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## TAKING STANCE ACROSS LANGUAGES: HIGH-VALUE MODAL VERBS OF EPISTEMIC NECESSITY AND INFERENCE IN ENGLISH AND POLISH LINGUISTICS RESEARCH ARTICLES

Defined as “the ways the writers project themselves into their texts to communicate their integrity, credibility, involvement, and a relationship to their subject matter and their readers” (Hyland, 1999: 101), stance can be expressed by a variety of means, including, among others, hedges, emphatics and attitude markers. The use of these elements – their frequency, distribution and variety in different text types – is language and culture-specific. This paper focuses on selected exponents of stance by which speakers of English and Polish express their assessment of the truth of a proposition and their commitment to this assessment, and more specifically, on high-value modal verbs of epistemic necessity and inference used in linguistics research articles in these two languages. The analysis is based on two corpora of research articles published in the years 2001–2006 in English- and Polish-language linguistics-related journals, each corpus consisting of 200 complete articles. The analysis focuses on the following modal and quasi-modal verbs: MUST, NEED, HAVE (GOT) TO (Eng.) and MUSIEĆ (Pl.) in an attempt to discuss their use in one specific genre and discipline but across languages and cultures. The results indicate that, compared to the English necessity and inference cluster, Polish MUST is heavily underrepresented, but that the proportion of epistemic and root meanings as well as the ratio of epistemic proper and indirect evidential senses is similar across the two studied corpora. It is also apparent that for the English data the relative frequency of individual modal expressions is different from that reported from non-academic varieties of English, and that the proportion of epistemic and root meanings for these modals is different in the studied sample and in non-academic contexts.

### **1. Introduction**

Linguistic interest in academic communication, whose beginnings Swales (2001) places in the early sixties of the previous century, is marked by a transition from the traditional view, which placed emphasis on the transparency, objectivity and impersonality

of language used for reporting research, to the rhetorical approach, which sees academic communication as an interpersonal activity that goes beyond passing information about facts and involves taking stance towards a problem, anticipating criticism, negotiating concepts and, finally, persuading the reader of the cogency of one's argumentation. It is with respect to these interpersonal meanings involved in academic communication that important differences have been observed across languages, disciplines and genres, documented, among many others, by Clyne (1987), Mauranen (1993), Duszak (1994, 1998), Fox (1994), Ventola and Mauranen (1996), Dahl (2004), Martín-Martín and Burgess (2004), Fløttum et al. (2006), Hyland and Bondi (2006), and Carter-Thomas and Rowley-Jolivet (2008).

Stance, the personal component of meaning conveyed alongside the propositional content, involves "the ways the writers project themselves into their texts to communicate their integrity, credibility, involvement, and a relationship to their subject matter and their readers" (Hyland, 1999: 101). It poses definitional problems because, on the one hand, the personal element in discourse has been referred to by different authors in a variety of ways (e.g., *evaluation* in Thompson and Hunston, 1999 and *appraisal* in Martin, 1999) and, on the other, because the same term is sometimes used to refer to phenomena that only partly overlap (Englebretson, 2007). According to Hyland, stance can be viewed under three labels, with *affect* concerning personal attitudes towards what is being said, *relation* reflecting the interaction between the writer and the reader, and *evidentiality* relaying "the writer's expressed commitment to the truth of the propositions he or she presents, their reliability, strength and precision, or the strategic manipulation of these features for interpersonal goals" (Hyland, 1999: 101).<sup>1</sup> Stance can be expressed by a variety of resources, including, as Hyland (2005, 2008) notes, hedges, emphatics (boosters), attitude markers, and instances of self-mention. This paper is concerned with those aspects of stance which Hyland calls *evidentiality*, Conrad and Biber (1999) refer to as *epistemic stance* and White (2003) subsumes under *engagement*, one of the three domains of appraisal. More specifically, it focuses on a selected category of emphatics, which, compared to such resources for expressing stance as hedges or personal pronouns (e.g., Salager-Meyer, 1994; Hyland, 1996; Crompton, 1997; Kuo, 1999; Lewin, 2005; Lyda, 2007) appear to have received less attention in linguistic research (but see Koutsantoni, 2004 and her discussion of certainty markers in scientific research articles; see also Warchał, 2007, 2008, 2009). The analysis is limited to the high-value (quasi)modal verbs of epistemic necessity and inference (Coates, 1983) in an attempt to study their use in one discipline-defined genre of academic writing, linguistics research article, in two languages, English and Polish, and is preceded by a brief introduction to epistemic modality systems in these two languages.

