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# REALIZATIONS OF EPISTEMIC MODALITY IN ENGLISH AND LITHUANIAN: PARAMETERS OF EQUIVALENCE

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VILNIAUS UNIVERSITETAS

Audronė Šolienė

# EPISTEMINIO MODALUMO EKVIVALENTIŠKUMO PARAMETRAI ANGLŲ IR LIETUVIŲ KALBOSE

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# REALIZATIONS OF EPISTEMIC MODALITY IN ENGLISH AND LITHUANIAN: PARAMETERS OF EQUIVALENCE

## INTRODUCTION

**The object of the research** is epistemic modality and its realizations in English and Lithuanian. The thesis focuses on the quantitative and qualitative parameters of equivalence between the lexical exponents of epistemic modality in English and Lithuanian. The axis of contrast is laid on the auxiliary and adverb strategies (see van der Auwera *et al.* 2005b): a probe will be made into the cross-linguistic distribution and behavior of the central English modal auxiliaries of possibility and necessity and epistemic stance adverbials as opposed to their counterparts in Lithuanian[1].

**The goals of the dissertation** are to analyse the verbal and adverbial markers of modality in English and Lithuanian in terms of their frequency and epistemic meaning enconding, to find out which linguistic markers of epistemic modality prevail in the two languages, to see what decisions and alternatives are preferred by translators when rendering epistemic meaning, and to determine whether there is any language-specific conceptualization of the strength of the speaker's commitment to the factuality of his/her proposition. To acieve these goals, the following **research tasks** were set:

1. To compile a bidirectional parallel corpus of English and Lithuanian fiction texts.

2. To perform the qantitative and qualitative analysis of epistemic markers in the two structually different languages.

3. To investigate what semantic and syntactic constraints determine epistemic meaning interpretation.

4. To interpret the cross-linguistic correspondence of the markers of epistemic modality in translation by singling out cases of congruent, non-congruent and zero correspondence.

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[1] As no consensus has been reached so far regarding the distinction between the word classes of modal particles and adverbs in Lithuanian linguistics, I will be referring to Lithuanian modal expressions like *ko gero* 'most likely', *turbūt* 'probably', etc. as epistemic stance adverbials (Biber *et al.* 1999: 854).

**The novelty and relevance of the research.** Epistemic modality, which has been widely researched in various languages during several past decades, has received little attention in Lithuanian linguistics. Contrastive studies exploring Lithuanian modal markers and their cross-linguistic counterparts are extremely rare. The present research based on the two languages does not only reveal quantitative cross-linguistic differences regarding the existent potential of expression *vs*. real language use but also shows a different degree of grammaticalization of the modal verbs in the two languages. This study sustains the assumption that the proportion of lexical correspondence can be very low when dealing with realizations of grammatical categories cross-linguistically and gives evidence to the observation made by van der Auwera *et al*. (2005b) that the phenomenon of the eastward (moving from Germanic languages to Slavonic) decreasing frequencies of modal auxiliary strategies in favor of adverb strategies would indeed make areal sense.

The results of the research could benefit Lithuanian grammar: the study presents a list of epistemic markers in the Lithuanian language, which is based not on the intuition of an individual scholar but on the careful analysis of authentic corpus-based data. The findings of the research as well as the compiled parallel corpus could be used for the preparation of various tasks and aids in translation studies and foreign language teaching. This analysis could also be of interest to lexicographers, as well as to translators, typologists and scholars who deal with various cross-linguistic issues.

**The following theses are to be defended**:

1. The results of the research clearly indicate cross-linguistic differences regarding the existent potential of expression *vs*. real language use. This is indicated by the frequencies of the linguistic items under study.

2. Despite the existence of the same adverbial and verb strategies for epistemic meaning realization in English and Lithuanian, their implementation is different. In Lithuanian the adverbial strategy for epistemic meaning realization is used more frequently that the modal verb strategy.

3. English favors modal auxiliaries for expressing epistemic modality. The frequent use of modal verb strategy for epistemic meaning realization in English may be indicative of the high degree of grammaticalization of English modal auxiliaries and the attrition of the subjunctive mood.

4. The results of the cross-linguistic research reveal that the markers of epistemic necessity are used less frequently than the markers of epistemic possibility In Lithuanian, which indicates that the semantic domain of possibility is dominant in language use.

5. The constraints determining epistemic meaning realization converge; the most important among them are subject specification and the stativity of complements.

6. The analysis of the translational paradigms reveals that the markers of epistemic necessity are used interchangeably with the markers of epistemic possibility in Lithuanian; this could suggest that the distinction between low and high degree of likelihood could be blurred in Lithuanian.

**Review of earlier research**

Modality is one of the widely discussed issues in linguistics and is especially rich in the proposed theoretical frameworks, interpretations, and definitions. Despite the evasive character of modality, one can distinguish several orientations in definitions of modality, namely (a) delineation of modality by describing its *types* (e.g., philosoher Rescher 1968 singles out eight types of modality; also cf. Downing & Locke 2002: 38); (b) definitions in terms of *speakers' attitudes* (cf. Jespersen 1924: 313; Downing & Locke 1992: 251; 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 study, modality is understood as the expresion of the author / speaker's (subjective) attitudes and opinions towards the state of affairs at a truth-functional level (cf. Usonienė 1994: 92).

Epistemic modality as a philosophical domain and as a linguistic category has been investigated by a number of scholars (von Wright 1951; Caton 1966, 1969; Lyons 1977; Palmer 1979, 1986; Coates 1983; Perkins 1983; Nuyts 1994; Papafragou 2000; Nuyts 2001; Palmer 2001; Facchinetti & Palmer 2004; Klinge & Müller 2005; Pietrandrea 2005; Frawley 2006; Cornillie 2007; Holvoet 2007; Simon-Vandenbergen & Aijmer 2007; Hansen & de Hann 2009; Portner 2009; Salkie *et al*. 2009 among others). This thesis will not offer a new conceptual interpretation or an innovative theoretical model of epistemic modality; it will rather base itself on a traditional model of modality and focus on how structually different languages carve up the modal pie.

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:

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

(Palmer 2003: 7)

He also singles out a fourth type of modality – evidential modality. Under the umbrella notion of *propositional modality* he puts both epistemic modality and evidentiality. He defines epistemic modality as propositional modality which is used by speakers to express their judgments and attitudes towards the factual status of the proposition. 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, while dynamic modality relates to ability and volition and is participant internal (Palmer 2001: 8-11). However, for the purposes of this study, it is enough to follow the basic distinction between *epistemic* modality and *non-epistemic* modality (cf. van der Auwera, Plungian 1998; Mortelmans *et al.* 2009), the latter of which subsumes deontic and dynamic modality. This thesis will not set deontic and dynamic modalities apart and, in case of contrast with epistemic modality, both of them will be referred to as non-epistemic. 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:

(4)  *I'm not… so good today... Tomorrow* **will be better**.

As far as evidentiality is concerned, the definition proposed in van der Auwera and Plungian (1998) offers a more or less uncontroversial characterization of this category: "Evidentiality concerns the indication of the source or kind of evidence speakers have for their statements" (van der Auwera & Plungian 1998: 57). The relation between the domains of evidentiality and epistemic modality is not always clear. Epistemic-evidential

syncretism has been widely discussed (van der Auwera & Plungian 1998; Mortelmans 2000; Plungian 2001; Cornillie 2007, 2009; Squartini 2008 among others). Plungian (2001: 354) contends that the evidential value is always inherently present in the epistemic meaning: "while an evidential supplement can always be seen in an epistemic marker, the opposite does not always hold: not all evidential markers are modal in that they do not all necessarily imply an epistemic judgment".

In this study I align myself with the views expressed in van der Auwera and Plungian (1998), who see the relation between evidentiality and epistemic modality as the one of overlap and include one particular type of evidentiality – inferential evidentiality – within the domain of epistemic modality. The epistemic necessity and inferential evidentiality expressed by the English modal auxiliary *must* is the best known example of this overlapping domain. I also align myself with the position expressed in Cornillie (2007) that the realm where epistemic necessity and inferential evidentiality meet should be extended. His study of Spanish (semi-)auxiliaries gives evidence that "the overlap category between modality and evidentiality should not be exclusively situated in the domain of necessity but can also include prediction" (Cornillie 2007: 116).

One more division is crucial for this study, i.e. *epistemic possibility* and *epistemic necessity*. As could be seen from the examples quoted above in (1), the speaker makes a difference between epistemic possibility and epistemic necessity, which correspond to the high or low degree of likelihood / probability or the speaker's certainty. Hence it is possible to argue that the strength of the speaker's commitment to his / her assertion and the degree of certainty are gradable and allow for "measurement". Some linguists have proposed scales of likelihood, in which the speaker's evaluation of the state of affairs or inferences can be seen to range from the tentative to the relatively certain (Hoye 1997; Lyons 1977; Palmer 1986, 2001; Perkins 1983; Usonienė 2006a, 2007). In the same vein, Nuyts (2001: 22-27) argues that polarity involving the scalarizations of the speaker's evaluation (certainty, probability, possibility, improbability and impossibility) is an integral feature of the epistemic system. Similarly, Brandt (1999: 33-34) provides a tripartite scale of modality in Danish and discusses "modal intensity" in terms of possibility, predictability and necessity. Though there seems to be a consensus about the extreme poles of the epistemic scale, it might be difficult to grade

the "medium epistemic certainty" (see Nuyts 2001: 27), and in practice the epistemic scale becomes a continuous one (van der Auwera *et al*. 2005a: 251).

