modality, indicating the subject-participant’s ability to endure pain. However, this core definition of dynamic modality would require a slight amendment since the “category is not restricted to ability alone but also covers the indication of a need or necessity for the first-argument participant” and it also covers “abilities/potentials and needs/necessities which are determined by the local circumstances <...> of the participant” (ibid.). Thus the two sentences below also belong to the domain of dynamic modality, though the proposition is conditioned by some needs/necessities for the first-argument participant or external factors rather than abilities:

(9) *Excuse me. I **have to go** to the bathroom to wash my hands.*

(10) *To participate in the contest you **must fill in** the application.*

Traditionally deontic modality deals with the notions of permission and obligation (Palmer 2001, 8–11) and it can be defined as an “indication of the degree of moral desirability of the state of affairs expressed in the utterance typically, but not necessarily, on behalf of the speaker” (Nuyts 2006, 4), e.g.:

(11) *This line is secure, Mr. Langdon. You **may use** it.*

(12) *That is the fact that you **have got to relearn**, Winston.*

¹ All the examples that come from the original English texts in the ParaCorp_{EN→LT→EN} do not carry any labels. The translationally related sentence pairs have labels EN-orig and LT-trans, respectively.

In other words, deontic modality includes various degrees of permission and obligation varying from absolute moral necessity to acceptability.

Having defined modality and its types, a brief account of English modal auxiliaries is due. Modal auxiliaries are traditionally divided into central and peripheral or marginal modals (Depraetere & Reed 2006, 272). The group of central modals consists of such verbs as *can*, *could*, *may*, *might*, *must*, *should*, *shall*, *will*, and *would*. These modals cannot occur in constructions which require secondary inflectional forms, do not exhibit person-number agreement, take bare infinitival complements, precede the negative particle *not* in negation, cannot co-occur with each other in the verb phrase, and precede the subject in yes-no questions (Huddleston & Pullum 2002, 106–107; Biber *et al.* 1999, 483). The group of peripheral auxiliaries includes *dare*, *need*, *ought to*. Although Biber *et al.* (1999, 484) claim that “these verbs can behave like modals in taking auxiliary negation and yes-no question inversion”, Depraetere & Reed (2006, 272) assure that they can “only occur in non-assertive contexts”. The last group is semi-modals which includes *have to*, *be able to*, *be going to*, *be supposed to*, *be bound to*, and *be about to*. What is inherent to the semi-modals is that they can occur together with the central modal auxiliaries; they inflect for person and number, and have non-finite forms (Depraetere & Reed 2006, 273). This paper adheres to this traditional classification of modals. The point of departure is the analysis of the central modal auxiliary *must* and, as claimed in Coates (1983, 52), since “no discussion of MUST or of the modals of Obligation and Necessity would be complete without reference to” the semi-modals *have to* or *have got to*, the latter two will be considered as well.

Contemporary research on the English modal auxiliaries of obligation and necessity is quite extensive (Coates 1983; Perkins 1983; Hoye 1997; Tagliamonte 2004; Nokkonen 2006 among others). Contrastive studies are not rare either (Simon-Vandenberghe & Aijmer 2007; Mortelmans 2010; Šinkūnienė & Van Olmen 2012; Šolienė 2012). However, a comprehensive comparison of the two structurally different languages as English and Lithuanian dealing with the three types of modality and based on empirical data from a parallel corpus has been overlooked. The focus of the present corpus-based study is on the relation between the synchronic uses of the central modal auxiliary *must* and the semi-modals *have to* and *have got to* as well as their Lithuanian translational correspondences (TCs) found in a bidirectional translation corpus (the adverbials² *tikriausiai*, *greičiausiai*, *veikiausiai* ‘certainly/surely/most probably’, *turbūt* ‘probably’, *matyt* ‘seemingly’ and the modal verb *turėti* ‘must/have to’), identifying differences and similarities of how modal meanings are expressed in the two languages, e.g:

² For the explanation of the term see Smetona & Usonienė (2012).

