Evidential and epistemic adverbials in Lithuanian: evidence from intra-linguistic and cross-linguistic analysis

Anna Ruskan
Department of English Philology
Vilnius University
Universiteto st. 5
LT-01513 Vilnius, Lithuania
E-mail: anna.ruskan@flf.vu.lt

Audronė Šolienė
Department of English Philology
Vilnius University
Universiteto st. 5
LT-01513 Vilnius, Lithuania
E-mail: audrone.soliene@flf.vu.lt

Abstract

In the recent decade the realisations of evidentiality and epistemic modality in European languages have received a great scholarly interest and resulted in important investigations concerning the relation between evidentiality and epistemic modality, their means of expression and meaning extensions in various types of discourse. The present paper deals with the adverbials *akivaizdžiai* 'evidently', *aiškiai* 'clearly', *ryškiai* 'visibly, clearly', *matyt* 'apparently, evidently' and *regis* 'seemingly', which derive from the source domain of perception, and the epistemic necessity adverbials *tikriausiai/veikiausiai/greičiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly'. The aim of the paper is to explore the morphosyntactic properties of the adverbials when they are used as evidential or epistemic markers and compare the distribution of their evidential and epistemic functions in Lithuanian fiction, news and academic discourse. The data have been drawn from the Corpus of the Contemporary Lithuanian Language, the Corpus of Academic Lithuanian and the bidirectional translation corpus *ParaCorp*$_{EN \rightarrow LT \rightarrow EN}$ (Šolienė 2012, 2015). The quantitative findings reveal distributional differences of the adverbials under study across different types of discourse. Functional variation of the evidential perception-based adverbials is determined to a great extent by the degree of epistemic commitment, evidenced not only by intra-linguistic but also cross-linguistic data. The non-perception based adverbials *tikriausiai/veikiausiai/greičiausiai* 'most

probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' are the primary adverbial markers of epistemic necessity in Lithuanian, though some of them may have evidential meaning extensions. A parallel and comparable corpus-based analysis has once again proved to be a very efficient tool for diagnosing language-specific features and describing an inventory used to code language-specific evidential and epistemic meanings.

Keywords: epistemicity, evidentiality, epistemic modality, inferential(s), adverbial(s), cross-linguistic, intra-linguistic

1 Introduction

Evidential and epistemic adverbials are common devices for coding meanings of epistemicity in European languages. They have been thoroughly investigated in terms of their meaning, functions in discourse, structural and scopal properties in Germanic (Nuyts 2001; Wierzbicka 2006; Mortensen 2006; Simon-Vandenbergen & Aijmer 2007; Celle 2009; Carretero & Zamorano-Mansilla 2013), Romance (Marín-Arrese 2007, 2009; Squartini 2008; Cornillie 2009, 2010; Cornillie & Gras 2015), Slavic (Tutak 2003; Wiemer 2006; Letuchiy 2010; Wiemer & Kampf 2012) and Baltic languages (Wiemer 2007, 2010; Chojnicka 2012; Ruskan 2013, 2015; Šolienė 2013, 2015; Usonienė 2013, 2015, 2016). In a number of the studies mentioned, evidential and epistemic adverbials have been considered within the conceptually distinct categories of evidentiality and epistemic modality. The former is concerned with the indication of the degrees of the speaker's/writer's commitment towards the proposition, while the latter points out the sources of information the speaker/writer uses for grounding the proposition (Cornillie 2009, 47).

As a result of the conceptual distinction between evidentiality and epistemic modality, such markers as *apparently*, *evidently*, *obviously*, *clearly*, *reportedly*, *allegedly* and *supposedly* in English have been regarded as evidential markers (Marín-Arrese 2007, 2009; Celle 2009), whereas *probably*, *perhaps*, *certainly*, *definitely* as markers of epistemic modality (Marín-Arrese 2007, 2009; Carretero & Zamorano-Mansilla 2013; Boye 2016). For example, Celle (2009) argues that the hearsay adverbials *reportedly*, *allegedly* and *supposedly* do not mark the speaker's/writer's commitment to the proposition but signal his/her distance from the sources of information or propositional content. Similarly, Wiemer (2006) proves that the epistemic meaning components of the particles *podobno* 'supposedly' and *rzekomo* 'allegedly' in Polish can be cancelled in some contexts, and Alonso-Almeida (2012) claims that the adverbs *clearly* and *obviously* do not necessarily entail the evaluation of the truth-value of the proposition but modify the proposition in terms of the source of information.

However, some scholars maintain that in languages like English evidential adverbials should be regarded as "epistential" because they qualify the proposition in terms of both evidence and degree of the speaker's/writer's commitment (Faller 2002; Simon-Vandenbergen & Aijmer 2007; Carretero & Zamorano-Mansilla 2013). For example, the adverbials *clearly*, *obviously*, *evidently* refer to the source of information and display the meaning of epistemic certainty (Carretero & Zamorano-Mansilla 2013, 320). The evidential meaning of the adverbials is their primary meaning, whereas the meaning of epistemic certainty is secondary. The "epistential" nature of the evidential adverbials is also disclosed by their translation correspondences in parallel corpora (Simon-Vandenbergen & Aijmer 2007). The adverbials *obviously* and *clearly* have their evidential and epistemic translation equivalents in French, Swedish, Dutch and German.

In Lithuanian, inferential adverbials (*matyt* 'apparently, evidently', *atrodo* 'it seems', *regis* 'seemingly', *akivaizdžiai* 'evidently', *aiškiai* 'clearly') and reportative adverbials (*esą* 'they say', *tariamai* 'allegedly, supposedly', *neva* 'as if', *žinia* 'reportedly') have been discussed in Wiemer (2007, 2010), Usonienė (2013, 2015, 2016) and Ruskan (2013, 2015). The epistemic extensions of evidential markers have been addressed in intra-linguistic and cross-linguistic studies dealing with the adverbials *matyt* 'apparently, evidently', *regis* 'seemingly' and *atrodo* 'it seems' (Usonienė 2001, 2015, 2016; Šinkūnienė 2012; Šolienė 2012; Usonienė & Šinkūnienė 2013). For example, the evidential-epistemic nature of these adverbials is reflected by the fact that they can be used as translation correspondences of the evidential epistemic verb *seem* (Usonienė & Šinkūnienė 2013, 297–298). The present study aligns with the view that evidential adverbials specify the source of information within the micro or macro linguistic context, while epistemic adverbials do not (Wiemer & Kampf 2012).

The distinct features of evidential and epistemic adverbials as well as relationship between the evidential and epistemic meaning can be best explained within the category of epistemicity, which includes the sub-category of evidentiality and epistemic modality (Boye 2012) and accounts not only for the internal meaning relationships within each sub-category but also for external sub-categorial cross-cuts. Epistemicity is among "integrated models of evidentiality and epistemic modality", in which both categories "intermingle in various degrees" (Squartini 2016, 64). The sub-categorial cross-cut relevant to this research concerns the inferential meaning of evidentiality and the meaning of probability. Inferentials are the linking element of evidentiality and epistemic modality as "they can be considered equally epistemic, in that inferences are intrinsically less reliable than direct perceptions, and evidential since inferential reasoning is typically based on external indirect sources" (Squartini 2016, 62). The modal status of inferentials is recognised by Nuyts (2016), who assigns "different degrees of modal commitment" and intrinsic scalarity to inferential markers. However, Nuyts (2017, 72–73) emphasises

that inferential evidentiality "refers to the reasoning process as such", whereas epistemic modality "denotes nothing at all in terms of the reasoning process leading to <...> [epistemic] assessment".