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<sup>1</sup> Evidentiality as a component of stance should not be conflated with evidentiality as a modal category, which refers to the sources of knowledge on which speakers rely when making a statement and evaluating its validity (Dendale and Tasmowski, 2001).

## 2. Epistemic modality markers in English and in Polish

Epistemic modality refers to the degree of confidence the speaker has in the truthfulness of the statement s/he is making and to the personal assessment of its probability or credibility (Palmer, 1979). Evidentiality, often treated as its subdomain, is concerned with the evidence the speaker has to make the claim and assess its validity. The type of evidence makes it possible to classify evidentials into direct, if the speaker has actually observed the facts, and indirect (Dendale and Tasmowski, 2001), the latter further subdivided into reported evidentials, if the speaker bases his or her claim on other people's reports about facts, and inferentials, if the speaker "has (directly) observed another situation which s/he interprets as pointing towards P . . . , or s/he simply knows something which suggests that P is probable" (Plungian, 2001: 352).

The epistemic modality system in English is organised along an axis formed by three modal auxiliaries: *MAY* indicating possibility, *WILL* referring to "reasonable judgment" and *MUST* relaying "the only possible judgment" (Palmer, 1986: 62; Fig. 1). *MIGHT* and *WOULD* supply tentative forms of the first two, *COULD* is synonymous with epistemic *MAY* and *MIGHT*, *OUGHT TO* and *SHOULD* are close to *MUST* but with "some notion of conditionality" (Palmer, 1986: 63), and quasi-modals *BE BOUND TO* and *HAVE (GOT) TO* resemble *MUST* in expressing epistemic necessity (Coates, 1983). This is also true of *NEED*, the last modal auxiliary to have developed the sense of epistemic necessity (Molencki, 2003), which is mostly found in non-assertive contexts where it expresses negation of the modal predication. Apart from modal verbs, epistemic meaning in English can also be expressed by certain lexical verbs, adjectival and participial constructions, modal adverbs and particles, and nouns referring to various degrees of likelihood (Gavins, 2005).

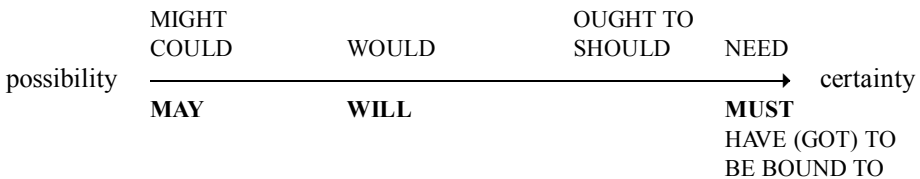


Fig. 1. The epistemic modality system in English:  
modal auxiliaries and quasi-modals

In contrast to English, where modal auxiliaries form a well-defined and complex subsystem of language, in Polish their lexical counterparts cannot be seen as a clearly delineated class of verbs sharing specific properties (Kakietek, 1991: 96). Epistemic proper modals in Polish are polarised between *MÓC* 'may' indicating possibility, and *MUSIEĆ* 'must' imparting the highest degree of certainty and personal commitment, with *POWINIEN* 'should' relaying a slightly lower degree of epistemic necessity, and *MIEĆ*, in the deontic sense corresponding to 'be to' and epistemically close to 'reportedly', distancing the speaker from the proposition and indicating a certain degree of

doubt (Ligara, 1997: 126, 131; Fig. 2). Epistemic stance in Polish can also be marked by modal adverbs and particles, adjectival and participial constructions, predicatives, modal lexical verbs, nouns imparting various degrees of likelihood, and morphological/grammatical markers, such as future tense and conditional forms (Rytel, 1982: 41–42).