(13) *He must have broken the window!*

‘ Tikriausiai	jis	išdauž-ė	langą.’
probably.ADV	he	break-PST.3	window.ACC

(14) *I have to move to the doorway.*

‘ Tur-iu	nuciti	prie	durų.’
have-PRS.1SG	go.INF	to.PREP	door.GEN

The paper aims to examine the uses of *must*, *have to* and *have got to* in order to ascertain which type of modality – epistemic, deontic or dynamic – is most common in the use of the modals in fiction texts. The primary hypothesis is that *must* functions usually as a marker of epistemic modality, while *have to* and *have got to* are used in the deontic domain (Huddleston & Pullum 2002; Hoyer 1997; Mortelmans 2000; Tagliamonte 2004; Tagliamonte & D’Arcy 2007 among others). It also aims to establish their translation correspondences in Lithuanian in terms of congruent and non-congruent TCs (Johansson 2007): i.e., to investigate whether the Lithuanian modal verbs (*galėti* ‘can/may’, *turėti* ‘must/have to’, and *privalėti* ‘be obliged to’) or adverbials feature more frequently as TCs of the English modals in question in Lithuanian. Finally, the paper sets out to determine how Lithuanian TCs (verbs or adverbials) correlate with different types of modality expressed by *must*, *have to* and *have got to*.

2 Data and methods

As modality is a complex category encompassing more than one linguistic field, including morphology, lexicon, syntax and pragmatics, fine-grained cross-linguistic differences and similarities are difficult to discover by introspection or analysis of self-invented examples. The corpus-based approach helps to reveal cross-linguistic patterns which would be difficult to pin down otherwise. Combining both comparable and parallel corpora, thus taking advantage of the specific merits of both types, allowed me to establish the correspondences between the formal and functional features in the source language (SL) and target language (TL) texts and draw parallels between them.

The empirical data come from a self-compiled bidirectional parallel corpus – ParaCorp_{EN→LT→EN} (Šolienė 2013). The corpus is designed following the model of the English-Norwegian Parallel Corpus (Johansson 2007). The ParaCorp_{EN→LT→EN} comprises original English fiction texts and their translations into Lithuanian and original Lithuanian fiction texts and their translations into English. The advantage of such a corpus composition is that it allows different directions of comparison and can be used both as a parallel corpus and a comparable corpus (Johansson 2007, 11). The size of the corpus is about 5 million words (see Table 1):

	Original	Translation	Total
ParaCorp _{EN→LT}	1,983,266	1,541,038	3,524,304
ParaCorp _{LT→EN}	608,426	788, 897	1,397,323

Table 1. Size of the two sub-corpora ParaCorp_{EN→LT} and ParaCorp_{LT→EN}

The study utilizes quantitative and qualitative methods of research. Frequencies of particular linguistic items are of paramount importance to this study, since frequency may be an important factor in specification of meaning (Leech 2003; Simon-Vandenberg & Aijmer 2007). Since the sub-corpora ParaCorp_{EN→LT} and ParaCorp_{LT→EN} differ in size, the raw frequency figures have been normalized per 10, 000 words (Meyer 2002, 126; Biber *et al.* 1999, 263–264).

In order to generate concordances of the linguistic items in question, the multilingual tool *ParaConc* (Barlow 1995) was used. The entire 5-million-word corpus was exhaustively searched for tokens of *must*, *have/has/had to*, and *have/has/had got to*. After the concordance lines had been extracted from the corpus, the output files with the data were saved in plain text format. Then, the *.txt* files were imported into *Excel* spreadsheets and further manual analysis was carried out in them since the ParaCorp_{EN→LT→EN} is not annotated. It should be noted that the *ParaConc* tool extracts all the available (not necessarily relevant to the research question) forms, so even before doing the initial quantitative analysis, the data were sifted and irrelevant concordance lines which did not comply with the requirements of the research were eliminated. The following cases were excluded from further analysis: lexical verbs as in (15); cases where *have* was used as part of the complement to a modal auxiliary verb as in (16) or carried idiomatic meanings, for example, (17); where *must* was used as a noun as in (18). Negative contexts have not been considered in the analysis since the scope of negation differs: the target of negation may be the modality itself or the lexical verbs (see Tagliamonte & D’Arcy 2007, 62). The examples of the excluded uses are given below:

(15) *What do I **have** to fight with? My hands or my tongue?*

(16) *My thoughts were hazy, still twisted up in dreams and nightmares; it took me longer than it **should have to** realize where I was.*

(17) *I don’t understand what dance **has to do** with it.*

(18) *There’s no **must** about it, my dear.*

(19) *“I’m glad we **didn’t have to** fight that one,” Harry whispered as they stepped carefully over one of its massive legs.*

The analysed data set includes relevant to the research question forms of *must*, the three forms of *have to* and *have got to* (the present 1st and 2nd person (*have (got) to*), the past (*had (got) to*), and the 3rd person singular (*has (got) to*) forms) and their contractions – as well as their translations into Lithuanian. First of all, the initial quantitative data set included 1,201 occurrences of *must*, the three forms of *have to*, which in total make up 2,202 cases, and 24 hits of *have/has/had (got) to*. After the elimination of certain sentences, explained above, the numbers of the occurrences have changed. The change can be observed in Table 2 in the Findings and discussion section.