The inferential meaning in this paper will be described along the parameters of external and internal sources of evidence distinguished by Squartini (2008, 925). External sources of evidence may pertain to sensory evidence or written cognitive sources available to the speaker/writer, while internal sources of evidence refer to the speaker's/writer's knowledge of the world and assumptions. Squartini (2016, 64) admits that "lacking an external source of evidence and being totally based on mental reasoning, assumptions are patently problematic as evidential modes of knowing and this produces additional discrepancies in the interpretation of this function in epistemic prominent languages". However, the distinction between external and internal source based inferences seems to be valid for some makers in Italian and French (Squartini 2008).

The present study focuses on perception-based adverbials *akivaizdžiai* 'evidently', *aiškiai* 'clearly', *ryškiai* 'visibly, clearly', *matyt* 'apparently, evidently', *regis* 'seemingly' and non-perception based adverbials *tikriausiai/veikiausiai/greičiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' in Lithuanian across different types of discourse (fiction, academic and newspaper). Due to the limited scope of the paper, adverbials based on verbs of appearance (*atrodo* 'it seems', *rodos* 'it seems'), distinguished from verbs of perception proper (*see*, *hear*) in Gisborne and Holmes (2007), were not considered. The study aims to explore the morphosyntactic properties of the adverbials under analysis, their scope and functions in discourse. Following the parameters established for evidential and epistemic adverbials in Bulgarian (Wiemer & Kampf 2012), the current study identifies evidential and epistemic functions of the perception and non-perception based adverbials in Lithuanian and discusses the cases of their evidential-epistemic overlap and factors triggering it. The meaning and functions of the adverbials under study are also analysed taking into account their English correspondences in the parallel corpus. Although in individual studies, functions of evidential (Usonienė 2013; Ruskan 2013, 2015) and epistemic adverbials (Šolienė 2012, 2015) have been scrutinised, there is no study accounting for the qualitative and quantitative distribution of perception and non-perception based adverbials across different types of discourse. Moreover, there has been no study comparing functional differences of inferential markers deriving from the domain of perception.

2 Data and methods

The present study has been carried out by applying corpus-based methodology, which has been proved to be an effective tool in describing the functional distribution of evidential

and epistemic markers in Germanic (Simon-Vandenbergen & Aijmer 2007), Romance (Cornillie 2010), Slavic (Wiemer & Kampf 2012) and Baltic languages (Usonienė & Šolienė 2010; Šinkūnienė 2012; Smetona & Usonienė 2012; Ruskan 2012; Chojnicka 2012). As shown in the studies mentioned above, in order to obtain a comprehensive functional semantic profile of the markers of epistemicity (evidentiality and epistemic modality), it is necessary to analyse them in their authentic contexts of use, which are efficiently provided by corpora.

The data for the current study have been retrieved from the Corpus of the Contemporary Lithuanian Language (CCLL) (http://tekstynas.vdu.lt/), namely from the sub-corpus of fiction (15,765,554 words) and the central newspapers *Lietuvos Rytas* (8,695,454 words) and *Bernardinai.lt* (3,115,891 words) and from the Corpus of Academic Lithuanian (CorALit) (http://www.coralit.lt/, about nine million words), which is comprised of academic texts published from 1999 to 2009. The Corpus of Academic Lithuanian contains the sub-corpora of biomedical sciences, humanities, physical sciences, social sciences and technological sciences. To complement the findings from the monolingual corpora, data were also drawn from the bidirectional parallel corpus *ParaCorp$_{EN \to LT \to EN}$* (Šolienė 2012, 2015). The latest corpus-based studies into epistemicity in Lithuanian and English (Usonienė & Šolienė 2010; Usonienė & Šinkūnienė 2013; Usonienė & Šolienė forthcoming) show that parallel corpora help to establish functional semantic intricacies of evidential and epistemic markers which cannot be identified by relying on data retrieved only from monolingual corpora.

The study combined both quantitative and qualitative analysis. The quantitative analysis covered the overall frequencies of the perception-based adverbials *akivaizdžiai* 'evidently', *aiškiai* 'clearly', *ryškiai* 'visibly, clearly', *matyt* 'apparently, evidently', *regis* 'seemingly' and non-perception based adverbials *tikriausiai/veikiausiai/greičiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' in the corpora used. Since the sizes of the corpora differ, the raw frequencies have been normalised per 10,000 words. The purely quantitative results are discussed in Section 3. The qualitative analysis involved drawing a line between the adverbials under study functioning as manner or sentence (epistemic/ evidential) modifiers and exploring evidential and epistemic functions of the adverbials in question from the monolingual and parallel corpora.

3 The overall frequency of the perception-based and non-perception based adverbials in the corpora

As mentioned above, in the first stage of the analysis we considered the overall frequency of adverbials in question in the three different discourse types (fiction, news and academic). The results are given in Table 1.

Adverbials	CCLL (fiction) raw (f/10,000)	CCLL (news) raw (f/10,000)	CorALit (acad) raw (f/10,000)
Perception-based			
matyt[1] 'apparently, evidently'	5,791 (3.67)	1,129 (0.96)	657 (0.8)
regis 'seemingly'	2,302 (1.46)	473 (0.4)	162 (0.2)
aiškiai 'clearly'	2,780 (1.76)	1,043 (0.9)	1,003 (1.2)
akivaizdžiai 'evidently'	634 (0.4)	341 (0.3)	398 (0.5)
ryškiai 'visibly, clearly'	792 (0.5)	105 (0.1)	276 (0.3)
Total	**12,299 (7.79)**	**3,091 (2.66)**	**2,496 (3.0)**
Non-perception based			
tikriausiai 'most probably'	6,074 (3.85)	1,245 (1.1)	273 (0.3)
greičiausiai 'most probably'	911 (0.58)	861 (0.7)	471 (0.5)
veikiausiai 'most probably'	945 (0.6)	158 (0.1)	84 (0.1)
neabejotinai 'undoubtedly'	576 (0.37)	254 (0.2)	371 (0.4)
būtinai 'necessarily'	1,592 (1.0)	346 (0.3)	200 (0.2)
Total	**10,098 (6.4)**	**2,864 (2.4)**	**1,399 (1.5)**

Table 1. Overall frequencies of the adverbials in the corpora

The data show that the perception-based adverbials are more frequent than the non-perception based adverbials across all the types of discourse, which highlights the primacy of perception in communication. As Caballero and Paradis (2015, 1) claim, "sensory perceptions play a crucial role in our daily encounters with the world in all kinds of activities". Perceptual dimension turns out to be significant in fiction, which is not surprising, because fiction at least partially resembles spoken discourse, which is full of spontaneity (Chafe 1986, 262) and reference to different types of evidence. The fact that the non-perception based adverbials, which express the speaker's/writer's degree of commitment, as will be shown further, are more frequent in fiction than in the other types of discourse is in line with Biber *et al.*'s (1999, 867−868) findings that epistemic adverbials are most frequent in spoken discourse and fiction. Previous studies (Ruskan 2013, 2015) also show that the overall frequency of evidential adverbials and complement taking predicates differs in fiction and academic discourse.

The most common perception-based adverbials in the sub-corpora under study are *matyt* 'apparently, evidently', *aiškiai* 'clearly' and *regis* 'seemingly'. As *matyt* 'apparently, evidently' derives from the infinitive form *matyti* 'see', one of the most frequent verbs of perception (Usonienė 2003, 194), it also tends to be used frequently. It is a convenient means for communicating indirect types of evidence based on visual clues, as will be

---

[1]   The predicative uses of *matyt* 'it seems that' and *regis* 'it seems that' (*e.g.* a complement taking predicate with a *that* clause, *etc.*) are not included in the calculation.

shown in further sections. *Aiškiai* 'clearly' is more frequent than *matyt* 'apparently, evidently' only in academic discourse; however, it should be noted that the occurrences of *aiškiai* 'clearly' presented in Table 1 include the manner use of the adverbial. In its evidential use, *aiškiai* 'clearly' is less frequent than *matyt* 'apparently, evidently'. After discarding the manner uses of *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly', it turned out that the second most frequent adverbial is *regis* 'seemingly', which derives from the reflexive predicative *regis(i)* 'see/behold'.