It is an undeniable fact that the most common verbal exponents of English modality are modal auxiliaries. Alexander (1999: 208) arranges them on a gradable scale moving "from the greatest uncertainty (*might*) to the greatest certainty (*must*)". Non-verbal modal expressions are of no less importance. According to the speaker's commitment to the truth of the proposition, Huddleston and Pullum (2002: 175-177) distinguish three levels of strength for modal auxiliaries and four levels of strength for modal adverbs (2002: 768): a) strong (*obviously, necessarily*, etc.); b) quasi-strong (*apparently, evidently, presumably, seemingly*, etc.); c) medium (*likely, probably*, etc.); d) weak (*maybe, perhaps, possibly*, etc.). By comparison, Hoye's (1997: 240) classification of the English adverbs carrying the overtones of the speaker's certainty includes only three subdivisions: a) certainty (*certainly, definitely, indeed, presumably, surely,* etc.); b) probability (*probably, quite likely, most likely,* etc.); c) possibility (*maybe, perhaps, possibly, conceivably*).

There are no modal auxiliaries in Lithuanian that could be comparable to the Germanic and Romance modal auxiliaries in terms of the 'NICE' properties that are essential to the classification of a form as an auxiliary (cf. Palmer 1987: 14-21). The majority of Lithuanian modal verbs are fully conjugated lexical verbs and do not have any conspicuous morphological and morphosyntactic characteristics that would set them apart from the other verbs. The key modal verbs are *galėti* 'can / may' and *turėti* 'must / have to'. Both verbs are polyfunctional, i.e. they can express both epistemic and non-epistemic (deontic and dynamic) modality. The verb *galėti* 'can / may' is the core marker of modal possibility, whereas *turėti* 'must / have to' encodes modal necessity.

In Lithuanian, there are only a few modal adverbs morphologically marked as adverbs, i.e. having the most productive adverb forming suffix – *(i)ai* (Ambrazas 1997: 378). They are *tikriausiai / greičiausiai / veikiausiai* 'most probably' and *būtinai* 'necessarily' and they are used to express high probability, i.e. epistemic necessity. There has not been any detailed research carried out on the paths of grammaticalization and lexicalization of the Lithuanian adverbial *gal* 'perhaps' and the two modal words *turbūt* 'probably' and *galbūt* 'maybe'; however, it is obvious that the marker of epistemic

possibility *gal* is related to the verb *galėti* ('can / may-INF')[2], while the words *turbūt* 'probably' and *galbūt* 'maybe' are the truncated forms of *turi* 'have-PRS.3' and *gali* 'can / may-PRS.3' in their modal meanings plus the existential verb *būti* 'to be'[3]. The source of origin of some of the epistemic necessity adverbials is rather transparent; for instance, *matyt* derives from the infinitive *matyti* 'see', *be abejo / be abejonės / neabejotinai* are related to the verb *abejoti* 'doubt', *ko gero(-a)* is the genitive form of *kas gera*, literally meaning 'the one which is good' (Wiemer 2007: 195).

The division of Lithuanian adverbials into markers of epistemic possibility and necessity is not an easy task. Usonienė (2007) suggests drawing a distinction between Lithuanian modal adverbials in terms of degree of speaker confidence and offers the following classification: (a) certainty adverbials: *tikrai* 'surely / certainly', *aiškiai* 'clearly' and *žinoma* 'of course / definitely'; (b) high probability or quasi-strong confidence adverbials like *tikriausiai* 'most probably', *greičiausiai* 'most likely', *veikiausiai* 'most probably / likely'; (c) weak or low epistemic possibility adverbials like *gal(būt)* 'maybe', *galimas daiktas* 'conceivably', *rasi* 'perhaps', *bene* 'possibly', etc.

It should be noted that the dictionaries of the Lithuanian language give circular explanations of the meanings of Lithuanian adverbials, i.e. both the markers of possibility and the markers of necessity are explained in terms of each other and, therefore, seem to be synonymous: *turbūt* 'probably' is made equivalent to *galbūt* 'maybe' and *tikriausiai* 'most probably'. The authors of the *Lithuanian Grammar* present different glosses for the Lithuanian particle *gal*, which intuitively should be ascribed to the exponents of weak epistemic possibility in Lithuanian. For example, *gal* is glossed as 'probably' (Ambrazas *et. al*. 2006: 400) and as 'perhaps' (*ibid*.: 256). This study is based on a bipartite division of Lithuanain adverbials into adverbials of epistemic possibility and adverbials of epistemic necessity. The divison is based on the individual intuition, different data provided by available grammars and dictionaries and, most importantly, on the results yielded by different corpus-based studies of realizations of epistemic meaning and the conceptualization of likelihood in Lithuanian ( see Usonienė 2006a, 2006b, 2007; Šolienė

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[2] Different authors seem to differ in their views regarding the origin of *gal* 'perhaps / maybe'. For instance, the authors of the *Lithuanian Grammar* maintain that *gal* 'maybe' derives from *gali* '(you) can-PRS.2SG' (Ambrazas 1997: 397), while Wiemer (2007) claims that "*gal* is the truncated form of *galėti* 'can' (probably derived from the PRS.3-form *gali* <...>)" Wiemer (2007: 195).

[3] Brinton & Traugott (2005) speak about fusion, coalescence, and lexicalization of Polish *može* and Lithuanian *gal* via the constructions *možet byt* 'it may be' and *galbūt* 'it may be', respectively (Brinton & Traugott 2005: 81).

2008, 2010), so this research deals with two classes of adverbials: epistemic possibility adverbials (*gal*, *galgi*, *galbūt*, *galimas daiktas / dalykas*, *rasi*, *bene*, *vargu*, *bemaž*, *kažin*, *lyg (ir)*, *tartum*, *tarytum*, *tarsi*, *panašu*, *rodos*, *regis*, *atrodo*) and epistemic necessity adverbials (*turbūt*, *tikriausiai*, *veikiausiai*, *greičiausiai*, *būtinai*, *neišvengiamai*, *matyt*, *ko gero(-a)*). The list is by no means exhaustive. A variety of other modal realizations of possibility and necessity such as the expressions with adjectives, participles, nouns, the verbs of propositional attitude and the verbs of probability taking clausal complements will not be dealt with in the present thesis.

Similar contrastive analyses based on parallel and comparable corpus data (Aijmer 1997, 1999; Dyvik 1998, 2004; Johansson 2001, 2007; Simon-Vandenbergen & Aijmer 2007; Mortelmans 2009 among others) show that in a cross-linguistic perspective the degree of lexical correspondence in expressions of epistemic modality is not very high and different subsystems tend to interact. For instance, Aijmer's (1999) study on the comparison of epistemic possibility in English and Swedish has shown that when there is a gap in the Swedish system of modal auxiliaries, it can be filled by a modal adverb. The research made by van der Auwera *et al*. (2005b) also demonstrates that, despite the similarity of the available linguistic inventory for epistemic meaning realization in terms of the auxiliary and adverb strategies, speakers of the English and Slavonic languages do not use these strategies with equal frequency. The researchers link it up to the relatively high degree of grammaticalization of the English modal auxiliaries and their polyfunctionality. Moreover, the results of the investigation of the Slavonic translational equivalents could be looked at from an areal perspective: the authors describe an east-west cline of languages with more modal adverbs in the Eastern areal of the Slavonic languages and more modal verbs in the West.

These are the major theoretical preliminaries of the research. The findings dealing with the cross-linguistic realizations of epistemic possibility and necessity in terms of the choice of modal verb or adverb strategies are discussed in Chaper 4 and 5. Each chapter presents an exhaustive descritption of data selection criteria and the major quantitative and qualitative analysis of the linguistic items under study.

# DATA AND METHODS

The corpus-based approach adopted in this study helps to reveal patterns and menaings of modal expressions which would be difficult to find otherwise. The method used in the research is non-experimental data collection; it is a contrastive analysis based on the data obtained from a self-compiled bidirectional parallel corpus – $ParaCorp_{EN \to LT \to EN}$. The corpus design follows the model of the English-Norwegian Parallel Corpus (Johansson 2007). The $ParaCorp_{EN \to LT \to EN}$ was compiled from original English fiction texts and their translations into Lithuanian and original Lithuanian fiction texts and their translations into English. The size of the corpus is 1, 572, 498 words (see Table 1).

**Table 1.** Size of the two sub–corpora $ParaCorp_{EN \to LT}$ and $ParaCorp_{LT \to EN}$

|  | Original | Translation |
|---|---|---|
| $ParaCorp_{EN \to LT}$ | 486, 871 | 386, 640 |
| $ParaCorp_{LT \to EN}$ | 296, 759 | 402, 228 |

The advantage of such a corpus model is that it allows multidirectional comparisons and can be used both as a parallel corpus and a comparable corpus (Johansson 2007: 11). It must be admitted, however, that there is an imbalance between the two sub-corpora. My aim was to compile a balanced bi-directional corpus; however, the matching of original texts in terms of size was difficult as the number and range of texts that have been translated from English into Lithuanian is far greater than those of translations from Lithuanian into English. A similar situation has been observed in other languages as well (cf. Čermák & Klégr 2004: 84; Johansson 2007: 13). Mainly due to this reason, the included literary texts vary in their length and number: the $ParaCorp_{EN \to LT}$ includes full texts (6 novels and 2 short stories), whereas the $ParaCorp_{LT \to EN}$ is comprized of both full texts and extracts (3 full text novels, 39 short stories and 14 extracts). Moreover, the English texts have been translated by 8 translators (5 women and 3 men); the Lithuanian texts have been translated by 19 translators (13 women and 6 men). Most of the texts included in the corpus were written, translated, and published in the period of 1980–2006. However, there are some texts that were published

before 1980: the *ParaCorp$_{LT→EN}$* includes the novel *Hestera* (*Esther*) by V. Kavaliūnas and some short stories, and the *ParaCorp$_{EN→LT}$* includes G. Orwell's novel *1984*.