Secondly, the qualitative method was employed to distinguish epistemic, deontic, and dynamic uses of the modal realizations under study. As suggested by Palmer (2001, 7), epistemic and deontic modality can be distinguished by the use of paraphrases “It is necessarily the case that...” for epistemic modality and “It is necessary for...” for deontic modality, e.g.:

(20) *Kate must be home now.*

It is necessarily the case that Kate is home now.

(21) *Kate must come in now.*

It is necessary for Kate to come in now. (ibid.)

The important distinction here is indicated by the words “that” and “for” (ibid.). The former is related to epistemic domain, while the latter – to deontic.

3 Findings and discussion

First of all, the quantitative research has shown that the three forms of *have to* (the present 1st and 2nd person, the past and the 3rd person singular forms) occurred in 2,202 cases in total and are almost twice more frequent than *must*. Consider the figures in Table 2.

	<i>must</i>	<i>have to</i>			<i>have got to</i> ³
		<i>have to</i>	<i>had to</i>	<i>has to</i>	
<i>ParaCorp</i> _{EN-LT}	1,201 (1,178)	1,223 (1,200)	876 (855)	103 (99)	82
		2,202 (2,154)			82 (82)
Total	3,485 (3,414)				

Table 2. The number of occurrences of *must*, *have to* and *have got to* in *ParaCorp*_{EN→LT}

³ The column for *have got to* includes all the relevant forms, i.e. *have got to*, *has got to*, *had got to* and their contractions. They are not listed separately in the table since the numbers were not statistically significant.

After some cases had been excluded from the analysis (following the criteria explained in the Data and methods section), the overall token frequencies, which come in brackets in Table 2, changed. However, the change is not significant and *have to* remains twice more frequent than *must*; *have got to* is the least frequent of the three.

The first task of the qualitative analysis was to find out which type of modality – epistemic, deontic or dynamic – is expressed most often by the central modal auxiliary *must* and its historically later quasi-modal variants *have to* and *have got to*. The results obtained are in line with previous research (Coates 1983; Heine 1995; Hoyer 1997; Huddleston & Pullum 2002; Tagliamonte 2004 among others), which has shown that *must* is mostly used to encode epistemic modality, while *have to* and *have got to* usually carry deontic meaning (see Figure 1).

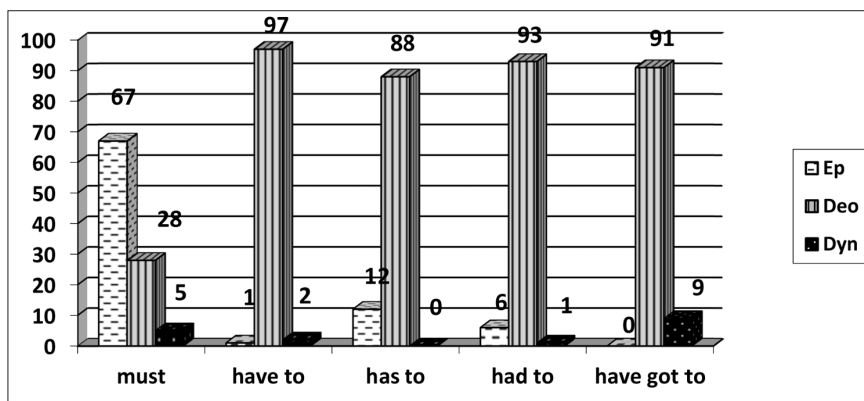


Figure 1. Epistemic, deontic and dynamic readings of *must*, *have to* and *have got to* in percentage

Figure 1 shows that there are some distinctive features in the use of the modals in question. It reveals that epistemic readings are mostly lexicalized by *must* (67%); however, *must* can express deontic (28%) or dynamic (5%) modality too, the difference between the percentage of the three types is not that significant as in the case of *have to* and *have got to*, where deontic meanings are prevalent. If the three forms of *have to* (the present 1st and 2nd person, the past and the 3rd person singular forms) are taken together, the total percentage of epistemic, deontic, and dynamic *have to* is respectively 6.3%, 92.6% and 1%. The dynamic use of the three modals is very rare.