Among the non-perception based adverbials the most frequent is *tikriausiai* 'most probably' in fiction and news, whereas *greičiausiai* 'most probably' is the most frequent in academic discourse. The argumentative force of the latter type of discourse is also marked by the fact that the second most frequent adverbial is *neabejotinai* 'undoubtedly', which expresses epistemic certainty. In news discourse, *neabejotinai* 'undoubtedly' is slightly less frequent than in academic discourse.

4 Manner and evidential/epistemic adverbials

When the perception-based adverbials *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' are used as predication modifiers, they denote manner. As has already been shown in previous studies on evidential adverbials in Lithuanian (Ruskan 2013, 2015) and their equivalents *obviously* and *clearly* in English (Simon-Vandenbergen & Aijmer 2007; Carretero & Zamorano-Mansilla 2013), they denote manner in collocations with verbs of perception (*e.g. matyti* 'see'), cognition (*e.g. manyti* 'think') and communication (*e.g. sakyti* 'say', *rodyti* 'show'):

(1)   *Tai **akivaizdžiai matyti** upėse <...>.* (CorALit, P)
      'This can be **clearly** (lit. evidently) **seen** in rivers <…>.'

(2)   *Kiekvieną garsą, kiekvieną akimis sugautą judesį jis dabar **suvokė ryškiai** ir **aiškiai** <...>.* (CCLL-fiction)
      'Now he **perceived** every sound, every movement caught by his sight **distinctly** and **clearly** <…>.'

(3)   *Manau, kad **pasakiau** pakankamai **aiškiai**.* (CCLL-fiction)
      'I think I **said** quite **clearly**.'

In the contexts above, the adverbials refer to how clearly and distinctly the experiencer perceives the world. Although all of these adverbials display similar collocations when used as manner adverbials, the adverbial *ryškiai* 'visibly, clearly' shows a greater

tendency than the other adverbials to collocate with verbs or adjectives referring to light, brightness or colour:

(4) <...> *vakaro saulė **ryškiai nušvietė** jų veidus* <....>. (CCLL-fiction)
'<...> the evening sun **brightly**/**distinctly lit** their faces <...>.'

(5) *Ant violetinių stiebų pasirodė **ryškiai geltonos** gėlės.* (CCLL-fiction)
'On the violet stems there appeared **bright** (lit. brightly) **yellow** flowers.'

(6) *Snieguotos viršūnės **ryškiai žėrėjo** saulėje.* (CCLL-fiction)
'The peaks covered with snow **were brightly shining** (lit. brightly were shining) in the sun.'

Ryškiai 'visibly, clearly' modifies the verb *lit* (4), the adjective *yellow* (5) and the verb *were shining* (6). As will be shown further, in contrast to *akivaizdžiai* 'evidently' and *aiškiai* 'clearly', its use in fiction does not expand to evidential contexts almost at all. It is mainly used as an adverbial of manner or degree modifying actions and states attested in the "sociophysical world" (Traugott 1989, 46). When *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' collocate with the existential and relational verbs *išryškėti* 'become visible', *atsispindėti* 'be reflected' and *atsiskleisti* 'be disclosed', which are quite frequent in academic and news discourse, they are also used as manner adverbials:

(7) *Tiriant vertimus, poezijoje paskiro žodžio svarba gali **išryškėti itin akivaizdžiai*** <...>. (CorALit, H)
'Analysing translations, the importance of an individual word may **become distinct** (lit. visible) **quite clearly** (lit. evidently) <...>.'

(8) *Kūrėjo principai, išdėstyti pagrindiniame jo teoriniame veikale, **labai aiškiai atsispindėjo** ir jo kūryboje Lietuvoje.* (CorALit, T)
'The creator's principles, outlined in his main theoretical work, **were very clearly reflected** (lit. very clearly were reflected) in his works in Lithuania.'

(9) *Per radijo bei televizijos interviu gali **ryškiai atsiskleisti** ne tik žurnalisto, bet ir jo pašnekovo sugebėjimai bei kompetencija.* (CorALit, H)
'During an interview on the radio or television not only a journalist's but also an interviewee's abilities and competence may **be clearly** (lit. visibly) **disclosed**.'

The manner use of the adverbials is evident from their co-occurrence with the degree modifiers *itin* 'quite' (7) and *labai* 'very' (8), other adverbials of manner (10) or from their use in conditional clauses (11):

(10) *Jis pirmą kartą **taip akivaizdžiai** ir **tiesiogiai** susidūrė su besmegene, nuožmiai pavojinga sistema.* (CCLL-fiction)
'For the first time he faced the brainless and fiercely dangerous system **so clearly** (lit. evidently**)** and **directly**.'

(11) *Bet galbūt mano skausmą numalšintų tai, **jei** ji mane dar kartą **aiškiai** įžeistų.* (CCLL-fiction)
'But perhaps my pain could be reduced **if** she once again **clearly** offended me.'

The perception based markers *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' expand their scope to sentence adverbials and acquire evidential functions in the following contexts:

(12) *Benas, **akivaizdžiai mėgaudamasis** Tomo sutrikimu, pakėlė taurę šampano.* (CCLL-fiction)
'Benas **was evidently enjoying** Tomas' embarrassment, he raised a glass of champagne.'

(13) *Seime **aiškiai trūksta** politinės valios.* (CCLL-news)
'The Seimas **clearly lacks** political will.'

(14) *<...> jų nuomonė apie nemalonius darbus <...> **yra ryškiai neigiama**.* (CCLL-fiction)
'<....> their opinion about unpleasant activities <...> **is clearly** (lit. visibly) **negative**.

(15) *Jis **akivaizdžiai pajaunėjo** ir jau nebesikūprino nuo senatvės ir negalios.* (CCLL-fiction)
'He **evidently became younger** and did not hunch from old age and disability.'

When used as sentence modifiers, the adverbials collocate with predicates denoting psychological states and emotions (12), existential and relational processes (13)–(14) or changes (15). In contrast to (1)–(11), the adverbials in (12)–(15) modify propositions, but not states of affairs. As shown in other studies (Carretero & Zamorano-Mansilla 2013, 345; Ruskan 2015), their increased scope can be tested by paraphrasing them in the impersonal predicative construction containing the corresponding adjective:

(16) ***Akivaizdu**, kad Benas mėgavosi ...*
'It is **evident** that Benas was enjoying ...'

(17) **Aišku**, *kad Seime trūksta ....*
'It is **clear** that the Seimas lacks ....'

(18) **Ryšku**, *kad jų nuomonė <...> yra neigiama ....*
'It is **clear** (lit. distinct) that their opinion <…> is negative ....'

However, it should be noted that the adjective *ryšku* 'distinct, clear' is used in the construction above only in very few cases, as the data from the CCLL show. Since the adjective is rarely attested in this construction, the corresponding adverb *ryškiai* 'visibly, clearly' also rarely occurs as a sentence adverbial, as will be illustrated further in the section. The perception-based adverbials *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' could be regarded as alternative inferential markers to the verb *matyti* 'see' that functions as a CTP subordinating a *that* clause:

(19) *Vilija atšoko į šalį, įsikibdama Sauliui į ranką.* **Aiškiai mačiau, kad** *ji labai išsigandusi.* (CCLL-fiction)
'Vilija jumped to the side, clinging to Saulius' arm. I **clearly saw that** she was very frightened.'