The texts are not lemmatized; the alignment used is based on the aligning tool LYGIA (developed at the Centre of Computational Linguistics of Vytautas Magnus University, Kaunas). The alignment was performed first at the paragraph level, then at the sentence level. Then, in order to generate concordance lines, I used the multilingual browser ParaConc (Barlow 1995). Though the search was automatic, the analysis of concordances was carried out manually, since the *ParaCorp$_{EN→LT→EN}$* is not annotated.

Since the sub-corpora are of different size, the raw frequency numbers have been normalized per 1000 words. Furthermore, in order to check whether the similarities and differences are statistically significant, I have also performed the log-likelihood (LL) test, which is commonly considered to be a more statistically reliable test than the chi-square test (cf. Dunning 1993*).* Frequencies of particular patterns and uses are of crucial importance to this study, since frequency can be an important factor in specification of meaning (Leech 2003; Simon-Vandenbergen & Aijmer 2007). Some of the tendencies identified in the *ParaCorp$_{EN→LT→EN}$* were verified in other databases: *the British National Corpus* (www.corpus.byu.edu/bnc/) and *The Corpus of Spoken Lithuanian* (*Sakytinės lietuvių kalbos tekstynas*) ( http://donelaitis.vdu.lt/~andrius/SKT5/index.php).

## RESEARCH FINDINGS

**Epistemic posibility in English and Lithuanian.** The quantitative results sustain the assumption that English and Lithuanian differ in the use of auxiliary and adverb strategies for modal meaning realization. The quantitative opposition was based on the overall number of occurrences of four basic English modal auxiliaries of possibility (*can, could, may, might*) against the number of occurrences of key possibility adverbs (*perhaps, maybe, possibly, conceivably*) in the texts written in the original. The contrast of normalized frequencies showing a predominant use of modal auxiliaries in English is given in Table 2.

**Table 2.** Normalized frequency of possibility-auxiliaries (EN-AUX) *vs*. possibility-adverbs (EN-ADV) in EN-orig

| AUX | n | f/1000 | ADV | n | f/1000 |
|---|---|---|---|---|---|
| *can* | 1020 | 2.1 | *perhaps* | 204 | 0.42 |
| *could* | 1463 | 3.0 | *maybe* | 180 | 0.37 |
| *may* | 112 | 0.2 | *possibly* | 76 | 0.16 |
| *might* | 399 | 0.8 | *conceivably* | 3 | 0.01 |
| **Total** | 2994 | 6.1 | **Total** | 463 | 0.95 |

In Lithuanian, the normalized frequency of overall occurrences of all the conjugated forms of the modal possibility verb *galėti* 'can / may' is 4.56 and if we add the frequency of the other two non-epistemic possibility verbs *(su)gebėti* 'manage/be able to', and *mokėti* 'know how', the final value will be 5.23. It is also higher than the normalized frequency of modal possibility adverbials (3.04). Table 3 shows that the most frequent adverbial is *gal* 'perhaps' which takes half of all the adverbial frequency.

**Table 3**. Normalized frequency of possibility-adverbs (LT-ADV) *vs*. possibility-verb (LT-V) *galėti* 'can / may' in LT-orig

| LT-ADV | n | f/1000 | LT-V | n | f/1000 |
|---|---|---|---|---|---|
| *gal(gi)* | 524 | 1.77 | *gal-iu/ ime* | 252 | 0.85 |
| *galbūt* | 49 | 0.17 | *gal-i/ ite* | 137 | 0.47 |
| *bene* | 34 | 0.11 | *gal-i* | 290 | 0.98 |
| *galimas daiktas / dalykas* | 13 | 0.04 | *gal-ėjau/ ėjome/ ėdavau/ ėdavome* | 115 | 0.39 |
| *kažin* | 12 | 0.04 | *gal-ėjai/ ėjote/ ėdavai/ ėdavote* | 23 | 0.08 |
| *vargu* | 9 | 0.03 | *gal-ėjo/ ėdavo* | 320 | 1.08 |
| *rasi* | 6 | 0.02 | *gal-ėsiu/ ėsime/ ėčiau/ ėtumėme* | 76 | 0.26 |
| *bemaž* | 5 | 0.02 | *gal-ėsi/ ėsite/ ėtum/ ėtumėte* | 38 | 0.13 |
| *lyg(ir/tai), tarsi / tartum / tarytum* | 91 | 0.31 | *gal-ės/ ėtų* | 98 | 0.33 |
| *rodos / berods / regis / atrodo* | 160 | 0.54 | *(su)gebėti* and *mokėti* | 204 | 0.69 |
| **Total** | 903 | **3.04** | **Total** | 1553 | **5.23** |

The ratio of the normalized frequency values between the English auxiliaries and adverbs is significantly high, i.e. 6 : 1 (AUX – 6.1 : ADV – 0.95). In Lithuanian, it is 1.7 : 1 (V – 5.23 : ADV – 3.04), which means that the frequency ratio between the use of epistemic adverbials in English *vs*. Lithuanian is approximately 3 : 1 (see Table 4).

**Table 4.** Normalized frequency and LL of modal possibility realizations in the EN-orig and LT-orig sub-corpora

|         | AUX    | ADV     |
|---------|--------|---------|
| EN-orig | 6.1    | 0.95    |
| LT-orig | 5.23   | 3.04    |
| LL      | +27.05 | –444.98 |

The log likelihood score (+27.05) indicates a statistically significant difference in the frequency of epistemic modal auxiliaries in original English as compared to modal verbs in original Lithuanian. However, the most marked difference is in the choice of adverbial strategies in the two languages. The log likelihood score (–444.98) of the frequencies observed in the two sub-corpora signals that Lithuanian clearly favors epistemic stance adverbials when compared with English.

The second task in the study was to calculate the frequency of the epistemic and non-epistemic readings in the use of the primary possibility modal verbs in the two languages and to check their frequency against that of epistemic stance adverbials. The results obtained are in line with the claims made by Coates (1995), Heine (1995), Biber *et al*. (1999), Facchinetti (2002), Wärnsby (2004). The most frequent epistemic possibility auxiliaries in English are *might* (97 %) and *may* (71 %). The epistemic use of *can* (only 2 %) and *could* (15 %) is rare in my data. The epistemic *can* is basically found in interrogative constructions, in existential sentences with introductory subject *there*, and with *be*-P complements. The percentage of epistemic *vs*. non-epistemic use is shown in Figure 1.
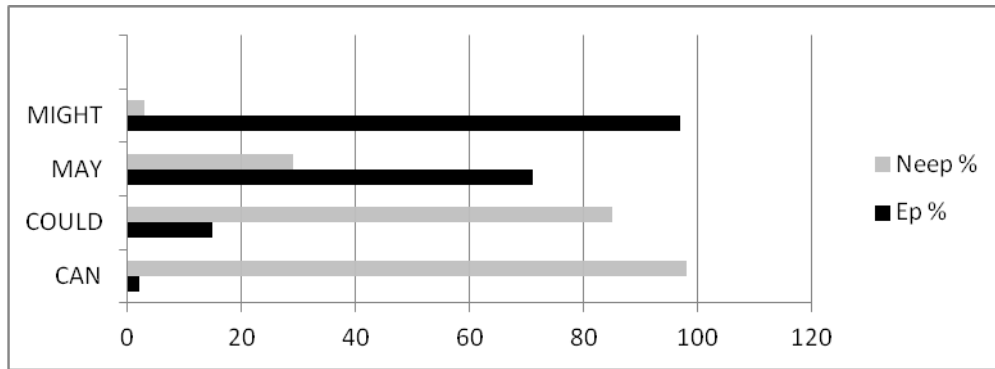
**Figure 1.** Epistemic *vs.* non-epistemic readings of possibility auxiliaries in EN-orig

The two most frequent epistemic auxiliaries *may* and *might* usually take 3rd-person subjects (53 %), existential *there* or impersonal *it / this* (26 %) and 21% of this use is with 1st and 2nd-person subjects taken together.

In Lithuanian the key verb of epistemic possibility is *galėti* 'can / may'. One of the tasks was to investigate how the so-called personal forms of *galėti* 'can / may' correlate with epistemic meaning. Only affirmative personal forms of *galėti* 'can / may' have been included in the further analysis. The data yielded no occurrences where 1st / 2nd-person verb forms have an epistemic reading. The 3rd-person forms also proved not to be productive means to convey epistemic tones: only 24 % of them were interpreted as expressing epistemic meaning (111 out of the overall 465 occurences). One of the constraints influencing epistemic interpretation turned out to be the specificity of complements (see Table 6).