3.1 *Must* in English originals

As indicated in Figure 1, the use of *must* for epistemic modality, as in (22), was very frequent (67%), e.g.:

(22) *There **must have been** over two hundred in the black-suited crowd outside the crematorium now.* (epistemic)

Some scholars maintain that *must* can have two core meanings: it can belong to the semantic cluster of obligation and necessity, which refers to deontic modality, or it can express epistemic necessity and confident inference (Coates 1983; Downing & Locke 2002; Depraetere & Reed 2006; Mortelmans 2010). However, *must* can also feature in dynamic contexts. Dynamic environments involve the notions of ability and willingness; in addition, dynamic modality “covers the indication of a need or necessity for the first-argument participant” (Nuyts 2006, 3), e.g.:

(23) *Shivering, he pulled himself to his feet. I **must** find some way <...>* (dynamic)

The example above illustrates how *must* can denote the speaker’s need or necessity: the given circumstances demand the speaker to try and find a way out of the situation. Moreover, some uses of *must* might be problematic and difficult to assign to one or another type of modality, e.g.:

(24) *I **must** admit I felt a sickness inside when I heard this.* (dynamic)

(25) *I **must** say, I prefer the lives where we can kiss.* (dynamic)

However, it is not an impossible task. First, it can be undoubtedly claimed that in (24) and (25) *must* is non-epistemic since it does not entail the speaker’s judgement of the truth-value of the proposition. Second, there is no obligation or permission imposed from an external source; instead, willingness comes from the individual concerned which, according to Palmer (2001, 10), is a feature of dynamic modality. In addition, as in (23), (24) and (25) convey an internal need for the first-argument participant. On the other hand, *must* in (26) is deontic as there is an external authority which imposes an obligation, e.g.:

(26) *You **must** go to her and ask.* (deontic)

Furthermore, dynamic modality can be not only participant-inherent, but also participant-imposed, i.e. it covers not only willingness, needs and abilities, or necessities inherent to the first-argument participant but also “abilities/potentials and needs/necessities which are determined by the local circumstances <...> of that participant” (Nuyts 2006, 3–4), e.g.:

(27) *Sometimes to find truth, one **must** move mountains.* (dynamic)

In this case necessity emerges not from obligation or permission by some external authorities as in deontic environments, but from circumstantial factors. Dynamic *must* is rather rare (5%), so “some linguists only use the deontic/epistemic distinctions in connection with MUST” (Nokkonen 2006, 32). On the other hand, deontic *must* is much more common than dynamic (28%), e.g.:

(28) *A player **must** not use the equipment that is dangerous to him or others.* (deontic)

(29) *No, Grandpa. You **must** do it yourself.* (deontic)

(30) *On this day, and on no other, you **must** come to the factory gates at ten o'clock sharp in the morning.* (deontic)

In these sentences the speaker expresses obligation: in (28) the subject of the proposition is ordered not to use dangerous equipment, in (29) it is necessary for the grandfather to do something on his own, and the addressee is obliged to come to the factory in (30). It is important to note that sometimes an external source may be certain rules or laws, as in example (28), but very frequently the authority is the speaker who gives permission or imposes an obligation on the addressee, as in (29) and (30), and “the conditioning factor for the action lies with the speaker, not the subject” (Palmer 2001, 10).

To summarize, it is clear that, although rarely, the central modal *must* may convey dynamic meanings, especially when it expresses willingness/volition or need/necessity for the first-argument participant and when abilities or necessities are determined by the local circumstances. The use of deontic *must* is more frequent than dynamic since very often it expresses obligation imposed on the subject of the proposition by an external authority. The authority imposing an obligation in deontic environments can be either a certain rule/law or the speaker granting permission or obliging the addressee to perform a certain action. Finally, the most frequent use of *must* in the empirical data has been attested to be epistemic, encoding meanings of certainty and necessity.

3.2 *Have to* and *have got to* in English originals

The analysis of the data has shown that the semi-modals *have to* and *have got to* are most commonly used to encode deontic meanings (see Figure 1). However rarely, in some cases *have to* can have dynamic and epistemic readings. *Have got to*, on the other hand, is never epistemic. As in the case of *must*, the most unusual, though possible, meanings carried by *have to* and *have got to* are those of volition and willingness. Moreover, these semi-modals can also express the necessity for the first argument participant and abilities or necessities determined by some local circumstances, for example:

(31) *'I'm going through a really intuitive time at the moment, I **have to** say,' says GoodNews.* (dynamic)

(32) *No magic in the corridors. I'll **have to** report this, you know!* (deontic)

(33) *I **have to** go to the bathroom. I **have to** pee.* (dynamic)

(34) *Shoot, I'll **have to** borrow your phone. I think I must have left mine in the car.*
(dynamic)

In (31), as in sentences (24) and (25), there is a kind of willingness expressed by the speaker. There are no external authorities that would impose an obligation or grant permission; the speaker himself/herself does not imply any kind of obligation. On the contrary, he/she intends to express his/her volition to say something in contrast to deontic *have to* in (32), where the speaker considers it morally right and is obliged by the authorities to report the fact if someone breaks the rules. Example (33) deals with the need for the first-argument participant to go to the bathroom. In this case, likewise, there are no external factors forcing the speaker to do that; the need is fully inherent to the first-argument participant. Sentence (34) exemplifies participant-imposed dynamic modality which, as already mentioned, covers needs and necessities conditioned by some external factors and local circumstances – under the given circumstances the speaker needs to borrow a phone.