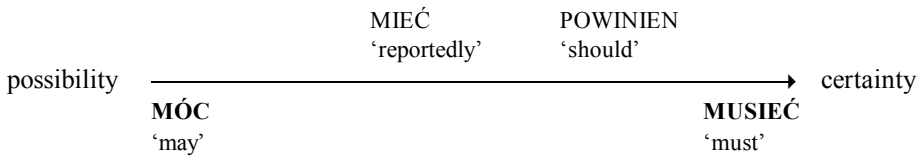


Fig. 2. Epistemic proper modal verbs in Polish

In further analysis we will be concerned with the strong pole of the epistemic necessity/inference cluster as proposed by Coates (1983), that is with modal auxiliaries MUST and NEED and quasi-modals HAVE (GOT) TO and BE BOUND TO, and with their Polish modal counterpart MUSIEĆ.

### 3. Modal verbs of epistemic necessity and inference in linguistics research articles

#### 3.1. Corpus and procedure

The analysis was based on two corpora of linguistics research articles (LRA), each consisting of 200 papers published in the years 2001–2006 in linguistics-related peer-reviewed journals, with each journal contributing at most 40 complete articles of varied length. The English corpus comprised electronically available articles published in five internationally recognised journals: *Journal of Pragmatics*, *Language and Communication*, *Language Sciences*, *Lingua*, and *Linguistics and Philosophy*. The total number of words in the corpus was 2.4 million. It was assumed that the authors had a native-like command of English on the basis of their affiliation (in the case of multi-author papers, affiliation of the first two authors was taken into consideration) and the strict reviewing systems of the journals.

The Polish corpus comprised research articles published in the following journals (all of them included in the 2003 list of Polish scientific journals issued by the Polish Committee for Scientific Research): *Acta Baltico-Slavica*, *Biuletyn Polskiego Towarzystwa Językoznawczego*, *Etnolingwistyka*, *Język a Kultura*, *Onomastica*, *Poradnik Językowy*, *Slavia Meridionalis*, and *Studia z Filologii Polskiej i Słowiańskiej*. The total number of words in the corpus was 1 million. The first two authors of each article were checked for affiliation at Polish academic institutions. Only a small fraction of the material was available in the electronic form at the time when the corpus was being compiled, so most of the Polish texts were scanned with HP Scanjet G3010.

The corpora were scanned with *Oxford WordSmith Tools 5.0* for Windows (Scott, 2008) for occurrences of MUST, HAVE (GOT) TO, modal auxiliary NEED, BE BOUND TO and MUSIEĆ (with inflected forms). The obtained results were saved as 160 character strings and manually filtered to remove the occurrences of search words in examples and eliminate accidental records. Next, each file was accessed to remove direct quotations and to establish the prevailing modality type: root or epistemic. Further study was limited to the epistemic records, which were identified as epistemic proper, inferred evidential or reported evidential (quotative). The results of this analysis are presented in the next sections.

### 3.2. *Strong (quasi)modals of epistemic necessity and inference in the English data*

On the whole, 2,207 instances of MUST, HAVE TO, NEED and BE BOUND TO were recorded in the corpus, among them 1739 represented root modality, 334 were identified as epistemic, and 134 cases remained ambiguous. HAVE GOT TO was not attested in the data. Compared to the results reported by Collins (2009) for the use of these (quasi)modals in the British component of the *International Corpus of English (ICE-GB)*, the figures obtained for the LRA corpus are smaller by half (2,309 for ICE-GB and 920 for LRA, normalised to 1 million words), and the relative frequency of epistemic meanings is somewhat higher in our corpus (10% in ICE-GB and 15% in LRA; Table 1).<sup>2</sup>

Table 1. MUST, HAVE TO, NEED and BE BOUND TO in linguistics research articles and in ICE-GB. Data for ICE-GB come from Collins (2009). Figures in parentheses are normalised to 1 million words

	MUST		HAVE TO		NEED		BE BOUND TO		ALL	
	total	epistemic	total	epistemic	total	epistemic	total	epistemic	total	epistemic
LRA	1,549 (645)	250 (104)	478 (199)	16 (7)	171 (71)	60 (25)	9 (4)	8 (3)	2,207 (920)	334 (139)
ICE-GB	(675)	(216)	(1,244+339 HAVE GOT TO)	(2+2 HAVE GOT TO)	(34)	(8)	(17)	(12)	(2,309)	(240)