**Table 6**. Distributions of epistemic *vs.* non-epistemic readings of affirmative 3rd-person forms of *galėti* 'can / may' in LT-orig

| Patterns with 3rd person forms | Epistemic | | | Non-epistemic | | |
|---|---|---|---|---|---|---|
| | n | f/1000 | % | n | f/1000 | % |
| *gal*\*+ INF | 77 | 0.26 | 18 | 344 | 1.16 | 82 |
| *gal*\* + *būti* - P | 34 | 0.11 | 77 | 10 | 0.03 | 23 |
| **Total** | 111 | 0.37 | 24 | 354 | 1.19 | 76 |

Lithuanian statives of the type *būti-P* (*be*-P), where P stands for NP, AP or PP, give a higher degree of epistemic readings and the ratio between epistemic and non-epistemic frequency is 0.11 : 0.03. However, in total, epistemic use with the possibility verb *galėti* 'can / may' is rather low, namely 0.37. The normalized frequency of epistemic stance

adverbials in Lithuanian is 2.09 (the initial data set has been filtered taking into account the data selection criteria). If we look only at the frequency of the Lithuanian epistemic possibility adverbials *gal / galgi / galbūt* 'perhaps / maybe' as opposed to epistemic use of the verb *galėti* 'can / may', it is nearly four times higher than that of the given verb forms, whereas an oposite situation is observed in English:

LT-orig → *gal / galgi / galbūt* – 1.54 (n = 458) *vs*. V – 0.37 (n = 111)

EN-orig → *perhaps / maybe / possibly / conceivably* – 0.95 (n = 463) *vs*. AUX – 1.28 (n = 624)

The analysis of the translational paradigms provided more evidence to support the hypothesis about an overwhelming priority given by the speakers of Lithuanian to the adverbial use to express their epistemic stance regarding the possibility of the situation. The two most widely used English epistemic possibility auxiliaries *may / might* have been found to correspond to adverbials in translation into Lithuanian more often than the Lithuanian modal verb *galėti* 'can / may'. The most frequent correspondence of the English *may / might* has been found to be the Lithuanian adverbial *gal(būt)* 'perhaps / maybe', which makes up 27 % of all the translational correspondences of *may / might*. The other Lithuanian epistemic possibility adverbials under analysis constitute only 5 % of the correspondences used. On the contrary, the translational correspondences of *could* contain Lithuanian adverbials rather rarely (only 9 %). The translators' preference has been given to the Lithuanian verb *galėti* 'can / may', which makes up 69 %. Mention should be made of the fact that a considerably high percentage of zero-correspondences has been observed. Other translational correspondences include other means of compensation (adjectives, various forms of the subjunctive mood) in Lithuanian. The frequency of the translational correspondences illustrating the choice of the adverbial and verb forms strategies in translation from English into Lithuanian is given in Table 8.

**Table 8.** Frequency of translational correspondences of *may/might/could* in LT-trans: choice of strategies

| EN-orig | LT-trans (ADV) | LT-trans (V + INF / *būti*-P) | other | Ø |
|---|---|---|---|---|
| Ep-*may / might* | 32 % | 34 % | 13 | 21 |
| Ep-*could* | 9 % | 69 % | 8 | 14 |

The concordance of Lithuanian *galėti* in its epsitemic meaning shows that its most frequent correspondences are English modal auxiliaries (94 %; *can / could* make up 56 % of this), whereas adverbials amount only to 2 % and 4 % of the cases are left untranslated.

A bi-directional search of correspondences in a parallel corpus gives plenty of evidence in the form of zero correspondence. A distinction can be made between zero correspondence in a TL and zero correspondence in an SL, i.e. omission and insertion. The insertion of modal adverbials in Lithuanian seems to correspond to cases of zero correspondence of English modal auxiliaries in Lithuanian. For example, in the *ParaCorp$_{E \to LT}$* the zero correspondences of epistemic *might* make up 20 % and those of *may* − 21 %. On the other hand, cases of 'inserted' *gal* 'maybe/perhaps' in translated Lithuanian constitute 20 %. These quantitative results would suggest that it is appropriate for a translation to follow target language conventions. The insertion of modal expressions in the target language can be interpreted as a sign of normalization, i.e. bringing the translation closer to the norms of the target language (Schmied, Schäffler 1996: 50; Teich 2003: 145).

**Epistemic necessity in English and Lithuanian.** The quantitative analysis aimed to count the overall occurrences of six English modal auxiliaries (*will, would, shall, should, ought to, must*) against the number of occurrences of key necessity adverbs (*probably, certainly, indeed, surely, definitely, presumably, no doubt/ undoubtedly, for sure, for certain, decidedly, undeniably*). The contrast of normalized frequencies showing a prevailing use of modal auxiliaries in English is given in Table 9.

**Table 9.** Normalized frequency of necessity-auxiliaries (EN-AUX) *vs*. necessity-adverbs (EN-ADV) in EN-orig

| AUX | | | ADV | | |
|---|---|---|---|---|---|
| | **n** | **f/1000** | | **n** | **f/1000** |
| *will('ll)* | 1209 | 2.48 | *probably* | 127 | **0.26** |
| *would('d)* | 1764 | **3.62** | *certainly* | 76 | 0.16 |
| *shall* | 32 | 0.07 | *indeed* | 75 | 0.15 |
| *should* | 398 | 0.82 | *surely* | 48 | 0.10 |
| *ought to* | 33 | 0.07 | *definitely* | 22 | 0.05 |
| *must* | 265 | 0.54 | *presumably* | 20 | 0.04 |
| | | | *no doubt/undoubtedly* | 20 | 0.04 |
| | | | *for sure* | 5 | 0.01 |
| | | | *for certain* | 3 | 0.01 |
| | | | *decidedly* | 1 | 0.00 |
| **Total** | **3701** | **7.61** | **Total** | **397** | **0.82** |

The normalized frequencies show that the most frequent English modal auxiliary is *would* (3.62) and *will* (2.48) goes second; the most frequent English adverb is *probably* (0.26).

The data show that the main function of *turėti* 'have to' is to express posessivity. The possessive *turėti* 'have to' amounted to 617 occurrences (f = 2.08 or 61 % of the overall use). The normalized frequency of all conjugated forms of the modal necessity verb *turėti* 'have to' is 1.33 (n = 394 or 39 % of the overall use). If we juxtapose the 3rd-person forms of the modal verb *turėti* 'have to' and its 1st and 2nd-person forms taken together, we can see that the 3rd-person forms tend to dominate (n = 258, f = 0.87 or 65 % of the concordance. If we add the frequency of the other four non-epistemic necessity verbs *reikėti* 'need', *tekti* 'be gotten', *privalėti* 'be oblidged' and *derėti* 'fit/suit' (2.06) to the frequency of the modal necessity verb *turėti* 'have to' (1.33), the final value will be 3.39. Like in the English data, the normalized frequency of modal verbs is higher than the normalized frequency of modal necessity adverbials (0.93). As can be seen in Table 10, the most frequent adverbial is *turbūt* 'probably', which takes one third of all the adverbial frequency.

**Table 10.** Normalized frequency of necessity-adverbs (LT-ADV) *vs.* necessity-verbs (LT-V) in LT-orig

| LT-ADV | n | f/1000 | LT-V | n | f/1000 |
|---|---|---|---|---|---|
| *turbūt* | **98** | **0.32** | *tur-iu/ime* | 42 | 0.14 |
| *matyt* | 62 | 0.21 | *tur-i/ite* | 32 | 0.11 |
| *tikriausiai* | 43 | 0.14 | *tur-i* | 112 | 0.38 |
| *būtinai* | 40 | 0.13 | *tur-ėjau/ ėjome/ėdavau/ėdavome* | 34 | 0.11 |
| *ko gero/a* | 18 | 0.06 | *tur-ėjai/ ėjote/ėdavai/ėdavote* | 3 | 0.01 |
| *greičiausiai* | 6 | 0.02 | *tur-ėjo/ėdavo* | 110 | 0.37 |
| *neišvengiamai* | 7 | 0.02 | *tur-ėsiu/ ėsime/ėčiau/ėtumėme* | 14 | 0.05 |
| *be abejo/ be* | 4 | 0.01 | *tur-ėsi/ėsite/ėtum/ėtumėte* | 11 | 0.04 |
| *veikiausiai* | 1 | 0.00 | *tur-ės/ėtų* | 36 | 0.12 |
| | | | *reikėti, privalėti, tekti, derėti* | 613 | 2.07 |
| **Total** | **277** | **0.93** | **Total** | **1007** | **3.39** |

The results show that the ratio of the normalized frequency values between the English auxiliaries and adverbs of necessity in the EN-orig subcorpus is very high, namely, 8 : 1 (AUX – 7.61 : ADV – 0.82). In Lithuanian, it is 3 : 1 (V – 3.39 : ADV – 0.93), so the frequency ratio between the use of modal verbs of necessity in English *vs.* Lithuanian is approximately 3 : 1 (AUX – 7.61 : V – 3.39). The results are presented in Table 11. The log likelihood score +590,99 indicates a statistically significant difference in the frequency of modal auxiliaries in original English as compared to the modal verbs in original Lithuanian.

**Table 11**. Normalized frequency and LL of modal necessity realizations in the EN-orig and LT-orig sub-corpora

| | AUX | ADV |
|---|---|---|
| **EN-orig** | 7.61 | 0.82 |
| **LT-orig** | 3.39 | 0.93 |
| **LL** | +590.99 | –2.95 |

The second step in the analysis was to calculate the frequency of the epistemic and non-epistemic readings in the use of the basic necessity modal auxiliaries / verbs in the two languages and to check their frequency against that of epistemic stance adverbials. Figure 2 proves that the results regarding the markers of epistemic necessity in English

are very much in line with the claims made by Coates (1983), Heine (1995), Biber *et al.* (1999), Wärnsby (2004), Hoye (1997), de Haan (2008) among others. The two most frequent epistemic markers are *must* (59 %) and *would* (52 %).
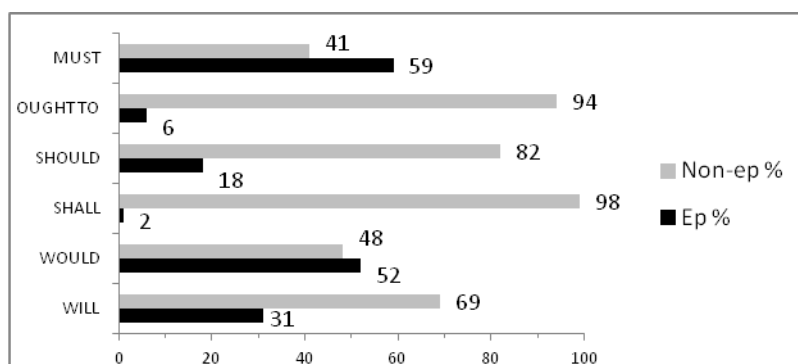


**Figure 2.** Epistemic *vs.* non-epistemic readings of necessity auxiliaries in EN-orig

Epistemic *must* and *would* usually take 3rd-person subjects (54 %), existential *there* or impersonal *it / this* (22 %) and the remaining 24 % co-occur with 1st and 2nd-person subjects taken together. The modal auxiliary *shall* is the least susceptible to epistemic interpretation. Only 2 % of all its occurrences the EN-orig data could be interpreted epistemically. The epistemic use of *shall* cannot be accounted for by its correlation with the subject; however, when *shall* is used with adverbials involving a relatively high degree of probability, it can receive an epistemic interpretation (cf. Coates 1983: 192; Hoye 1997: 120).