A more common, though still unusual, usage of *have to* is epistemic. Out of the three forms, *has to* seems to be more liable to encode epistemic modality (12%). The findings are in line with Heine's (1995, 25) claim that "epistemic modality correlates most strongly with third-person and least strongly with first-person subjects". As is widely acknowledged, epistemic modality deals with an "indication of the estimation <...> of the chances that the state of affairs expressed in the clause applies in the world" (Nuyts 2006, 6), for instance:

(35) *"There **has to be** a way to make it work," Jacob muttered.* (epistemic)

(36) *He thought there **had to** be something overlooked but there wasn't.* (epistemic)

The given examples can be paraphrased using the paraphrase 'it is necessarily the case that': in (35) it is necessarily the case that there is a way to make it work and in (36) it was necessarily the case that something had been overlooked. Such a paraphrase suggests that the examples entail the "speaker's judgment of the proposition" (Palmer 2001, 7).

Though most scholars more or less unanimously agree on the notion of epistemic modality and maintain that its definition is relatively non-controversial, some instances of epistemic *have to* were ambiguous in the data⁴. In sentences (37b), (38b), and (39b),

⁴ The wider context (a stretch of two or more preceding or following sentences) helped to categorize the ambiguous occurrences as either deontic, dynamic or epistemic.

the context is essential for disambiguating the conveyed meanings. If the sentences providing additional information about the situation or action referred to are omitted, the propositions may receive different interpretations, e.g.:

- (37) a. *Something really extraordinary **had to** be inside this top security vault.* (deontic/epistemic)
b. *Something really extraordinary **had to** be inside this top security vault, Harry was sure, and he leaned forward eagerly.* (epistemic)
- (38) a. *Gabbe **had to** be joking.* (deontic/epistemic)
b. *Luce shook her head. Gabbe **had to** be joking. Surely this was some kind of game.* (epistemic)
- (39) a. *I **have to** be fairly close.* (deontic/epistemic)
b. *And I can't hear anyone, anywhere. I **have to** be fairly close.* (epistemic)

If sentence (37a) is assumed to be deontic, its reading would be the following: 'it was necessary for something extraordinary to be in the top security vault'. Such interpretation refers to the event that is not actualized, which, according to Palmer (2001), is typical of event modality. However, if a wider stretch of context is taken into account, as in (37b), it becomes clear that the proposition is qualified as epistemic since the context entertains speaker's certainty – 'Harry was sure'. Likewise, (38a) can be interpreted as deontic obligation imposed on Gabbe to be joking; the paraphrase would be 'it is necessary for Gabbe to be joking'. However, the context in (38b) disambiguates the proposition: it is obvious that the speaker expresses his/her attitude by guessing that this is 'some kind of game' and the paraphrase is 'it is necessarily the case that Gabbe is joking'. Finally, (39a) could be read as 'I am obliged by some external authorities to be close'; however, some additional context in (39b) makes it clear that the speaker actually makes an inference based on the fact that he/she can't hear anyone.

Moreover, the analysis of the data has provided enough evidence to support the hypothesis that the prototypical meaning encoded by *have to* and *have got to* is deontic, which refers to obligation and permission yielded by external sources. According to the empirical data, 92.6% of all the cases of *have to* and 91% of *have got to* featured in deontic environments, e.g.:

- (40) *All you **have to** do is make sure Crabbe and Goyle find them.* (deontic)
(41) *You told me that I **had to** drink that stuff, and I **had to** pay for that.* (deontic)

It must be noted that while with deontic *must* the speaker usually has authority, with deontic *have to* the "authority comes from no particular source" (Coates 1983, 55). It

suggests that the sentence is objective rather than subjective and the speaker’s stance is neutral, e.g.:

(42) *Is it a fact, for instance, that you **had to** call them ,Sir‘ and take off your cap when you passed them?* (deontic)

(43) *Whoever puts together the highlights **has to** choose what sort of story to tell.* (deontic)

The subject of the sentence is obliged to address somebody in a polite manner and take off their cap in (42); however, the obligation is not imposed by the speaker – it comes from an indirect source instead, most likely some rules of social conduct, thus leaving the speaker completely neutral. Similarly, in (43) the paraphrase is ‘it is necessary for the addressee to choose what sort of story to tell’, but the speaker is not the originator of the deriving necessity.