(20) *<...> jau beveik* **akivaizdžiai matosi, kad** *tai – melas, jau sąmoningas melas.* (CCLL-fiction)
'<...> almost **clearly** (lit. evidently) **can be seen that** it is a lie, already a conscious lie.'

In (19) and (20), the CTPs *mačiau* 'I saw' and *matosi* '(is) seen' signal inferences based on visual evidence, whereas the adverbials *akivaizdžiai* 'evidently' and *aiškiai* 'clearly' co-occurring with the CTPs function as manner adverbials because they emphasise that the proposition within the scope of the CTPs could be seen in a clear/evident way. It should be noted that the type of the predicate is not the only criterion determining the manner or evidential use of the adverbials. For example, even if the adverbial collocates with a predicate denoting some psychological state and emotion but is preceded by a degree adverb, the adverbial denotes manner. Consider the following examples:

(21) *<...> šeimininkui nedera* **taip akivaizdžiai** *didžiuotis <....>* (CCLL-fiction)
'<...> the host should not be **so clearly** (lit. evidently) proud <...>.'

(22) *Ji* **taip akivaizdžiai** *mėgavosi iškyla, jog man nereikėjo nieko sakyti.* (CCLL-fiction)
'She was **so clearly** (lit. evidently) enjoying the picnic that I did not have to say anything.'

The degree adverb *taip* 'so' (21)–(22) triggers the manner reading of the adverbial *akivaizdžiai* 'evidently'. In a number of cases, the adverbials under study display ambiguity between manner and evidential reading:

(23) *Jis **akivaizdžiai** rėmėsi aksioma, jog, Fatimai R. davus komandą, neišvengiamai ir nesvyruojant paklūstama.* (CCLL-fiction)
     'He **evidently** relied on the axiom that giving a command to Fatima R. one gives up unavoidably and definitely.'

(24) *Daugelis nykstančių kalbų turi gausybę tarmių, kai kurios jų tarpusavyje **aiškiai** skiriasi garsais, gramatika ir žodynu.* (CCLL-fiction)
     'A number of dying languages have a lot of dialects that **clearly** differ from each other in their sounds, grammar and vocabulary.'

(25) *Tiesa, abu spektakliai **ryškiai** skiriasi ne tik problematika, bet ir aktorine raiška, scenos apipavidalinimu. Tikslas ju toks pat – gvildenti aktualias problemas.* (CCLL-news)
     'In fact, both plays **clearly** (lit. visibly) differ not only in the problems raised but also the actors' expression, stage arrangement. They both aim to discuss important issues.'

The adverbials above can be interpreted as 'in a clear/evident way' and 'it is clear/evident that'. As claimed in Vandenbergen and Aijmer (2007, 166), the link between the two meanings may be close. In a similar vein, Carretero and Zamorano-Mansilla (2013, 344) maintain that the manner meaning of adverbials "is not incompatible with their evidential meaning."

The non-perception based adverbials *būtinai* 'necessarily', *veikiausiai* 'most probably' and *neabejotinai* 'undoubtedly' never function as manner adverbials, whereas *greičiausiai* and *tikriausiai* 'most probably' may potentially have a two-fold function: they may feature as predicate or sentence adverbials. In the following example *greičiausiai* 'most probably' denotes manner:

(26) LT-orig: *Jo slaugomieji ligoniai **greičiausiai** pasveikdavo.*
     EN-trans: *The patients he cared for recovered **the quickest**.*

As for *tikriausiai*, it has the potential to be used as a manner adverbial:

(27) *Šis prietaisas **tikriausiai** rodo laiką.* (Holvoet & Pajėdienė 2005, 99)

The paraphrase would be 'This device shows the time most exactly'. However, such use of *tikriausiai* 'most probably' has not been attested in the analysis of the authentic data. The table below indicates the percentage of the overall use of the adverbials in question as sentence adverbials (the remaining part is their manner or ambiguous use). The adverbials *matyt* 'apparently, evidently' and *regis* 'seemingly' as well as *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' are not included since they cannot function as manner adverbials.

Adverbials	CCLL (fiction) %	CCLL (news) %	CorALit (acad) %
Perception-based			
aiškiai 'clearly'	25	19	12
akivaizdžiai 'evidently'	67	64	37
ryškiai 'visibly, clearly'	2	25	23
Non-perception based			
tikriausiai 'most probably'	100	100	100
greičiausiai 'most probably'	94	96	83

Table 2. Percentage of sentence adverbial use

As the data in the table show, the non-perception based adverbials mainly function as sentence modifiers, whereas the perception-based adverbials (to a certain extent except for *akivaizdžiai* 'evidently') behave differently. In fiction and news discourse, *akivaizdžiai* 'evidently' is used more frequently as a sentence adverbial than a manner adverbial. In academic discourse, its use as a sentence adverbial is also quite salient (37%). The adverbials *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' are used more frequently as manner adverbials. It should be noted that in fiction the use of *ryškiai* 'visibly, clearly' as a sentence adverbial is rather marginal.

The manner use of the perception-based adverbials is confirmed by their translation correspondences (TCs) found in the *ParaCorp$_{EN \rightarrow LT \rightarrow EN}$*, such as *in an obvious way, obviously, clearly, distinctly, vividly, acutely, plainly, visibly*:

(28) LT-orig: *Čia mes šitai **aiškiai** suvokiame.*
       EN-trans: *We are **acutely** aware of this here.*

(29) LT-orig: *O senoje Jurbarko katalikų bažnyčios knygoje **aiškiai** parašyta <...>*
       EN-trans: *In Jurbarkas' old church books, the following is **clearly** written <...>*

Such translation correspondences as *acutely aware* or *clearly written* can only be unambiguously interpreted as denoting manner. The same could be said about the TCs

of *greičiausiai* 'most quickly' as a predicate modifier. In such cases it is translated as *as quickly as possible, as soon as possible, the quickest.*

5 Evidential adverbials

As illustrated by ample cross-linguistic evidence (Willett 1988; Usonienė 2003; Aikhenvald 2004; Wiemer 2006; Simon-Vandenbergen & Aijmer 2007; Squartini 2008; Boye & Harder 2009; Chojnicka 2012; Wiemer & Kampf 2012), perception-based markers are prolific sources of evidential values. For example, the verb of visual perception *see* and its equivalents in other languages (*e.g.* Lithuanian, Spanish) are found to function as inferential markers (Usonienė 2003; Marín-Arrese 2009). The evidential adverbials *evidently*, *obviously* and *clearly* in English and their correspondences in Romance, Slavic and Baltic languages all originate in their lexical meaning as adverbs of visual perception, the primary semantic component of which is "easily seen, noticed, perceived" (Simon-Vandenbergen & Aijmer 2007, 54). In Lithuanian, the visual perception based adverbials *matyt* 'apparently, evidently', *regis* 'seemingly', *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly', thoroughly discussed in individual studies (Usonienė 2003; Šolienė 2012; Usonienė & Šinkūnienė 2013; Ruskan 2015), display inferential values attested in evidential taxonomies. They all express inferences based on external sensory evidence, as in the following contexts:

(30)   *Mergina sėdėjo ant kranto ir mėtė į jūrą akmenukus – **matyt**, mėgino nusiraminti.* (CCLL-fiction)
'The girl was sitting at the shore and throwing little stones into the sea – **apparently** she was trying to calm down.'

(31)   ***Regis**, ateina, – nutraukė mane Tania, – girdėjau už durų.* (CCLL-fiction)
' – **It seems/seemingly,** they are coming, – Tania interrupted me, – I heard behind the door.'