The four Lithuanian verbs *reikėti* 'need', *tekti* 'be gotten', *privalėti* 'be obliged' and *derėti* 'fit / suit', which have been included in the first quantitative analysis of the distribution of the markers of modal necessity in general, can never receive epistemic readings; therefore, they have not been analyzed further on in terms of the epistemic / non-epistemic dichotomy. It is only the key verb *turėti* 'have to / must' that can be used to express epistemic and non-epistemic necessity. One of the aims of the thesis was to find out how epistemic *turėti* 'have to / must' is and what forms are most commonly used with the given reading.

In my data, all the attested occurrences of 1st and 2nd-person forms of *turėti* 'have to' are unambiguously non-epistemic. However, it cannot be claimed that 1st and 2nd-person forms of *turėti* 'have to' are never epistemic: they can receive an epistemic

interpretation, especially when they are used in the subjunctive and the proposition refers to the future.

Further qualitative and quantitative analysis of the 3rd-person forms showed that the frequency counts of their epistemic readings are rather low. They are epistemic only in 24 % of all their use. Compliment specification appeared to be a more important factor determining epistemic and non-epistemic readings. So a further distinction was made between the 3rd-person *turėti* 'have to' forms taking main verb infinitives and *būti* -P (*be*-P) as complements. All the cases of use where the verb *turėti* 'have to' followed by *būti*-P (*be*-P) has a non-epistemic reading take an AP complement or a compound infinitive conveying a passive meaning. As can be seen in Table 10 below, in both types of patterns taken together the Lithuanian necessity verb *turėti* 'have to / must' predominantly functions as a non-epistemic modal verb (76 %). The pattern *tur\* + būti* - P yielded a greater percentage of epistemic readings (52 %), while the pattern *tur\*+* INF favors the non-epistemic environment.

**Table 10**. Distributions of epistemic *vs.* non-epistemic readings of 3rd-person forms of turėti 'have to' in LT-orig

| Patterns with 3rd-person forms | Epistemic | | Non-epistemic | |
|---|---|---|---|---|
| | f/1000 | % | f/1000 | % |
| *tur\*+* INF | 0.10 | **48** | 0.55 | **84** |
| *tur\* + būti* - P | 0.11 | **52** | 0.10 | **16** |
| **Total** | 0.21 | 24 | 0.64 | 76 |

Lithuanian statives of the type *būti*-P (*be*-P), where P stands for NP, AP or PP receive an epsitemic interpretation more frequently and the ratio between epistemic and non-epistemic frequency is 0.10 : 0.55. However, in total, epistemic use with the necessity verb *turėti* 'have to' is rather low, namely 0.21 (f/1000). If we compare the overall normalized frequency of adverbials with that of epistemic *turėti* 'have to', the ratio becomes significant, because it shows that adverbial usage is about four times higher than that of epistemic necessity use of the verb *turėti* 'have to' in Lithuanian, namely ADV – 0.93 : V – 0.21.

The following stage of the contrastive study was to analyze the translational paradigms. The analysis of the prototypical marker of epistemic necessity in English

*must* showed that its Lithuanian translational correspondences are mostly adverbials and not the modal verb *turėti* 'have to'. The most frequent correspondences of English *must* have been found to be the Lithuanian adverbials *tikriausiai* 'certainly', *matyt* 'seemingly/evidently' and *turbūt* 'probably'; they make up 42 % of all the translational correspondences of *must* in the LT-trans sub-corpus. The other Lithuanian epistemic necessity adverbials under analysis (e.g., *greičiausiai, veikiausiai, neabejotinai*) in the given study constitute only 9 % of the correspondences used. It is important to mention that a considerably high percentage of zero-correspondences (25 %) has been observed. Other translational correspondences include the modal verbs *turėti* 'have to' and *galėti* 'can / may'; they make up 22 % of all translational correspondences. The frequency of the translational correspondences illustrating the choice of the adverbial and verb forms strategies in the translation of *must* from English into Lithuanian is given in Figure 3.
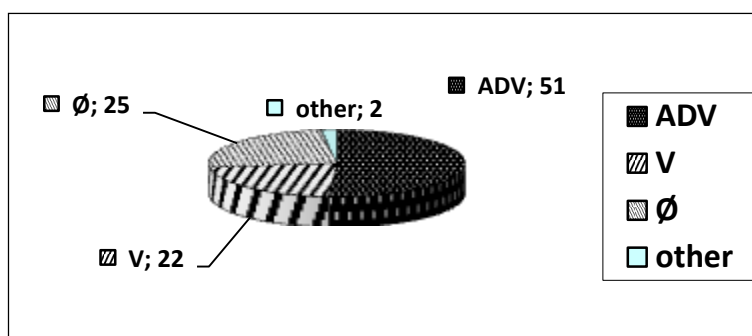


**Figure 3.** Percentage of translational correspondences of must in LT-trans: Choice of strategies

The diagram shows that in Lithuanian the adverbials prevail as correspondences of *must*.

Similar results in terms of the choice of strategies have been obtained when I investigated the back-translations of *must*. The Lithuanian adverbials as translational correspondences of *must* constituted 56 % of its concordance, the verb *turėti* 'have to' accounted for 9 % and zero translations made up 35 % of all instances. What is more, the results yielded a lot of cases of zero correspondences (cases of insertions and omission). For example, in the *ParaCorp_{EN→LT}* the zero correspondences of epistemic *must* make up 25 %. On the other hand, cases of inserted *tikriausiai* 'certainly', *turbūt* 'probably' and *matyt* 'evidently' in translated Lithuanian constitute 15 %.

Another observation is that very often in translations the markers of epistemic necessity are used interchangeably with the markers of epistemic possibility, not taking into account the retention of the same level of certainty and likelihood. To find the markers of epistemic possibility among the translational correspondences of *must*, which prototypically encodes a high degree of speaker's certainty, seems to be rather unexpected. In some sentences *must* corresponded to *gal* 'perhaps / maybe' and *galėti* 'can / may' in Lithuanian translation. Such examples are not numerous, but still make up 3 % of all translational correspondences, e.g.:

(5)   *A few **must not have reached** their homes yet.*

       ***Gal** dar ne visi grįžę.*

Similar cases have been attested in the concordances of *tikriausiai* 'certainly', *turbūt* 'probably' and *matyt* 'evidently' expressing a relatively high degree of intended certainty. The semantic map of *matyt* 'evidently' (see Table 11) shows a great diversity of its translational correspondences.

**Table 11**. Translational correspondences of *matyt* 'evidently'

| *matyt* | LT-orig➔EN-transl | | LT-transl➔ EN-orig | |
|---|---|---|---|---|
| | **raw** | **%** | **raw** | **%** |
| *seem / appear / look* | 20 | **32** | 11 | **12** |
| *must* | 7 | 12 | 22 | 24 |
| *apparently / obviously / evidently* | 14 | **23** | 29 | **32** |
| *most likely / probably / no doubt* | 3 | 5 | 2 | 2 |
| *quite possible / perhaps / maybe* | 1 | 2 | 5 | 6 |
| *guess / think / suppose* | 1 | 2 | 9 | 10 |
| Ø | 15 | 24 | 12 | 13 |
| **Total** | 61 | 100 | 90 | 100 |

A plausible explanation for such a spectrum of translational correspondences seems to be different types of evidence available for the speaker. As it is claimed in Boye and Harder (2009), different nuances of evidence can be associated with different degrees of reliability. Similar views are expressed in Plungian (2001: 354): "an epistemic marker contains more evidential properties when the source of the speaker's hypothesis is specified". If the assertion is based on the evidence inferred from observed results, the translational correspondences of *matyt* 'evidently' are the prototypical markers of

evidentiality, for instance, such adverbs as *obviously*, *evidently* and *apparently* or epistemic-evidential *must*. If the available evidence is inferred by logical reasoning, the translational correspondences of *matyt* 'evidently' encode a lower degree of certainty, e.g., *quite possibly*, *possibly*.

The semantic maps of translational correspondences seem to offer proof to support the given hypothesis that the distinction between low and high degree of probability might be blurred in Lithuanian (cf. Usonienė 2007) and that *tikriausiai* 'certainly', *turbūt* 'probably' and *matyt* 'evidently' may cover the whole spectrum of the epistemic scale and are polyfunctional. This idiosyncratic behavior of modal expressions might be accounted for in terms of pragmatics. For example, Schmied and Schäffler (1996) argue that English and German speakers make use of different pragmatic conventions in the realm of tentativeness and indirectness and sometimes it is quite legitimate, against the background of differences between SL and TL norms, to reduce tentativeness in translation (Schmied, Schäffler 1996: 51).

## CONCLUSIONS

1. The results of the quantitative analysis of the epistemic and non-epistemic realizations of possibility and necessity in English and Lithuanian reveal that the modal verb strategy tends to dominate over the adverbial one. This comes as no surprise since modal verbs can be polyfunctional and express different types of modality, whereas modal adverbials are epistemic only. However, the tendencies for the two langues to behave differently with regard to the modal verb and adverb strategy implementation has been revealed in the initial quantitative analysis already.