To recapitulate, the results of the study corroborate the primary hypothesis that *have to* and *have got to* usually feature in deontic environments rather than epistemic or dynamic ones. However, they can also be used to express willingness and necessity for the first-argument participant, needs/necessities and abilities determined by the local circumstances, and finally, the speaker’s attitude towards the factual status of the proposition. The context is of paramount importance in disambiguating between the different types of modal meaning expressed.

3.3 Lithuanian correspondences of *must*, *have to* and *have got to*

One of the tasks of the paper was to determine the congruency of correspondences of *must*, *have to* and *have got to* in Lithuanian. The TCs are displayed in Table 3 below.

TCs of <i>must</i> in LT-trans	%
<i>turėti</i> ‘must/have to’	23%
<i>tikriausiai</i> ‘most probably’	22%
<i>turbūt</i> ‘probably’	9%
<i>matyt</i> ‘seemingly’	6%
<i>privalėti</i> ‘have to’	5%
<i>reikėti</i> ‘need’	2%
<i>Other</i>	10%
Ø	23%

Table 3. Translational correspondences of *must* in ParaCorp_{EN→LT}

As can be seen from Table 3, the most frequent Lithuanian TC of *must* is the modal verb *turėti* ‘must/have to’ (23%) and the modal adverbial *tikriausiai* ‘most probably’ (22%). The Lithuanian modal adverbials *tikriausiai* ‘most probably’, *turbūt* ‘probably’ and *matyt* ‘seemingly/evidently’ make up in total 37%. The modal verbs *turėti* ‘must/have to’, *privalėti* ‘be obliged’ and *reikėti* ‘need’, similarly, sum up to 30%. Still, the difference in the percentage indicates that *must* is more often translated into Lithuanian using an adverbial strategy rather than the verbal one (cf. van der Auwera *et al.* 2005; Usonienė & Šolienė 2010; Šolienė 2012, 2013). Other TCs include the adverbials *veikiausiai* ‘most probably’, *greičiausiai* ‘most likely’ and *galbūt* ‘maybe’, as well as the verbs *galėti* ‘can/may’ and *tekti* ‘be gotten’.

Completely different results have been obtained when the correspondences of *have (got) to*⁵ were investigated. Due to the deontic nature of *have (got) to*, Lithuanian verbs which normally convey deontic nuances too are found as prototypical TCs (see Table 4):

TCs of <i>have (got) to</i> in LT-trans	%
<i>turėti</i> ‘must/ have to’	40%
<i>reikėti</i> ‘need’	17%
<i>tekti</i> ‘be gotten’	11%
<i>privalėti</i> ‘be obliged’	5%
<i>galėti</i> ‘can/may’	2%
<i>tikriausiai</i> ‘most probably’	1%
<i>Other</i>	9%
∅	15%

Table 4. Translational correspondences of *have (got) to* in ParaCorp_{EN→LT}

As is displayed in Table 4, the Lithuanian modal verb *turėti* ‘must/have to’ is the most frequent TC of *have (got) to*. The same verb was the most common translation of *must*, too. However, contrary to *must*, *have (got) to* is more often translated into Lithuanian as a modal verb; in total, modal verbs make up 75% of all the correspondences. Verbal TCs include *turėti* ‘must/have to’, *reikėti* ‘need’, *tekti* ‘be gotten’, *privalėti* ‘be obliged’ and *galėti* ‘can/may’. The modal adverbial *tikriausiai* ‘most probably’ accounts for only 1% of all the TCs of *have (got) to* in the corpus. In a way, the results go counter to the findings relating to the adverbial TCs of *must*, where *tikriausiai* ‘most probably’ was the second correspondence in terms of frequency ranking. The percentage of zero correspondence (15%) is slightly lower than for *must* (23%), e.g.:

⁵ Table 4 includes the TCs for all the forms of *have to* and *have got to* taken together.