MUST can express either root meaning of obligation and necessity or epistemic meaning of logical necessity and confident inference (Coates, 1983: 31). It belongs to the strong forms of the necessity/obligation set of modal expressions (Collins, 2009: 33). In its epistemic sense, it can be paraphrased as ‘the only conclusion is that...’ (Palmer, 1988: 122). Of the 1,549 records of MUST in the LRA corpus, 250 were iden-

<sup>2</sup> All data for ICE-GB are taken from Collins (2009).

tified as epistemic, which amounts to 16% of the findings (Fig. 3). This result contrasts with 32% of epistemic uses of this modal verb in ICE-GB and 31% reported by Coates (1983) for the written component of the Lancaster corpus. It is also lower than the findings obtained by Keck and Biber (2004) for academic textbooks, where the epistemic uses accounted for 21% of MUST records in this component of the T2K-SWAL Corpus.

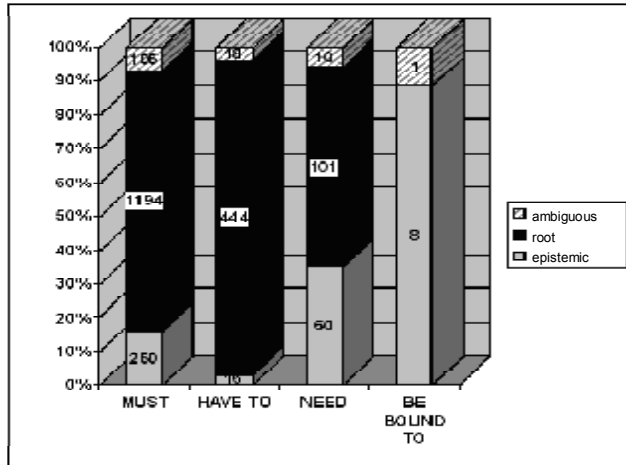


Fig. 3. Relative frequency of epistemic occurrences for each search word in the English data

Among the epistemic records of MUST, 38% were identified as epistemic proper (Ex. 1), 45% as inferred evidentials (Ex. 2), and 17% as reported evidentials (Ex. 3; Fig. 4).

- (1) *The price **it must have cost** made it a perfectly appropriate return present, orei, but it seems to have failed as a marker of artistic taste, solidarity and intimacy.* (LC2004-10)
- (2) *For example, in (15a), a bound variable reading is possible, so that **the indirect object must have scope over**, and hence c-command, the adjunct.* (L2005-4)
- (3) *Dummett argues that there must exist in natural language this kind of negation for since "silence is agreement" in certain contexts, **one must have** some way of articulating non-agreement.* (JP2005-8)

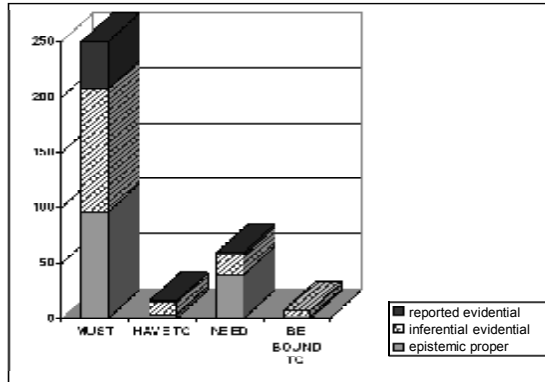


Fig. 4. Epistemic proper, inferred evidential and reported evidential uses of strong (quasi)modals of necessity and inference in linguistics research articles

With regard to HAVE TO, in its commonest use it expresses obligation which is not imposed by the speaker (Palmer, 1988: 129). It provides suppletive forms to MUST and, if negated, expresses lack of obligation (in contrast to MUST, which negates the main predication). Both Palmer (1988) and Coates (1983) note that it is only rarely used epistemically, observation confirmed also by the present data. On the whole, HAVE TO was rarely recorded in the LRA corpus, where it was more than three times outnumbered by the modal auxiliary MUST, which reverses the proportion between the two verbs reported by Collins (2009) from ICE-GB (Table 1). Of the 478 records, only 16 were identified as epistemic, which amounts to mere 3% of the findings (Fig. 3). It is worth noting, though, that this proportion is still higher than the results obtained for ICE-GB (both with and without HAVE GOT TO records).