(32)   *Nors kai kurie šių kilmingųjų drabužiai, sprendžiant iš jų ypatybių, perteiktų meistriškiau atliktuose portretuose, **aiškiai** siūti iš vietinių ar itališkų, prancūziškų audinių.* (CorALit, H)
'Some clothes worn by nobles, which can be seen in those more skilfully drawn portraits, were **clearly** made from local or Italian or French textiles.'

(33)   *– Man atrodo, kad greitai ją surasiu, ji labai arti, Kimo. – Tu **akivaizdžiai** fantazuoji. Gyveni svajonėse ir negali pasiduoti realybei.* (CCLL-fiction)
' – It seems to me that I will soon find her, she is close, Kimo. – You are **evidently** imagining things up. You live in dreams and cannot fit in reality.'

The claim that the girl was trying to calm down by throwing stones into the water (30) and the judgment about the local or Italian or French textiles (32) is based on visual information accessible to the speaker/writer (the view of the girl and the clothes seen in portraits), while the fact of somebody coming (31) and imagining things (33) is deduced from auditory information. Despite the fact that all of these markers denote inferences based on perceptual evidence, the degree of the speaker's/writer's commitment is different. The adverbials *matyt* 'apparently, evidently' and *regis* 'seemingly', as also shown in Usonienė (2015), reveal an epistemic extension of doubt. The type of visual and auditory perception is not reliable to such an extent that the speaker/writer could modify the proposition with markers expressing certainty as in (32) and (33). The same epistemic overtones can be observed when these markers express inferences drawn from internal evidence:

(34) *Bet liberali politika ir šiuo požiūriu turi pranašumų, kurie, **matyt**, nemažai prisidėjo prie Estijos sėkmės. Liberali politika stengiasi apriboti <...>.* (CCLL-news)
      'But in this respect liberal politics also has advantages, which **apparently** contributed greatly to Estonia's success. Liberal politics tries to restrict <...>.'

(35) *<...> nerimstant aistroms Indijoje, jos užvirė kitoje Azijos vietoje – Indonezijoje. **Regis**, ten gali pasikartoti Filipinų scenarijus, ir dėl korupcijos skandalų teks <...>.* (CCLL-news)
      '<...> unceasing unrest in India spread to another place in Asia – Indonesia. **Seemingly**, a scenario from the Philippines may happen there, and because of corruption scandals it will be necessary <...>.'

In (34) and (35) the inferential adverbials *matyt* 'apparently, evidently' and *regis* 'seemingly' are used because some facts known to the speaker/writer (internal evidence) do not allow for drawing stronger epistemic commitment. In contrast, *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' appear in emphatic contexts:

(36) *Per pirminius rinkimus labai išryškėjo amerikiečių ilgesys permainoms – jie **akivaizdžiai** nepatenkinti dabartine politika. Jau ir H. Clinton mažiau kalba apie savo patirtį ir žinias, labiau apie savo norą keisti Ameriką.* (CCLL-news)
      'The initial elections showed Americans' great longing for changes – they are **evidently** dissatisfied with the present politics. Even H. Clinton talks less about her experience and knowledge and more about her wish to change America.'

(37) *Izraelio vyriausybės kantrybė po šių krūvinų išpuolių **aiškiai** išseko – jau vakar aukščiausiuose valdžios sluoksniuose pasigirdo kategoriški reikalavimai smogti ne tik teroristams, bet ir <...>* (CCLL-news)

'After those bloody attacks the Israeli government **clearly** lost their patience – already yesterday in the highest government ranks one could hear pressing demands to attack not only terrorists but also <...>.'

(38) *Tarp trenerių **ryškiai** pirmauja Jonas Kazlauskas ("Lietuvos rytas", 126).* (CCLL-news)

'The leading position among coaches is **clearly** (lit. visibly is held) held by Jonas Kazlauskas ("Lietuvos rytas", 126).'

In (36)–(38) the perception based adverbials serve as means of argumentation because they refer to sound evidence that cannot be refuted. The speaker/writer has evidence that Americans are not satisfied with the present political situation (36), that the Israeli government lost their patience (37) and that Jonas Kazlauskas is the leader among basketball coaches (38). If there were some doubts concerning the veracity of the available evidence, more appropriate markers would be *matyt* 'apparently, evidently' and *regis* 'seemingly'. As Caballero and Paradis (2015, 6) argue, "references to sensory experience in discourse, in combination with other clues, are important indications of reliable modes of knowing as evidence in favour of a high degree of speaker credibility". The following translation correspondences confirm the fact that the perception-based adverbials *akivaizdžiai* 'evidently' in (39) and *aiškiai* 'clearly' in (40) denote inferences drawn from external sensory evidence or internal evidence and denote a high degree of certainty:

(39) LT-orig: *<...> dulkės ant stalų nepaliestos, tačiau kažkas **akivaizdžiai** rausėsi po mano daiktus.*
EN-trans: *<...> even the dust on the tables hasn't been touched, but someone has **obviously** rummaged through my things.*

Here the speaker/writer makes an evidential judgment in accordance with some external evidence available, namely, the untouched dust on the table, and *akivaizdžiai* 'evidently' is rendered into English by the prototypical evidential marker *obviously*. Moreover, the interplay between evidential and epistemic functions manifests itself in such TCs as *surely* and *indeed*:

(40) LT-orig: *Du žmonės, visą laiką buvę šalia manęs ir net tam tikra prasme dalimi manęs, nejučiomis, bet **aiškiai** ėmė nuo manęs tolti.*
EN-trans: *Two persons, who had been close to me all the time and even in a certain sense a part of me, slowly but **surely** began to draw away from me.*

The translation correspondences of *matyt* 'apparently, evidently' also show that in certain contexts it may convey the speaker's/writer's commitment to the truth of the proposition. The semantic mirror of *matyt* 'apparently, evidently' (see Table 3) shows a great diversity of its translational correspondences.

matyt	LT-orig → EN-trans		LT-trans → 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

Table 3. Translational correspondences of *matyt* 'apparently, evidently' in ParaCorp$_{EN→LT→EN}$

A plausible explanation for such a wide profile of translational correspondences seems to be different types of evidence available for the speaker/writer. As Boye and Harder (2009) maintain, different nuances of evidence can be related to different degrees of reliability. Similarly, Plungian (2001, 354) claims that "an epistemic marker contains more evidential properties when the source of the speaker's hypothesis is specified". If the proposition is based on the evidence inferred from observed results, the translational correspondences of *matyt* 'apparently, evidently' are the prototypical markers of evidentiality, for example, such adverbs as *obviously*, *evidently* and *apparently* or epistemic-evidential *must*:

(41) LT-orig: *Prie batų parduotuvės grūdosi įkaitusios moteriškės: **matyt**, ko nors atvežė.*
EN-trans: *Some excited women were shoving by the shoe store: **apparently**, something had been delivered.*

(42) LT-orig: *...velnias, galva kaip medinė, atmerkęs akis pamato skersai stalo pamestas kelnes, **matyt**, jau labai gražus parėjo...*
EN-trans: *...hell, his head feels like wood, when he opens his eyes he sees his pants thrown across the table, he **must have come** home a pretty sight...*

In the two examples above the speaker/writer clearly makes inferences on the clues observed in the context of utterance. If the available evidence is inferred by logical

reasoning, the translational correspondences of *matyt* 'apparently, evidently' encode a lower degree of certainty, as shown below:

(43) LT-orig: *Pačiam vienam būtų visai prastai.* **Matyt***, ir Vytautas negali likti vienas.*
EN-trans: *If I were left all by myself, it would be much worse.* **Quite possibly***, Vytautas can't stay alone either.*

The English verb *seem*, whose evidential nature has been attested in several studies (Usonienė 2001, 2003; Usonienė & Šinkūnienė 2013), is the most frequent TC of both *regis* 'seemingly' (64% of all the concordance) and *matyt* 'apparently, evidently' (32%, respectively):

(44) LT-orig: *Motina įeina į kambarį,* **regis***, labai nori kažką pasakyti, visad rodosi, kad nori pasakyt kažką svarbaus.*
EN-trans: *Mother comes into the room;* **it seems** *she badly wants to say something – it always seems she wants to say something important.*

Here the speaker/writer makes an inference about his/her mother's willingness to express her view and this judgement is most probably based on her appearance or her typical behaviour; however, by using the adverbial, he/she entertains doubt and refrains from rendering his/her assertion as a fact.