- (44) EN-orig: *Hagrid, he said quietly, “I think you **must have made** a mistake”.*
 LT-trans: – *Hagridai, – ramiai tarė jis, – manau, jog Ø **suklydote**.*
- (45) EN-orig: *I’ve **got to** go to the library!*
 LT-trans: *Ø **Einu** į biblioteką.*

This phenomenon might depend upon the non-epistemic character of *have(got) to*: numerous studies have shown that epistemic markers are usually more evasive in translation (Usonienė & Šolienė 2010; Šolienė 2012; Usonienė & Šinkūnienė 2014). One more important observation is that deontic *must* and *have (got) to* in many cases were rendered into Lithuanian by a verb in the imperative mood, e.g:

- (46) EN-orig: *You **must** start making preparations at once!*
 LT-trans: *Tuojau pat **pradėkite** ruoštis!*
- (47) EN-orig: *You’ll **have to** go up to the Owlery if you want food.*
 LT-trans: *Jeigu nori lesti, **skrisk** į pelėdyną.*

Though there are no overt TCs, the meaning of the original proposition is more or less compensated by the verbs in the imperative *skrisk* ‘fly’ and *pradėkite* ‘start’, which directly impose obligation on the addressees.

An important observation can be made when comparing the Lithuanian TCs of *must* and *have (got) to* in the light of congruent or non-congruent correspondence (Johansson 2007) or the use of adverbial and verbal strategy in translation (van der Auwera *et al.* 2005). Figure 2 gives a sum-up of the TCs of *must* and *have (got) to*.

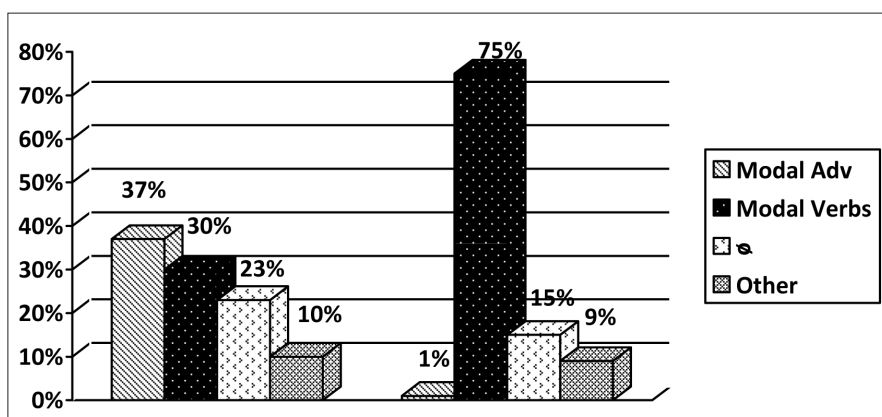


Figure 2. Lithuanian TCs of *must* and *have (got) to*: adverbial and verbal strategy in translation

The translational profile of *must* shows that it is more often rendered into Lithuanian as a modal adverbial (37%) rather than as a modal verb, while the TCs of *have (got) to* exhibit a different picture: the modal verbs dominate as TCs (75%). This can be explained by the fact that modal adverbials encode epistemic meanings (Holvoet 2007, 131). As the present study has shown, *must* more often conveys epistemic meanings, whereas *have (got) to* hardly has any. Modal verbs, on the other hand, are multifunctional and can express different types of modality, e.g.:

- (48) EN-orig: *Things **must** have gone well in Paris tonight.*
 LT-trans: *Tikriausiai šiandakt Paryžiuje viskas klostosi sklandžiai.*
- (49) EN-orig: *People with cheaper tickets **have to** arrive two weeks beforehand.*
 LT-trans: *Žmonės, turintys pigesnius bilietus, **turėjo** atvykti prieš dvi savaites.*
- (50) EN-orig: *“There **has to** be a way to make it work,” Jacob muttered.*
 LT-trans: – ***Turi** būti kokia nors išėitis, – sumurmėjo Džeikobas.*
- (51) EN-orig: *To participate in the contest you **must fill in** the application.*
 LT-trans: *Jei norite dalyvauti varžybose, **turite** užpildyti paraišką.*

When *must* is rendered as an adverbial, it unambiguously has an epistemic reading. *Turėjo* ‘must/have to-PST.3’ is deontic since there is an obligation imposed on the subject of the proposition (as in (49)) and in (50) the verb *turi* ‘must/have to-PRS.3’ carries epistemic meaning as the speaker expresses his/her attitude towards the truth-value of the proposition. Example (51) yields a dynamic reading. This shows that the Lithuanian verb *turėti* ‘must/have to’ is of multifunctional nature and can appear in epistemic, deontic and dynamic environments.