Among the 16 epistemic cases of HAVE TO attested, 4 were classified as epistemic proper (Ex. 4), 11 as inferred evidential (Ex. 5), and only one as reported evidential (Ex. 6; Fig. 4).

- (4) *A whole family of different kinds of fallacies can be involved with bad arguments of this kind, but **primary among them has to be** the straw man fallacy. (JP2006-3)*
- (5) *Where pronouns preceding the verb were concerned, the change was a slower one, and seems to have evolved through analogy to what happened to nouns; since pronouns retain some case marking into modern English, **there had to be** a more or less conscious change from dative to nominative endings. (LC2002-3)*
- (6) *Adding to the mystery is the fact that it is unclear how such tacit knowledge of grammar could be appropriately integrated with other beliefs that we hold. **These true beliefs would have to be** of a special kind, “inferentially isolated” from our other beliefs (Devitt and Sterelny, 1999). (LC2002-5)*

The modal auxiliary NEED expresses root and epistemic necessity; like HAVE TO, it provides negation of the modal predication for declarative sentences with MUST,

which, as Coates (1983) points out, is its main function. This observation was confirmed also in the LRA corpus, where negated forms (with the negative particle *not*, negative adverb *never* and negative conjunctions *neither* and *nor*) comprised 82% of the findings, and most of the remaining cases concurred with the adverb *only*. The modal NEED is rarely attested; its frequency in the LRA corpus tallies with that reported by Coates (1983) for the Lancaster corpus, but the figures cited by Collins (2009) for ICE-GB are smaller by half (Table 1). The proportion of epistemic records also differs in these three corpora, ranging from 13% reported by Coates (1983), through 24% identified in ICE-GB (Collins, 2009: 57), to 35% in the present corpus of research articles, where among 171 records, epistemic meanings were identified in 60 cases (Fig. 3).

Further analysis of this modal auxiliary in the examined corpus of linguistics research articles shows that, unlike in MUST and HAVE TO, where inferred evidential meaning prevails, NEED is used most often to convey proper epistemic meaning (Ex. 7), identified in 67% of cases, followed by inferred evidentials in 28% (Ex. 8) and reported evidentials in 5% of the records (Ex. 9; Fig. 4).

- (7) *Despite what is usually assumed, **accommodation need not involve** a pretense that something was part of the common ground all along; **it need not involve** any divergence between what is presupposed and what is believed to be common belief (at the appropriate time).* (LP2002-13)
- (8) *For these reasons, **the fact that children are capable of making changes in sentence structure need not be** an indication that they would make the prosodic changes typical of infant-directed speech as well.* (LC2003-1)
- (9) *I am grateful to David Denison for pointing out (personal communication) that **the modern version need not imply** a negative at all, but something like: ‘this is something; and that thing is trickery’.* (LS2002-5)

BE BOUND TO is a rare quasi-modal item that expresses strong modality. As noted by Palmer (1988: 123), it is “almost always to be interpreted epistemically,” and if it is, it is said to carry a sense of inevitability rather than conclusiveness (Collins, 2009: 87–88). Rare as it proved to be in the Lancaster corpus (Coates, 1983:43) and in ICE-GB (Collins, 2009: 87), it was still more rarely attested in the LRA corpus, with only 9 findings, 8 of which proved epistemic (Table 1, Fig. 3). Of these, 2 were classified as epistemic proper (Ex. 10) and 6 as inferred evidentials (Ex. 11), with no reported evidential uses attested (Fig. 4).