The analysis of the correspondences of *matyt* 'apparently, evidently' and *regis* 'seemingly' shows that the semantic structure of these modal words retains the element of inference which is an important factor in the extension of meaning from direct visual perception to mental perception and then further to evidentials (Usonienė 2003; Wiemer 2007). The data support the inferential nature of *matyt* 'apparently, evidently' and *regis* 'seemingly'; however, self-inference, as an unreliable source of information, triggers the meaning of uncertainty. What is more, it seems that different nuances and types of evidence available for the speaker/writer have an impact on the different degrees of his/her commitment to the assertion made (*cf.* Boye & Harder 2009, see Cornillie 2009 on reliability).

6 Epistemic adverbials

The relation between the domains of evidentiality and epistemic modality is not always clear. Plungian (2001, 354) claims 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". The interplay of inferential evidentiality and the domain of epistemic modality is traditionally exemplified by the English modal auxiliary *must*:

(45)   *Ken **must** be at home.*

The sentence can be interpreted as expressing epistemic necessity based on the speaker's/ writer's general knowledge – Ken is usually at home around this time, or his/her judgement can be based on an inference derived from some specific evidence available – Ken's bike or car is in front of the house, or the lights are on. Epistemic-evidential syncretism is indicative not only of certain modal verbal markers but also of adverbials (see *matyt* 'apparently, evidently' in sentences (41), (42) and *regis* 'seemingly' in (44) above).

In different languages modal adverbials are mostly used to convey epistemic meanings, with a very few exceptions where they appear in deontic and dynamic domains. One could mention "a well known example in Slovenian with its modal particle *lahko* 'easily' covering all types of possibility, also deontic and dynamic" (Holvoet 2009, 204). However, this is not the case with Lithuanian adverbials. In Lithuanian, modal adverbials do not have non-epistemic readings. They are used to express a low or high degree of the speaker's/writer's commitment to the stated proposition. The use of epistemic adverbials allows the speaker/writer to reveal modal nuances more precisely in terms of different degrees of likelihood, whereas the semantic spectrum of epistemic modal verbs is narrower, as illustrated below:

(46)   *Jis*   ***tur-ėjo***   *gauti*   *mūsų*   *žinutę.*
       he   have-PST.3   receive.INF   our   message
       'He must have received our message'

(47)   *Jis*   ***galbūt/turbūt/greičiausiai/veikiausiai***   *gav-o*
       he   maybe/very likely/probably/certainly   receive-PST.3
       mūsų   *žinutę.*
       our   message
       'He probably received our message'

The Lithuanian modal verb *turėti* 'have to, must' usually encodes epistemic necessity (Holvoet 2009, 200), whereas a wide array of modal adverbials available in the language gives speakers/writers a chance to indicate their confidence (or lack of confidence) in the truth of the proposition expressed. In (47) the speaker/writer may entertain doubts with *galbūt* 'maybe' or show his/her rather strong commitment to the statement by using *greičiausiai/veikiausiai* 'most probably' (see Usonienė 2007).

The linguistic units in question (*tikriausiai/greičiausiai/veikiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly') are morphologically marked as

adverbs, *i.e.* they have the most productive adverb forming suffix – *(i)ai* (Ambrazas 1997, 378). They are used to express high probability, *i.e.* epistemic necessity. The paraphrase for epistemic necessity would be 'It is necessarily the case that…' (Palmer 2001, 7):

(48) *Jis **tikriausiai/greičiausiai/veikiausiai** mirė.*
    ● Paraphrase → '**It is necessarily the case that** he is dead'.

Non-perception based adverbials *tikriausiai/greičiausiai/veikiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' by default mark the speaker's/ writer's strong commitment to the truth of proposition:

(49) LT-orig: *Anksčiau ar vėliau Šventaragis turėtų viską sužinoti, jis **neabejotinai** subręstų tiems klausimams, kaip kad subrendau aš.*
    EN-trans: *Sooner or later Šventaragis would have to learn everything; he **undoubtedly** would eventually mature to those questions, just as I had.*

(50) LT-orig: *Šis nužudymas **greičiausiai** sukels dar daugiau abejonių.*
    EN-trans: *This murder **most probably** will raise many more doubts.*

A similar argument regarding some of the Polish adverbials is given in Wiemer (2006, 60):

> *<…> the lack of indication of any specific source of the respective epistemic state (attitude) is the reason for which epistemic adverbs or particles like przypuszczalnie 'presumably', prawdopodobnie 'probably', chyba 'possibly, maybe', pewnie 'certainly' or (być) może 'maybe, perhaps' should not be included in the inventory of evidential markers. They refer to inferences and/or assumptions, but beyond the modification of the speaker's epistemic assessment (on a continuum between epistemic possibility and necessity) they do not specify where these inferences arise from; they just refer to mental operations that can be based on anything.*

The translational correspondences of *tikriausiai/greičiausiai/veikiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' show that most frequently they are translated into English by adverbials conveying the speaker's/writer's epistemic commitment to the truth-value of the proposition. The adverbials *probably*, *no doubt*, *undoubtedly*, *most likely*, *certainly*, *surely*, *perhaps*, *quite possibly* make up 54 % of all the TCs. Interestingly, 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:

(51)   LT-orig: *Na tai **tikriausiai** šia suknia vilkėjo elektromagnetinė stebuklinga mergelė Maranela.*
EN-trans: *So, **perhaps** it was the miraculous electromagnetic maiden, Maranela, who wore this gown.*

This might be indicative of the fact that there are language-specific differences in the conceptualisation of likelihood. Moreover, the verbal TCs of the Lithuanian adverbials in question make up 31% of the concordance. Among them feature such verbs as *must*, *seem*, *suppose*. This may suggest that in some contexts, epistemic adverbials in question may have evidential extension or vice versa (also see Section 5):

(52)   LT-orig: *O dabar cipsi ir išsigandęs dairosi tamsoje. Jis **greičiausiai** ir pribudino mane – nuo Tobijo mirties ir Zacharijaus ligos miegu labai jautriai.*
EN-trans: *And now he is fretting, peering into the darkness. He **must have awakened** me – since Tobias' death and his illness, I sleep very lightly.*

The non-perception based epistemic adverbials *tikriausiai*, *veikiausiai* and *greičiausiai* 'most probably' may be prone to evidential extension in certain contexts. Their interpretation is extremely context sensitive when one deals with perception based evidence:

(53)   LT-orig: *Nuotraukoje – kaulėto veido vyras, **veikiausiai** ne lietuvis.*
EN-trans: *In the photograph there's a bony-faced man, **probably** not a Lithuanian.*

In example (53) the speaker/writer makes a judgement based on some perceptual evidence available, namely, the photo of a man shows some of his features that are typically non-Lithuanian. Perception-based evidence yielding evidential extension of these adverbials mainly prevails in fiction. In academic prose and news discourse, conceptual evidence underlying the inferences is more common.