It must be noted that the analysis of the TCs has shown that the semantic values of the English modals are usually maintained in the Lithuanian correspondences; for example, all the dynamic values in English are translated by dynamic equivalents in Lithuanian, which are normally the two modal verbs *turėti* ‘must/have to’ and *reikėti* ‘need’, e.g.:

- (52) EN-orig: *It’s too cold. We **have to** go.*
 LT-trans: *Labai šalta, **reikia** eiti.*

The TCs in the deontic field are also of verbal character, namely the verbs *turėti* ‘must/have to’, *reikėti* ‘need’ and *privalėti* ‘be obliged’. While *turėti* ‘must/have to’ and *reikėti* ‘need’ are semantically versatile, the latter verb can feature in deontic contexts only, e.g.:

(53) EN-orig: *This is a matter of life or death. You **must** help me.*

LT-trans: *Tai gyvybės ar mirties klausimas. **Privalote** man padėti.*

However, some of the deontic meanings of *have(got) to* (2%) have been rendered into Lithuanian by *galėti* ‘can/may’, which is a verb expressing modal possibility rather than necessity, e.g.:

(54) EN-orig: *They were hampered, of course, by the fact that they weren’t allowed to wander off on their own but **had to** move around the castle in a pack with the other Gryffindors.*

LT-trans: *Kliudė tai, kad buvo draudžiama slampinėti atskirai, po pilį **galėjai** vaikščioti tik būryje su kitais „grifukais“.*

It cannot be claimed that there is a shift to a different type of modality; still, we are dealing with obligation/permission springing from certain official rules, i.e. deontic modality. The only difference is in the modal ‘strength’ of the expression.

4 Concluding observations

The quantitative analysis of the data has indicated that *have to* is twice more frequent than *must*. The construction with *have got to* is the least frequent. Leech (2003, 236) notes that many of the English modals (e.g. *shall, need, ought to*) are coming to “the end of their useful life”. The frequency results of this study are in line with Tagliamonte and D’Arcy (2007, 82), who claim that “<...> other English modals (e.g. *must*) and even some semi-modals (e.g. *have got to*) may be following a similar route”.

The further qualitative and quantitative findings corroborated the primary hypothesis that *must* usually features in epistemic contexts: epistemic *must* is twice more frequent than deontic *must*. *Have to* and *have got to* remain the primary exponents of deontic modality; their epistemic uses are rare. The results are consistent with reports in the literature (Coates 1983; Heine 1995; Hoyer 1997; Mortelmans 2000; Huddleston & Pullum 2002 among others). This could also show that in deontic contexts *must* “is thought to be declining rapidly, and considered to be old and somewhat archaic <...> *Must* clearly exhibits the trajectory of an obsolescing feature” (Tagliamonte 2004, 41–42) and *have to* is taking over. As for dynamic modality, *must* and *have to* can, however rarely, express willingness, necessity for the first argument participant and need determined by the local circumstances of the participant.

The analysis of the translational paradigm indicates that *must* is most often rendered into Lithuanian by non-congruent TCs, i.e. modal adverbials (37%), whereas the adverbial

TCs for *have to* and *have got to* make up only 1%. The reason behind this may be the fact that modal adverbials can only express epistemic meanings, which are most common in the use of *must*. Besides, as a number of studies have shown (Usonienė & Šolienė 2010; Šolienė 2012, 2013), Lithuanian opts for an adverbial strategy for the realization of epistemic modality. The semi-modals in question are usually translated by the Lithuanian modal verbs *reikėti* ‘need’ and *turėti* ‘must/have to’ which mostly encode deontic modality. In addition, the study has also confirmed that both English and Lithuanian modal verbs are multifunctional.

This paper carries various implications for further research. It analyses only the central modal *must* and the semi-modals *have to* and *have got to*. Studying other English modals of obligation and necessity (e.g. *should*, *ought to*, *need*) in terms of the modal meanings they express and their Lithuanian correspondences would make the picture more complete. In addition, the database of the present study is rather restricted in terms of size and register variation. Further research should be carried out using larger corpora composed of different types of registers. Besides, a bidirectional study should be considered for further investigation. The paper is primarily based on the analysis of the TCs in the direction EN-orig → LT-trans; however, it would be interesting to explore the other direction of translation in future research.

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List of abbreviations

ADV	– adverbial
DAT	– dative
EN	– English
GEN	– genitive
IMP	– imperative
INF	– infinitive
LT	– Lithuanian
MOD AUX	– modal auxiliary
orig	– original
P	– phrase
PL	– plural

PRS	– present tense
SG	– singular
TC(s)	– translational correspondence(s)
transl	– translation
V	– verb

Data sources

ParaCorp_{EN→LT→EN} – Bidirectional Parallel Corpus of English and Lithuanian

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