- (10) *Of course, **a de-contextualized analysis of the meaning of a metaphor is bound to leave** something wanting.* (JP2005-5)
- (11) *If facts are simply true propositions, **justified true beliefs are bound to be** justified beliefs of facts, of course.* (LP2002-10)



3.3. MUSIEĆ in the Polish data

According to the PWN dictionary of the Polish language (*Słownik języka polskiego*, 1994), MUSIEĆ expresses a state of being subject to some necessity or obligation or, epistemically, indicates probability that the action expressed by the lexical verb has taken or is taking place. As a marker of epistemic modality, it imparts high degrees of confidence in the truth of the proposition at the time of speaking (Ligara, 1997: 96). Unlike English MUST, it occurs in a variety of forms, with morphological markers of person, number, gender, tense and mood. For this reason, it is equivalent to MUST, MUST HAVE + V-en, NEED (also negated), NEED HAVE + V-en (also negated), and HAVE TO (including inflected forms, negation and accompanying modal auxiliaries).

In the Polish corpus of linguistics research articles, MUSIEĆ was recorded 256 times, which is 3.6 times less frequently than the English strong (quasi)modals (Table 2). Of these, only 37 occurrences were classified as epistemic. Root meaning was identified in 207 cases, with 12 instances remaining unresolved. In spite of the massive difference in the overall frequency between Polish and English data, the emerging picture is strikingly similar to epistemic and root proportions established for the English corpus, as shown in Fig. 5. In the Polish data, epistemic uses of MUST comprise 14% of the records, in the English sample, they amount to 15% of the total findings for strong (quasi)modals examined. Root meanings account for 81% and 79% for the Polish and English corpus respectively.

Table 2. MUSIEĆ and English strong (quasi)modals of epistemic necessity and inference in LRA corpus. Figures in parentheses are normalised to 1 million words

	MUSIEĆ		MUST, HAVE TO, NEED, BE BOUND TO	
	total	epistemic	total	epistemic
LRA	(256)	(37)	2,207 (920)	334 (139)

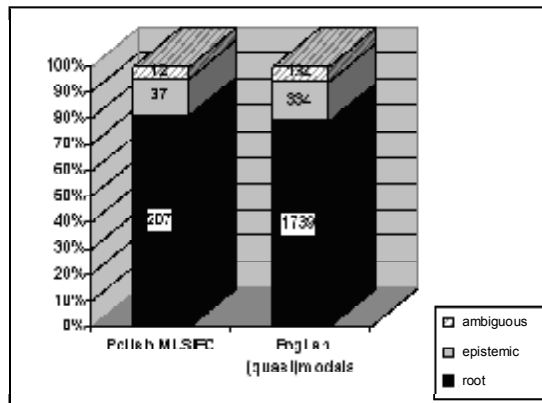


Fig. 5. Root and epistemic meanings in Polish and English data

Further analysis of the small batch of epistemic uses of MUSIEĆ shows that of the 37 cases, 16 are epistemic proper (Ex. 12) and the remaining 21 inferred evidential (Ex. 13), with not a single instance of reported evidential use of MUSIEĆ attested in the corpus (Fig. 6a). By contrast, in the English data reported evidentials accounted for 14% of the epistemic uses of the (quasi)modals discussed. In spite of this difference, the two samples display the same proportion of indirect evidential senses and proper epistemic uses: in both 43% of records were identified as proper epistemic, while the remaining 57% represented indirect evidentials (Fig. 6b).

- (12) *Informacja o tym, jaki przypadek inherentny przypisywany jest przez dany czasownik bądź przyimek, musi być zawarta w słowniku mentalnym.* ‘Information concerning which inherent case is attributed by a given verb or preposition must be included in the mental lexicon.’ (PORJ2003-1)
- (13) *Wywołać to musiało tendencję do ujednoczenia postaci sufiksu po tych spółgłoskach, krzyżując się z dążeniami hiperyzacyjnymi.* ‘It must have resulted in a tendency to make the form of this suffix more uniform after these consonants, which coincided with hyperisation processes.’ (ON2002-5)

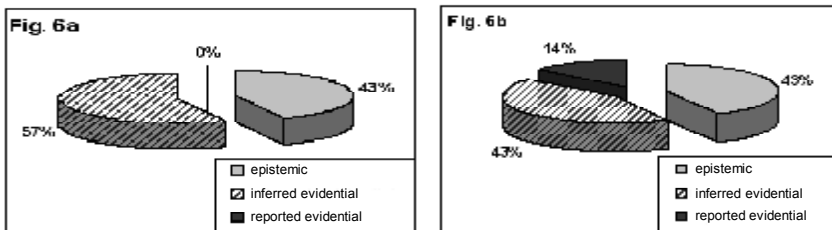


Fig. 6. Epistemic proper, inferred evidential and reported evidential modal meanings in the LRA corpus; a – Polish data, b – English data