7 Preliminary conclusions

The current study focused on the functions and distribution of evidential and epistemic adverbials in Lithuanian across different types of discourse (fiction, academic discourse and newspaper discourse). Overall frequencies of the adverbials in different types of discourse show that perception-based markers are more dominant than non-perception based ones, which highlights the importance of perception in discourse. The distributional differences of the adverbials are found in fiction, at least partially representing spoken discourse, and news and academic discourse.

The perception-based adverbials, except for *akivaizdžiai* 'evidently' in fiction and news discourse, function more frequently as manner adverbials rather than evidential sentence adverbials or show semantic ambiguity between the manner and evidential use and can be regarded as "semantic blends" (Hasselgård 2010). The non-perception based adverbials – *tikriausiai/greičiausiai/veikiausiai* 'most probably', *būtinai* 'necessarily' and *neabejotinai* 'undoubtedly' – are the primary adverbial markers of epistemic necessity in Lithuanian; the only marker that can function as an adverbial of manner is *greičiausiai* 'most probably', but it is not frequent in this function.

The sentence adverbials originally deriving from the source domain of perception display evidential (inferential) interpretation. They denote inferences drawn from external sensory evidence or internal evidence. The feature that sets apart the inferential perception-based adverbials is the degree of epistemic commitment. *Matyt* 'apparently, evidently' and *regis* 'seemingly' reveal some doubt concerning the truth value of the proposition, triggered by insufficient or less reliable sources of evidence, whereas *akivaizdžiai* 'evidently', *aiškiai* 'clearly' and *ryškiai* 'visibly, clearly' are used in emphatic contexts conveying strong epistemic commitment. Thus the perception-based adverbials expressing some doubt make the speaker's/writer's argumentation more cautious, whereas adverbials conveying certainty, supported by external sensory evidence or internal evidence, strengthen the validity of the proposition. The non-perception based epistemic adverbials do not show evidential extensions to any great extent. They are used as markers of high probability reinforcing the speaker's/writer's position.

The analysis of the translational paradigms seems to offer proof to support the hypothesis that the distinction between low and high degree of probability might be blurred in Lithuanian (*cf.* Usonienė 2007) and that *tikriausiai* 'most probably' and *matyt* 'apparently, evidently' may cover the whole spectrum of the epistemic scale and are multifunctional. Thus the combination of monolingual and parallel corpora contributes to more effective identification of the functional profile of the markers as is also shown in Simon-Vandenbergen and Aijmer (2007), who resort to translations as a clue to studying multifunctionality and investigating the speaker's/writer's use of modal adverbs.

Acknowledgements

Data sources

CCLL   – Corpus of the Contemporary Lithuanian Language
                      (http://tekstynas.vdu.lt/)
CorALit   – Corpus Academicum Lithuanicum (http://coralit.lt/)
ParaCorp$_{EN \to LT \to EN}$ – Bidirectional Parallel Corpus of English and Lithuanian

List of abbreviations

acad   – academic discourse
CTP(s) – complement taking predicate(s)
EN   – English
f   – normalised frequency
H   – humanities
INF   – infinitive
LT   – Lithuanian
orig   – original
P   – physical sciences
PST   – past tense
T   – technological sciences
TC(s)   – translational correspondence(s)
trans   – translation

References

Aikhenvald, Alexandra Y. 2004. *Evidentiality.* Oxford: Oxford University Press.

Alonso-Almeida, Francisco. 2012. Sentential evidential adverbs and authorial stance in a corpus of English computing articles. *Revista Espanola de Linguistica Aplicada* 25 (1), 15–31.

Ambrazas, Vytautas, ed. 1997. *Lithuanian grammar*. Vilnius: Baltos lankos.

Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad & Edward Finegan, eds. 1999. *Longman grammar of spoken and written English.* London: Longman.

Boye, Kasper & Peter Harder. 2009. Evidentiality: linguistic categories and grammaticalization. *Functions of Language* 16 (1), 9–43.

Boye, Kasper. 2010. Evidence for what? Evidentiality and scope. *Sprachtypologie und Universalienforschung* 63 (4), 290–307.

Boye, Kasper. 2012. *Epistemic meaning: a crosslinguistic and functional-cognitive study*. Berlin: de Gruyter Mouton.

Boye, Kasper. 2016. The expression of epistemic modality. In *The Oxford handbook of modality and mood*. Jan Nuyts & Johan van der Auwera, eds. Oxford: Oxford University Press. 117–140.

Caballero, Rosario & Carita Paradis. 2015. Making sense of sensory perceptions across languages and cultures. *Functions of Language* 22 (1), 1–19.

Carretero, Marta & Juan Rafael Zamorano-Mansilla. 2013. Annotating English adverbials for the categories of epistemic modality and evidentiality. In *English modality: core, periphery and evidentiality*. Juana I. Marín-Arrese, Marta Carretero, Jorge Arús Hita & Johan van der Auwera, eds. Berlin: De Gruyter Mouton. 317–355.

Celle, Agnès. 2009. Hearsay adverbs and modality. In *Modality in English. Theory and description*. Raphael Salkie, Pierre Busuttil & Johan van der Auwera, eds. Berlin: Mouton de Gruyter. 269–293.

Chafe, Wallace. 1986. Evidentiality in English conversation and academic writing. In *Evidentiality: the linguistic coding of epistemology*. Wallace Chafe & Johanna Nichols, eds. Norwood, NJ: Ablex Publishing Corporation. 261–272.

Chojnicka, Joanna. 2012. *Linguistic markers of stance in Latvian parliamentary debates* [PhD dissertation]. Poznań: Zakład Bałtologii. Instytut Językoznawstwa.

Cornillie, Bert. 2009. Evidentiality and epistemic modality: on the close relationship between two different categories. *Functions of Language* 16 (1), 44–62.

Cornillie, Bert. 2010. An interactional approach to epistemic and evidential adverbs in Spanish conversation. In *Linguistic realization of evidentiality in European languages.* Gabriele Diewald & Elena Smirnova, eds. Berlin: Mouton de Gruyter. 309–330.

Cornillie, Bert & Peter Gras. 2015. On the interactional dimensions of evidentials: the case of the Spanish evidential discourse markers. *Discourse Studies* 17 (2), 141–161.

Faller, Martina. 2002. *Semantics and pragmatics of evidentials in Cuzco Quechua* [PhD dissertation]. Stanford: Stanford University.

Gisborne, Nikolas & Jasper Holmes. 2007. A history of English evidential verbs of appearance. *English Language and Linguistics* 11 (1), 1–29.

Hasselgård, Hilde. 2010. *Adjunct adverbials in English*. Cambridge: Cambridge University Press.

Holvoet, Axel & Jūratė Pajėdienė. 2005. Aplinkybės ir jų tipai. [Adverbials and their types]. In *Gramatinių funkcijų tyrimai*. [Studies in grammatical functions]. Axel Holvoet & Rolandas Mikulskas, eds. Vilnius: Lietuvių kalbos institutas. 93–116.

Holvoet, Axel. 2009. Modals in Baltic. In *Modals in the languages of Europe. A reference work*. Björn Hansen & Ferdinand de Haan, eds. Berlin: Mouton de Gruyter. 199–228.

Letuchiy, Alexander. 2010. Syntactic change and shifts in evidential meanings: five Russian units. *Sprachtypologie und Universalienforschung* 63 (4), 358–369.

Marín-Arrese, Juana I. 2007. Commitment and subjectivity in the discourse of opinion columns and leading articles: a corpus study. Special issue: Isabel Alonson

Belmonte, ed. *Different approaches to newspaper opinion discourse. RAEL: Revista Electrónica de Lingüística Aplicada* 1, 82–98.