1.1. In English the normalized frequency of modal auxiliaries expressing modal possibility is 6.1 (per 1000 words) and adverbials – 0.95; in Lithuanian, respectively, the frequency of modal verbs is 5.23 and the frequency of adverbials is 3.04. However, the value of log likelihood test (+27.05) indicates a statistically significant difference in the frequency of epistemic modal auxiliaries in original English as compared to modal verbs in original Lithuanian. The most marked difference is in the choice of adverbial strategies in the two languages. The log likelihood score (–444.98) of the frequencies

observed in the two sub-corpora signals that Lithuanian clearly favors epistemic stance adverbials when compared with English.

1.2. The overall distribution of the markers of modal necessity is very much alike the distribution of possibility markers. The results show that the ratio of the normalized frequency values between the English auxiliaries and adverbs of necessity in the EN-orig subcorpus is very high, namely, 8 : 1 (AUX – 7.61 : ADV – 0.82). In Lithuanian, it is 3 : 1 (V – 3.39 : ADV – 0.93), so the frequency ratio between the use of modal verbs of necessity in English vs. Lithuanian is approximately 3 : 1 (AUX – 7.61 : V – 3.39). The log likelihood score (+590.99) indicates a statistically significant difference in the frequency of modal auxiliaries of necessity in original English as compared to the modal verbs in original Lithuanian.

2. Despite the existence of the same adverbial and verb strategies for epistemic meaning realization in the two languages under study, their implementation differs.

2.1. Lithuanian shows a significantly higher frequency of adverbials of epistemic possibility and necessity as contrasted with the use of the auxiliary and adverb strategies in English. The adverbial markers of epistemic possibility amount to 2.09, while the normalized frequency of *galėti* 'can / may' is only 0.37. The normalized frequency of adverbial markers of epistemic necessity is 0.93, whereas the frequency of *turėti* 'have to' amounts to 0.21.

2.2. English usually favors modal auxiliaries for expressing epistemic modality; adverbials are used less frequently. The higher frequency of modal auxiliaries seems to correlate with their polyfunctionality, higher degree of grammaticalization and the attrition of the subjunctive mood. In English epistemic possibility is encoded by modal auxiliaries; their normalized frequency is 1.28, whereas adverbials amount only to 0.95. Modal auxiliaries also prevail as markers of epistemic necessity (2.87), while the frequency of adverbials is 0.82.

2.3. The semantic domain of possibility is dominant in Lithuanian. This is especially obvious in the frequencies of the use of adverbials: the epistemic adverbials of possibility (f = 2.09) occur twice as often as the adverbials of necessity (f = 0.93). The the use of the possibility verb *galėti* 'can / may' is also more frequent that that of *turėti* 'have to / must' – their normalized frequencies are 0.37 and 0.21 respectively.

2.4. The analysis of the overall realizations of epistemic modality in terms of verb and adverbial strategies only confirms the results obtained from the separate analyses of epistemic possibility and necessity markers. The overall incidence of epistemic modal auxiliaries in English was 4.15 (n = 2019), whereas in Lithuanian the overall incidence of modal verbs was only 0.59 (n = 174). The LL test result (+1044.11) shows an extremely significant diference in the frequency of use of the modal verb strategy in the two languages in favor of English. The same is applicable to the use of the adverbial strategy. The adverbial markers of epistemic modality in English account for 1.77 (n = 860), while in Lithuanian the frequency of adverbials is 3.02 (n = 897). The LL test yielded a statistically significant value (–125.68), which shows a predominat use of adverbials in Lithuanian.

3. The findings also show that epistemic meaning can be determined by various constraints, the most important of which are complement stativity and subject specification.

3.1. Both in English and Lithuanian modal verbs acquired epistemic meaning in *be-P* constructions. The use of epistemic *may / might* in such constructions accounts for 57 % of their concordance, whereas the construction *gal\* + būti–P* makes up 77 %. The key markers of epistemic necessity behave in the same way: stative constructions with *must* and *would* make up 53 % and the epistemic use of *tur\* + būti–P* construction amounts to 52 %.

3.2. None of the 1st and 2nd-person forms of *galėti* 'can / may' and *turėti* 'have to / must' were used in epistemic contexts. Epistemic meaning tended to correlate with 3rd-person forms; however it is not yet dominant in their semantic structure: only 24 % of 3rd-person forms of *galėti* 'can / may' and *turėti* 'have to / must' are epistemic. In English, however, epistemic *must* ir *would* usually appear with 3rd-person subjects (54 %), existential *there* or impersonal *it/this* (22 %). The two most frequent epistemic auxiliaries *may* and *might* usually take 3rd-person subjects (53 %), existential *there* or impersonal *it/this* (26 %) and 21 % of this use is with 1st and 2nd-person subjects taken together.

4. The analysis of the translational paradigm has indicated language specific differences. The markers of epistemic possibility are used interchangeably with the markers of epistemic necessity in Lithuanian and vice versa; this could suggest that the

distinction between low and high degree of probability is not that distinct and its boundaries can be blurred in Lithuanian. The abundance of inserted modal adverbials and the phenomenon of zero correspondence seem to be a compensatory way to bridge the language-specific differences in modal meaning realization. This could also signal differences in culture-specific conceptualization of probability and varying use of pragmatic conventions.

4.1. The analysis of the translational correspondences confirmed the hypothesis that the Lithuanian language shows a significantly higher frequency of adverbials as contrasted with the use of the auxiliary and adverb strategies in English. Lithuanian *gal* and *galbūt* 'perhaps / maybe'are the translational correspondences of the English modal auxiliaries in 31 % of all the cases and epistemic *may* and *might* are translated by Lithuanian adverbials in 32 % of all their concordances. Epistemic *must* is very frequently rendered into Lithuanian by adverbials (51 %) and its back translation exhibits similar results – 56 % of all its correspondences in original Lithuanian texts were adverbials.

5. The empirical data for this study are derived from the parallel corpus comprised of fixtion texts, which, at first glance, seems to limit the scope of findings to a certain degree; however, the analysis of considerable amounts of authentic language material and the comparison of the obtained results with descriptions of markers of epistemic modality in different grammar books made it possible to present a revised list of Lithuanian adverbials.

The study carries diverse **implications for further research**. Since there seems to be hardly any exhaustive studies on the grammaticalization and pragmaticalization of the Lithuanian modal expressions and the database of the present study is rather restricted in terms of size and register variation, these remarks should be considered to be tentative. Further research should be carried out using larger corpora composed of different types of registers. Besides, the meaning of modal adverbials is very much context-dependent, so different pragmatic conventions should not be downplayed and emphasis should be shifted away from establishing correspondence between words and sentences to the consideration of larger stretches of text.

# EPISTEMINIO MODALUMO EKVIVALENTIŠKUMO PARAMETRAI ANGLŲ IR LIETUVIŲ KALBOSE

## Reziumė

Darbo objektas – episteminis modalumas ir jo raiškos priemonės anglų ir lietuvių kalbose. Dėl didelės kalbinių vienetų, potencialiai galinčių žymėti episteminį modalumą, įvairovės šiame darbe apsiribota tik tam tikromis raiškos priemonėmis: modaliniais veiksmažodžiais ir adverbialais (angl. *adverbials*). Tyrimo atspirties taškas yra kertinės episteminio modalumo sritys – galimumas ir būtinumas ir jų raiškos bei turinio tarpkalbinis aprašymas žvelgiant per dviejų potencialiai kalbos struktūroje egzistuojančių strategijų (modalinių veiksmažodžių ir modalinių adverbialų) prizmę.

Darbo tikslai ir uždaviniai

Pagrindinis šio darbo tikslas – remiantis lygiagrečiųjų ir palyginamųjų tekstynų metodika aptarti pagrindinius kokybinius ir kiekybinius episteminio modalumo raiškos ekvivalentiškumo parametrus anglų ir lietuvių kalbose. Ketinama nustatyti, kokie tarpkalbiniai episteminio modalumo raiškos atitikmenys yra dažniausi, aptarti vertimo atitikmenų tipus, atkreipti dėmesį į tarpkalbinę episteminio modalumo reikšmės ir raiškos įvairovę bei jos lemiamas problemas. Šių tikslų siekiama sprendžiant tokius tyrimo uždavinius:

1. Sudaryti grožinės literatūros dvikryptį palyginamąjį tekstyną lietuvių ir anglų kalbomis.

2. Aptarti kiekybinius ir kokybinius episteminio modalumo raiškos parametrus struktūriškai skirtingose anglų ir lietuvių kalbose.

3. Išsiaiškinti, kokie veiksniai lemia episteminės reikšmės interpretaciją.

4. Išanalizuoti vertimo atitikmenų ypatumus.

Darbo naujumas ir taikomoji vertė

Vakarų kalbotyroje gausu kontrastyvinių modalumo tyrimų: lygintos anglų ir švedų (Aijmer 1996, 1997, 1999, 2002), anglų ir norvegų (Johansson ir Hofland 1994; Løken 1997; Johansson 2007), anglų ir čekų (Čermák ir Klégr 2004), anglų ir suomių (Mauranen 2002), anglų ir slavų (van der Auwera *et al*. 2005b), anglų ir vokiečių (Salkie 2002a, 2002b, 2008), anglų ir prancūzų (Salkie 1996), anglų, vokiečių ir olandų (Mortelmans 2009, 2010) ir kitos kalbos. Įvairios modalumo raiškos galimybės

dabartinėje lietuvių kalboje – vienas mažiau tyrinėtų aspektų, o kontrastyvinės studijos apskritai retos. Tarpkalbinė episteminio modalumo raiškos priemonių analizė parodo skirtumą tarp raiškos priemonių potencialo ir realios jų vartosenos germanų ir baltų kalbose. Gauti rezultatai taip pat liudija skirtingą germanų ir baltų kalbų modalinių veiksmažodžių gramatikalizacijos lygį ir menką ekvivalentiškumo egzistavimą gramatinių kategorijų lygmeniu. Tyrimas reikšmingas ir lietuvių kalbai: patikslintas lietuvių kalbos episteminio modalumo žymiklių sąrašas remiantis ne paskiro tyrėjo intuicija, o autentiškais pavyzdžiais.