#### 4. Discussion and concluding remarks

It has been the aim of this paper to show the way in which one category of stance markers, strong (quasi)modals of epistemic necessity and inference, is used by authors of English and Polish research articles in linguistics, writing in the language of their habitual or daily professional use. The first important difference between the data coming from the two analysed corpora regards the frequency of occurrence. In the English corpus, 2207 records of MUST, HAVE TO, NEED and BE BOUND TO were noted, which, normalised to 1 million words, amounts to 920 hitwords. This, compared with the results obtained for the Polish data, where MUST was recorded 256 times in a 1 million word corpus, gives a ratio of 3.6 : 1. With considerations limited to the epistemic uses of the search words in both corpora, a similar picture emerges, with a ratio of 3.7 : 1 (Table 2). The difference between the two sets of data may suggest that Polish academic authors are more reluctant to encode high degrees of personal

commitment and certainty and more likely to avoid strong markers of epistemic stance than their English colleagues. An alternative explanation might be that Polish authors favour other markers of stance, e.g. adverbs, rather than modal verbs to express strong commitment to a claim, which results in *MUSIEĆ* being underrepresented. Which of the two is correct may become clearer after the use of other high-value markers of epistemic modality in these two corpora is studied.

Apart from this major point of difference, there were also similarities noted between the use of strong (quasi)modals. Firstly, the percentage of epistemic readings, which in English data comprised 15% and in the Polish data 14% of the cases, was comparable (Fig. 5). It is worth emphasising that in ICE-GB, epistemic meaning was identified in only 10% of the cases, possibly suggesting that in research articles there is a stronger need to mark epistemic certainty for the sake of argumentation regardless of the language. Unfortunately, for now the author is not aware of any reports on the frequency of epistemic *MUSIEĆ* in other genres and registers of Polish to validate this hypothesis.

Secondly, both corpora manifest a similar ratio of epistemic proper senses against indirect evidentials (Fig. 6). Indirect evidentials alleviate the responsibility the speaker bears for the truthfulness and accuracy of a statement. Reported evidentials attribute the degree of certainty expressed by the modal verb to an external authority and in this way reduce the speaker's involvement. By contrast, inferred evidentials provide a justification for the speaker's claim, thus reducing its authoritativeness. Although in the Polish corpus no reported evidentials were attested, the proportion of epistemic proper and indirect evidential meanings (inferred and reported) is the same in Polish and in English (43% and 57% for epistemic proper and indirect evidential respectively). This may suggest that the need to reduce the speaker's commitment to a claim by sharing the responsibility for it with another author (reported evidentials) or with the reader (inferred evidentials), who can evaluate the evidence presented in support of the claim on their own, is also genre-related and does not have to reflect differences between the two languages.

Further questions arise with regard to the results generated for the English corpus (Fig. 4). It is worth noting that the contribution of particular search words in the LRA corpus and ICE-GB was markedly different (Collins, 2009). If compared with the ICE-GB results, the number of *HAVE TO* records in the LRA corpus is surprisingly small. Collins (2009) observes that in ICE-GB, *HAVE TO* actually outnumbered other (quasi)modals of necessity and inference (although he notes that with regard to the epistemic meaning, *MUST* still comes first). In the present study it falls far behind *MUST* and *NEED*. It seems then that the function of *HAVE TO* in research articles, especially as contrasted with *MUST*, calls for a more detailed analysis. The same holds true for the modal auxiliary *NEED*, which was found to be considerably more frequent in the LRA corpus than in ICE-GB. If we consider the fact that *NEED* prefers negative contexts, we might be tempted to hypothesise that the rise in the number of *NEED* records in research articles reflects the necessity to question earlier findings, to show deficiencies of previous studies before a new claim is proposed, or to signal limitations of the reported research. This, however, must remain a guess before a more de-

tailed study is done into the contexts in which modal NEED appears in academic written discourse.

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