Marín-Arrese, Juana I. 2009. Commitment and subjectivity in the discourse of a judicial inquiry. In *Modality in English. Theory and description*. Raphael Salkie, Pierre Busuttil & Johan van der Auwera, eds. Berlin, New York: Mouton de Gruyter. 237–268.

Mortensen, Janus. 2006. *Epistemic and evidential sentence adverbials in English and Danish: a comparative study* [PhD dissertation]. Roskilde: Roskilde University.

Nuyts, Jan. 2001. *Epistemic modality, language, and conceptualization: a cognitive-pragmatic perspective*. Amsterdam: John Benjamins.

Nuyts, Jan. 2016. Analyses of the modal meanings. In *The Oxford handbook of modality and mood*. Jan Nuyts & Johan van der Auwera, eds. Oxford: Oxford University Press. 31–49.

Nuyts, Jan. 2017. Evidentiality reconsidered. In *Evidentiality revisited: cognitive grammar, functional and discourse-pragmatic perspectives*. Juana I. Marín Arrese, Gerda Haßler & Marta Carretero, eds. Amsterdam: John Benjamins. 57–83.

Palmer, Frank R. 2001. *Mood and modality* [2nd ed.]. Cambridge: Cambridge University Press.

Plungian, Vladimir A. 2001. The place of evidentiality within the universal grammatical space. *Journal of Pragmatics* 33, 349–357.

Ruskan, Anna. 2012. Evidential adjectives in Lithuanian academic discourse. *Kalbotyra* 64 (3), 103–123.

Ruskan, Anna. 2013. *Nemorfologinio evidencialumo raiška ir turinys lietuvių kalboje: bevardės giminės būdvardžiai ir prieveiksmiai.* [The expression and contents of non-morphological evidentiality in Lithuanian: the case of neuter adjectives and adverbs], (ms.). Humanitarinių mokslų daktaro disertacija [PhD dissertation]. Vilnius: Vilniaus universitetas.

Ruskan, Anna. 2015. Evidential adverbials in Lithuanian: a corpus-based study. *Kalbotyra* 67, 104–130.

Simon-Vandenbergen, Anne-Marie & Karin Aijmer. 2007. *The semantic field of modal certainty. A corpus-based study of English adverbs.* Berlin: Mouton de Gruyter.

Smetona, Antanas & Aurelija Usonienė. 2012. Autoriaus pozicijos adverbialai ir adverbializacija lietuvių mokslo kalboje. [Stance adverbials and adverbialisation in Lithuanian academic discourse]. *Kalbotyra* 64 (3), 124–139.

Squartini, Mario. 2008. Lexical vs. grammatical evidentiality in French and Italian. *Linguistics* 46 (5), 917–947.

Squartini, Mario. 2016. Interactions between modality and other semantic categories. In *The Oxford handbook of modality and mood*. Jan Nuyts & Johan van der Auwera, eds. Oxford: Oxford University Press. 50–67.

Šinkūnienė, Jolanta. 2012. Adverbials as hedging devices in Lithuanian academic discourse: a cross-disciplinary study. In *Multiple perspectives in linguistic research on Baltic languages*. Aurelija Usonienė, Nicole Nau & Ineta Dabašinskienė, eds. Newcastle upon Tyne: Cambridge Scholars Publishing. 137–167.

Šolienė, Audronė. 2012. Epistemic necessity in a parallel corpus: Lithuanian vs. English. In *Multiple perspectives in linguistic research on Baltic languages*. Aurelija Usonienė, Nicole Nau & Ineta Dabašinskienė, eds. Newcastle upon Tyne: Cambridge Scholars Publishing. 10–42.

Šolienė, Audronė. 2015. Multifunctionality of modal markers: Lithuanian epistemic adverbials *gal* and *galbūt* 'perhaps/maybe' vs. their translational correspondences. *Kalbotyra* 67, 155–176.

Traugott, Elizabeth Closs. 1989. On the rise of epistemic meanings in English: an example of subjectification in semantic change. *Language* 65 (1), 31–55.

Tutak, Kinga. 2003. *Leksykalne nieczasownikowe wykładniki modalności epistemicznej w autobiografiach*. [Lexical non-verbal markers of epistemic modality in autobiographies]. Kraków: Księgarnia Akademicka.

Usonienė, Aurelija. 2001. Veiksmažodžio *matyti* komplementų tipai: formos ir reikšmės sąveika. [Complementation of the verb *matyti* 'see': interaction of form and meaning]. *Baltistica* 36 (1), 115–124.

Usonienė, Aurelija. 2003. Extension of meaning: verbs of perception in English and Lithuanian. In *Meaning through language contrast*. Katarzyna M. Jaszczolt & Ken Turner, eds. Amsterdam: John Benjamins. 193–220.

Usonienė, Aurelija. 2007. Degrees of confidence and modal words in Lithuanian. *Lietuvių kalba* 1. Available at: http://www.lietuviukalba.lt. Accessed: 1 July 2017.

Usonienė, Aurelija. 2013. On the morphosyntactic status of complement-taking predicate clauses in Lithuanian. *Acta Linguistica Hafniensia: International Journal of Linguistics* 45 (1), 73–99.

Usonienė, Aurelija. 2015. Non-morphological realizations of evidentiality: the case of parenthetical elements in Lithuanian. In *Contemporary approaches to Baltic linguistics*. Peter Arkadiev, Axel Holvoet & Björn Wiemer, eds. Berlin: Mouton de Gruyter. 437–463.

Usonienė, Aurelija. 2016. *Reikšmės pasaulis: tekstynais paremti semantiniai kalbų tyrimai*. [The world of meaning: corpus-based semantic studies of language]. Vilnius: Akademinė leidyba.

Usonienė, Aurelija & Audronė Šolienė. 2010. Choice of strategies in realizations of epistemic possibility in English and Lithuanian: a corpus-based study. *International Journal of Corpus Linguistics* 15 (2), 291–316.

Usonienė, Aurelija & Jolanta Šinkūnienė. 2013. A cross-linguistic look at the multifunctionality of the English verb *seem*. In *English modality: core, periphery*

and evidentiality. Juana I. Marín-Arrese, Marta Carretero, Jorge Arús Hita & Johan van der Auwera, eds. Berlin: De Gruyter Mouton. 281–316.

Usonienė, Aurelija & Audronė Šolienė [forthcoming]. Reportive evidentials in English and Lithuanian: what kind of correspondence? In *Cross-linguistic correspondences: from lexis to genre*. Thomas Egan & Hildegunn Dirdal, eds. Amsterdam: John Benjamins.

Wiemer, Björn. 2006. Particles, parentheticals, conjunctions and prepositions as evidentiality markers in contemporary Polish (A first exploratory study). *Studies in Polish Linguistics* 3, 5–67.

Wiemer, Björn. 2007. Lexical markers of evidentiality in Lithuanian. *Rivista di Linguistica* 19 (1), 173–208.

Wiemer, Björn. 2010. Lithuanian *esą* - a heterosemic reportive marker in its contemporary stage. *Baltic Linguistics* 1, 245–308.

Wiemer, Björn & Veronica Kampf. 2012. On conditions instantiating tip effects of epistemic and evidential meanings in Bulgarian. *Slověne*: *International Journal of Slavic Studies* (2), 5–38.

Wierzbicka, A. 2006. *English: meaning and culture.* Oxford: Oxford University Press.

Willett, Thomas. 1988. A cross-linguistic survey of the grammaticalization of evidentiality. *Studies in Language* 12 (1), 51–97.

Submitted July 30, 2017