Kitas naujas tyrimo aspektas susijęs su tyrimo metodika. Šiame darbe remiamasi tekstynų analize − gauti duomenys leidžia nustatyti episteminio modalumo raiškos priemonių dažnį, atskleisti jų vartojimo tendencijas abiejose kalbose.

Aprašomas tyrimas gali turėti nemažą taikomąją naudą. Tyrimo duomenų pagrindu gali būti rengiamos įvairios svetimų kalbų mokymo priemonės ir praktinės užduotys. Aprašomas tyrimas gali būti naudingas leksikografijos mokslui: tyrimo duomenys ir sudarytas tekstynas gali praversti rengiant vienakalbius ir dvikalbius žodynus. Kita tyrimo rezultatų ir sudaryto tekstyno taikymo galimybė sietina su vertimo studijomis ir praktika, teoriniais kontrastyvinės kalbotyros, tipologijos kursais ir seminarais bei tolesniais kontrastyviniais episteminio modalumo tyrimais.

Ginamieji teiginiai

1. Tyrimo rezultatai aiškiai rodo skirtį tarp kalbinio potencialo ir vartosenos. Nors anglų ir lietuvių kalbų raiškos ir turinio potencialas turi vienodas galimybes, vartosena skiriasi. Tai rodo raiškos vienetų dažnio rodikliai.

2. Anglų ir lietuvių kalbose modalinių veiksmažodžių ir adverbialų strategijos episteminiam modalumui reikšti vartojamos nevienodu dažniu: lietuvių kalboje episteminis modalumas kur kas dažniau reiškiamas pasitelkiant adverbialų strategiją.

3. Aukštas anglų kalbos modalinių veiksmažodžių gramatikalizacijos lygis ir tariamosios nuosakos nunykimas gali lemti episteminio modalumo raiškos strategijų pasirinkimą: anglų kalboje vyrauja veiksmažodinė (pagalbinių veiksmažodžių) raiškos strategija.

4. Lietuvių kalboje tyrinėti episteminio būtinumo žymikliai vartojami rečiau nei episteminio galimumo žymikliai: tai patvirtina, kad galimumo konceptualioji dimensija yra dominuojanti kalbos vartosenoje.

5. Episteminės reikšmės realizaciją lemia keletas veiksnių, tačiau ypač glaudžiai ji susijusi su modalinių veiksmažodžių komplementų ir subjekto semantikos specifikacija.

6. Sprendžiant iš tyrinėtų vienetų vertimo atitikmenų distribucijos, lietuvių kalboje tikimybės laipsniai skiriami ne taip griežtai, jos ribos ne tokios ryškios.

Tyrimo metodai ir medžiaga

Šiame darbe taikoma keletas tyrimo metodų. Kontrastyvinė analizė leidžia atskleisti kalbos reiškinio skirtingose kalbose savitumą ir išryškinti universalius jo bruožus. Kitas darbe taikytas tekstynais paremtas metodas padeda atskleisti kitais metodais sunkiai aptinkamas ar tik numanomas tarpkalbines modalumo raiškos tendencijas. Šiam tyrimui buvo sudarytas dvikalbis dvikryptis lygiagretusis $ParaCorp_{A \to LT \to A}$ tekstynas (1 572 498 žodžiai) iš grožinės literatūros tekstų anglų ir lietuvių kalbomis.

Tekstyno duomenys tirti taikant kiekybinius ir kokybinius tyrimo metodus Tekstyno kiekybinei analizei naudotas programinis *ParaConc* (Barlow 1995) įrankis, tačiau tolesnė kokybinė duomenų analizė skiriant epistemines ir neepistemines reikšmes vykdyta rankomis. Gauti duomenys apdoroti statistiškai: buvo skaičiuojamas tirtų vienetų normalizuotas dažnis ir taikomas logaritminės tikimybės testas.

Disertacijos struktūra

Disertaciją sudaro įvadas, literatūros apie episteminį modalumą apžvalga, tyrimo kalbinės medžiagos ir metodų pristatymo skyrius, du analizės skyriai, kuriuose aptariami episteminio galimumo ir būtinumo žymiklių vartosenos tapkalbinės tendencijos, išvados, naudotos literatūros sąrašas ir priedas, kuriame surašyti į tekstyną įtrauktų grožinės literatūros kūrinių pavadinimai, autorių ir vertėjų pavardės, leidimo metai, žodžių skaičius.

Tyrimo rezultatai ir išvados

Šiame darbe tyrinėtas episteminis modalumas ir jo raiškos priemonės anglų ir lietuvių kalbose. Tyrimas atskleidė šiuos pagrindinius episteminio modalumo žymiklių vartosenos ypatumus analizuotoje kalbinėje medžiagoje:

1. Anglų ir lietuvių kalbose apskritai modalumo (episteminio ir neepisteminio) raiškoje veiksmažodinė strategija yra dažnesnė nei adverbialinė. Tokią tendenciją neabejotinai nulemia faktas, kad, kaip ir daugumoje kalbų, anglų ir lietuvių kalbose adverbialai paprastai vartojami tik episteminiam modalumui reikšti, o veiksmažodžiai modalumo atžvilgiu yra daugiafunkciški ir gali funkcionuoti kaip episteminio ir neepisteminio modalumo žymikliai. Tačiau jau net bendrieji kiekybiniai duomenys rodo modalinių veiksmažodžių ir adverbialų strategijos vartosenos skirtumus.

1.1. Anglų kalboje modalinį galimumą koduojančių veiksmažodžių normalizuotas dažnis yra 6,1, o adverbialų vartosenos dažnis – tik 0,95; atitinkamai lietuvių kalboje modalinių veiksmažodžių dažnis yra 5,23, o tirtų adverbialų normalizuotas dažnis mažesnis – 3,04. Gauti rezultatai rodo statistiškai reikšmingą ir dominuojančią modalinių veiksmažodžių vartoseną anglų kalboje, palyginti su lietuvių kalba (LL: +27,05, kai p < 0,05, o kritinė vertė lygi 3,84), o LL testo rezultatas (–444,98) rodo ypač didelę dominuojančią adverbialų vartoseną lietuvių kalboje. Adverbialų gausa lietuvių kalboje gali būti Baltijos regiono kalbų požymis.

1.2. Tas pats pasakytina ir apie būtinumo raiškos priemonių distribuciją. Anglų kalbos modalinių veiksmažodžių normalizuotas dažnis yra 7,61, adverbialų – 0,82; lietuvių kalbos modalinių veiksmažodžių vartosenos dažnis yra 3,39, o adverbialų – 0,93. Veiksmažodinių modalinio būtinumo žymiklių apytikslis santykis – 3 : 1 anglų kalbos naudai (LL: +590,99).

2. Kiekybinė ir kokybinė episteminio modalumo žymiklių analizė parodė skirtumą tarp raiškos priemonių potencialo ir realios jų vartosenos germanų ir baltų kalbose. Anglų ir lietuvių kalbose modalinių veiksmažodžių ir adverbialų strategijos episteminiam modalumui reikšti naudojamos nevienodu dažniu.

2.1. Lietuvių kalboje dominuoja adverbialinė episteminio modalumo raiškos strategija. Lietuvių kalboje episteminio galimumo veiksmažodis *galėti* ir adverbialai atitinkamai sąveikauja kaip 0,37 ir 2,09 (normalizuotas dažnis), o epsiteminį būtinumą

reiškiančio veiksmažodžio *turėti* vartosenos ir episteminės adverbialų vartosenos normalizuotas dažnis yra 0,21 ir 0,93.

2.2. Anglų kalboje episteminio galimumo niuansai perteikiami modaliniais veiksmažodžiais, jų normalizuotas dažnis yra 1,28, o galimumą reiškiančių adverbialų vartosenos dažnis – 0,95. Episteminis būtinumas anglų kalboje taip pat žymimas modaliniais veiksmažodžiais – jų normalizuotas dažnis 2,87, o adverbialų – 0,82.

2.3. Lietuvių kalbos vartosenoje aiškiai dominuoja episteminio galimumo konceptualioji dimensija. Ypač ryškus adverbialų vartosenos dažnio skirtumas: galimumą reiškiantys adverbialai (normalizuotas dažnis 2,09) du kartus dažnesni nei būtinumą reiškiantys adverbialai (jų normalizuotas dažnis 0,93). Veiksmažodžio *galėti* episteminė vartosena taip pat dažnesnė nei *turėti* (0,37 : 0,21). Veikiausiai tokį episteminio galimumo ir būtinumo žymiklių vartosenos dažnio skirtumą galima aiškinti tuo, kad kalbos vartotojai paprastai linkę žymėti savo abejonę, neįsitikinimą kalbamu faktu ar situacija, arba dėl vienokių ar kitokių pragmatinių (mandagumo, apsidraudimo) sumetimų savo teiginius jie linkę švelninti dažniau vartodami galimumo žymiklius. Jei teiginio tikrumu neabejojama, jis pateikiamas kaip faktas nevartojant jokių modalinių žymiklių arba juos vartojant saikingai.

2.4. Bendra episteminio modalumo raiškos priemonių analizė patvirtina veiksmažodinės strategijos dominavimą anglų kalboje ir adverbialinės strategijos dominavimą lietuvių kalboje. Visų tirtų episteminių anglų kalbos veiksmažodžių normalizuotas dažnis yra 4,14 (n = 2019), o lietuvių kalbos episteminį modalumą reiškiančių veiksmažodžių dažnis – tik 0,59 (n = 174). Logaritminės tikimybės testo vertė (+1044,11) rodo ypač dažną veiksmažodinės strategijos vartoseną anglų kalboje. Adverbialų vartosenos normalizuotas dažnis anglų kalboje yra 1,77 (n = 860), o lietuvių kalboje – 3,02 (n = 897). Logaritiminės tikimybės testo vertė (−125,68) rodo statistiškai reikšmingą adverbialinės strategijos dominavimą lietuvių kalboje.

Gauti rezultatai rodo skirtingą germanų ir baltų kalbų modalinių veiksmažodžių gramatikalizacijos lygį ir menką ekvivalentiškumą gramatinių kategorijų lygmeniu (cf. van der Auwera *et al*. 2005; Mortelmans 2009). Aukštas anglų kalbos modalinių veiksmažodžių gramatikalizacijos lygis gali lemti episteminio modalumo raiškos strategijų pasirinkimą. Dažnesnė anglų kalbos pagalbinių modalinių veiksmažodžių vartosena episteminėje erdvėje koreliuoja su jų daugiafunkciškumu, didesniu

gramatikalizacijos laipsniu ir tariamosios nuosakos nunykimu. Lietuvių kalboje modalinių veiksmažodžių *galėti* ir *turėti* semantinėje struktūroje dominuoja neepisteminė reikšmė. Episteminės veiksmažodžio *galėti* vartosenos normalizuotas dažnis yra 0,37 (24 proc.), o neepisteminės – 1,19 (76 proc.). Episteminės veiksmažodžio *turėti* vartosenos normalizuotas dažnis yra 0,21, o neepisteminės – 0,64, procentiškai tai taip pat sudaro 24 ir 76 proc. Taigi tik viena ketvirtoji abiejų veiksmažodžių vartosenos yra episteminė.

3. Episteminė reikšmė glaudžiai susijusi su veiksmažodžių komplementų ir subjekto specifikacija.

3.1. Tiek anglų kalboje, tiek lietuvių kalboje modaliniai veiksmažodžiai episteminę reikšmę dažniausiai įgyja pavartoti *būti–P* konstrukcijoje su statyvais. Episteminių *may / might* 'galėti' net 57 proc. konkordanso sudaro junginiai su statyvais, o konstrukcijos *gal\* + būti–P* episteminį modalumą reiškė 77 proc. visos vartosenos. Panašiai statyvumas sąveikavo ir su episteminiu būtinumu: pagrindiniai episteminio būtinumo žymikliai *must* ir *would* 'turėti' figūravo statyvinėse konstrukcijose 53 proc. visos vartosenos, o konstrukcija *tur\* + būti–P* buvo vartojama epistemiškai 52 proc. viso savo konkordanso.

3.2. Nė viena tarp lietuvių kalbos duomenų rasta veiksmažodžių *turėti* ir *galėti* 1-ojo ir 2-ojo asmens forma nedalyvavo reiškiant episteminį modalumą. Episteminė reikšmė būdinga tik 3-iojo asmens formų semantinei struktūrai, nors apskritai nėra dažna (24 proc. visos *galėti* ir *turėti* vartosenos). Šių veiksmažodžių episteminė vartosena su 3-iojo asmens formomis galėtų rodyti tam tikrą jų polinkį gramatėti.

Anglų kalboje subjekto koreliacija su episteminiu modalumu gana ryški: episteminio būtinumo veiksmažodžiai *must* ir *would* 'turėti' dažniausiai vartojami su 3-iojo asmens subjektais (54 proc.), egzistenciniu *there* arba formaliuoju *it / this* (22 proc.). Analogiškai episteminio galimumo žymikliai *may* ir *might* 'galėti' dažniausiai koreliuoja su 3-iojo asmens subjektais (53 proc.), egzistenciniu *there* arba formaliuoju *it / this* (26 proc.), o 1-ojo ir 2-ojo asmens formos sudaro 21 proc.

4. Vertimų paradigmų analizė parodė, kad episteminio galimumo žymiklių vertimas episteminio būtinumo raiškos priemonėmis ir atvirkščiai, episteminį būtinumą perteikiant episteminio galimumo žymikliais, suponuoja, kad lietuvių kalboje tikimybės laipsniai skiriami ne taip griežtai ir jos ribos ne tokios ryškios. Be to, praleidimo ir

įterpimo atvejai vertimo paradigmose gali būti aiškinami tarpkalbiniais struktūriniais skirtumais, kalbine episteminio modalumo konceptualizacijos specifika, pragmatiniais kalbėtojų tikslais ir kalbos normalizavimo reiškiniu.

4.1. Vertimo paradigmų duomenys taip pat patvirtino, kad lietuvių kalboje episteminiai galimumo tonai perduodami vartojant modalinius adverbialus, kiek rečiau – modalinius veiksmažodžius, o anglų kalboje situacija visiškai kitokia. Net 31 proc. *gal* ir *galbūt* atitikmenų originalioje anglų kalboje buvo veiksmažodžiai, tai rodo, kad versdami angliškus veiksmažodžius į lietuvių kalbą vertėjai renkasi adverbialų strategiją. Episteminių *may* ir *might* 'galėti' vertimas lietuviškais adverbialais sudaro 32 proc. viso jų vertimo konkordanso atitikmenų, o pagrindinio episteminio būtinumo žymiklio *must* 'turėti' vertimo profilis liudija, kad jis į lietuvių kalbą dažniausiai verčiamas adverbialais, kurie sudaro 51 proc. visos vartosenos. Originalius lietuviškus tekstus verčiant į anglų kalbą, net 56 proc. lietuviškų adverbialų virsta *must* 'turėti'. Tai dar kartą patvirtina adverbialinės strategijos kaip episteminio modalumo raiškos būdo lietuvių kalboje preferenciją – angliški veiksmažodžiai vertime į lietuvių kalbą verčiami lietuviškais adverbialais ir atvirkščiai, verčiant iš lietuvių kalbos į anglų kalbą lietuviški adverbialai verčiami angliškais modaliniais veiksmažodžiais.

5. Pagrindinio darbo empirinio šaltinio – iš grožinės literatūros tekstų sudaryto lygiagrečiojo tekstyno – duomenys iš pirmo žvilgsnio gal ir atrodytų galintys apriboti šio tyrimo išvadas iki tam tikro laipsnio, vis dėlto šiame darbe remiantis didelės apimties autentiška kalbos medžiaga, kurios tyrimo rezultatai lyginami su įvairiose gramatikose pateikiamais episteminio modalumo raiškos ir turinio aprašais, pateikiamas patikslintas lietuvių kalbos adverbialų sąrašas.

# LIST OF PUBLICATIONS ON THE SUBJECT OF DISSERTATION

1. Šolienė, A. 2007. Epistemic Modality in English and Lithuanian Translations. *Kalba ir kontekstai. Mokslo darbai. II tomas*. Vilnius: VPU leidykla. 90-102.

2. Šolienė, A. 2008. Markers of Epistemic Possibility and Necessity in Lithuanian and English: A Corpus-based Study. In: *Corpus Linguistics, Computer Tools, and Applications – State of the Art*. Lewandowska-Tomaszczyk, B. (ed.). Frankfurt am Mein: Peter Lang. 253-267.

3. Usonienė, A., Šolienė A. 2010. Choice of strategies in realizations of epistemic possibility in English and Lithuanian: a corpus-based study. *International Journal of Corpus Linguistics.*15 (2). Amsterdam & Philadelphia: John Benjamins Publishing Company. 291-316.

4. Šolienė, A. 2012. Epistemic necessity in a parallel corpus: Lithuanian vs. English. In Usonienė, A., Nau, N. & I. Dabašinskienė (eds.). *Multiple perspectives in linguistic research on Baltic languages*. Newcastle upon Tyne: Cambridge Scholars Publishing. 10-42.


# CONFERENCE PRESENTATIONS ON THE SUBJECT OF DISSERTATION

1. *Epistemic Modality in English and Lithuanian Translations*, 2nd International scientific conference "Lingvistiniai, didaktiniai ir sociokultūriniai aspektai įvairiuose kalbos funkcionavimo kontekstuose", Vilnius Pedagocigal University (Lithuania), 26-27 October, 2006.

2. *Markers of Epistemic Possibility and Necessity in Lithuanian and English*, International scientific conference "Practical Application in Language and Computers (PALC) 2007", Łódź University (Poland), 19-22 April, 2007.

3. *Expressions of Certainty in a Lithuanian-English Perspective*, International scientific conference "Tekstas: lingvistika ir poetika", Šiauliai University (Lithuania), 13 November, 2007.

4. *Episteminės galimybės raiškos anglų ir lietuvių kalbose tyrimas tekstynų lingvistikos metodu*, Conference of PhD students "Naujieji humanitariniai tyrinėjimai", Vilnius University (Lithuania), 24 April, 2008.

5. *Choice of strategies in realizations of modal possibility in English and Lithuanian: a corpus-based study* [together with A. Usonienė], 5th International Contrastive Linguistic Conference (ICLC 5), Leuven University (Belgium), 7-9 July, 2008.

6. *Epistemic Possibility in English and Lithuanian: going across different text types* [together with su A. Usonienė, I. Šeškauskienė and J. Šinkūnienė], SLE (Societas Linguistica Europea) 41st Annual Meeting, University of Bologna, Forlí Campus (Italy), 17-20 September, 2008.

7. *Epistemic-evidential* must have *and its LT correspondences (a case study based on an English-Lithuanian bidirectional translation corpus)*, International Seminar "Non-grammatical Evidentiality in the Baltic Languages: content, realizations, functions", Vilnius University (Lithuania), 2-3 December, 2009

8. *Epistemic-evidential overlap English* must *and its Lithuanian correspondences*, SLE (Societas Linguistica Europea) 43rd Annual Meeting, Vilnius University (Lithuania), 2-5 September, 2010

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