



Intercultural and interdisciplinary variation in the use of epistemic lexical verbs in linguistics and economics research articles

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ABSTRACT

This paper explores rhetorical variation in academic discourse, focusing on the choice and use of epistemic lexical verbs in linguistics and economics research articles written in English by Anglophone and Czech scholars. Drawing on Hyland's (1998a) taxonomy of epistemic lexical verbs, the contrastive analysis combines quantitative and qualitative methods to consider how rhetorical variation is affected by both the culture of the discipline and the culture of the writer. The investigation is carried out on a specialised corpus comprising 48 research articles (12 per discipline and cultural background) published in international and national (Czech) academic journals. Apart from establishing the frequency of occurrence of judgement and evidential epistemic lexical verbs, the analysis considers the immediate co-text of the target items and the distribution of different types of epistemic lexical verbs across the rhetorical sections of research articles. The results of the investigation indicate that while the lower frequency of use of epistemic lexical verbs in research articles by Czech writers is due to intercultural variation, the preferences towards the use of specific types of epistemic lexical verbs, the clusters they form, and their distribution across the rhetorical sections of research articles seem to reflect both cultural and disciplinary considerations. These findings suggest that culture and discipline seem to govern different aspects of rhetorical choices in academic discourse.

KEYWORDS

epistemic lexical verbs, persuasion, intercultural variation, disciplinary variation, research articles

1. INTRODUCTION

The dominant position of English as the lingua franca of globalized academia has profoundly affected the way academic knowledge and discourse are construed and disseminated. While facilitating knowledge exchange and scholarly networking, the predominance of English has forced non-Anglophone researchers to adhere at least to some extent to the dominant Anglophone academic writing conventions when they strive to publish their work in an international context. Thus the English-medium academic discourse of non-Anglophone researchers is marked by 'glocal', hybridized rhetorical practices (Pérez-Llantada 2013) merging features of the Anglophone norms and the native language and culture of the writers. Previous research in the field of intercultural rhetoric (e.g. Bennett 2011; Clyne 1987; Dontcheva-Navratilova 2014; 2016; Duzsak 1994; Lorés-Sanz 2011; Mauranen 1993; Yakhontova 2006) has provided convincing evidence for the development of this process suggesting that we are witnessing the emergence of "alternative academic written Englishes" (Mauranen, Pérez-Llantada and Swales 2010: 647), i.e. variants of academic English used as academic lingua franca by non-Anglophone authors from a specific linguacultural



background. It is therefore essential to explore these emerging academic Englishes in order to raise the awareness of expert and novice authors of the existence of intercultural variation in academic writing conventions and thus provide them with a better chance of having their work accepted for publication in an international context.

Yet variation in academic discourse is not only intercultural but also interdisciplinary, as different disciplines have their own specific ways of shaping arguments and constructing knowledge through discourse (e.g. Hyland 2002, 2004, 2008). Disciplinary variation in academic persuasion is associated with the use of rhetorical strategies and language choices established in the discursive practice of a specific disciplinary culture (Swales 1990) which are instrumental in enhancing writer credibility through the construal of the writer's "identity of a person with authority" (Ivanič 1998: 88) and contribute to content reliability through expressing different degrees of commitment to claims and relating new ideas to shared knowledge (cf. Hyland 2008; Livnat 2012).

As an important rhetorical means allowing authors to modify the degree of certainty and commitment they opt for when negotiating their views and claims with the readers, the expression of epistemic modality has been shown to vary significantly across cultural and disciplinary contexts (cf. Dahl 2004; Fløttum et al 2006; Hyland 1998a; Pérez-Llantada 2010; Vold 2006). Despite the growing body of research into intercultural and interdisciplinary variation in the use of epistemic modality markers, very few studies have adopted a doubly contrastive approach to investigate whether culture or discipline is the most important variable in the expression of epistemic modality in academic discourse. This study attempts to fill this gap by exploring intercultural and interdisciplinary variation in the expression of epistemic modality for modelling persuasion in English-medium linguistics and economics research articles by Anglophone (judging by their names and affiliations) and Czech authors.

The investigation focuses on rhetorical variation in the choice and use of epistemic lexical verbs in a specialised corpus of research articles written in English by Anglophone and Czech scholars representing two soft academic disciplines — linguistics and economics. The aim of the investigation is to explore whether the culture of the discipline or the culture of the writer is a more decisive factor affecting rhetorical choices in English-medium academic discourse.

2. EPISTEMIC MODALITY IN ACADEMIC DISCOURSE: EPISTEMIC LEXICAL VERBS

Epistemic modality may be described as 'propositional' modality, as it is "concerned with the truth-value or factual status of the proposition" (Palmer 2001: 24). Thus "any utterance in which the speaker explicitly qualifies his commitment to the truth of the proposition [...] is an epistemically modal, or modalized utterance" (Lyons 1977: 797). Palmer (2001) differentiates two types of propositional modality — epistemic (speculative, deductive and assumptive) and evidential (reported and sensory); however, most linguists (e.g. Bybee and Fleischman 1995; Coates 1983; Huddleston and Pullum 2002) subsume evidential modality into the epistemic category. While I have adopted



the latter approach to the classification of modal meanings, in agreement with Hyland (1998a) and Pérez-Llantada (2010), Palmer's sub-categories of epistemic and evidential modality are used as a basis for the taxonomy of epistemic lexical verbs used in this investigation.

In academic discourse, epistemic modality has a semantic function associated with indicating the source of knowledge, modifying the status of knowledge conveyed, and differentiating facts accepted by the disciplinary community from claims, and a pragmatic function related to engaging with readers in negotiation of meaning and expressing humility and politeness (cf. Hyland 1998a; Myers 1989; Pérez-Llantada 2010; Salager-Meyer 1994; Vold 2006; Warchał 2015; Yang et al. 2014). Intercultural variation in epistemic modality stems from differences in rhetorical conventions across different academic cultures, while disciplinary variation reflects differences in the subject matter, argumentation strategies and rhetorical organisation of research articles. These differences are reflected in preferences towards the use of specific realizations of epistemic modality as well as in the pragmatic and rhetorical functions conveyed by epistemic markers.

Epistemic modality is realised by a wide spectrum of linguistic means comprising modal verbs (e.g. *may, can, must*), epistemic lexical verbs (e.g. *believe, infer, seem*), epistemic adverbials (e.g. *certainly, perhaps, probably*), epistemic adjectives (*certain, doubtful, likely*) and epistemic nouns (e.g. *assumption, probability, view*). This investigation focuses on epistemic lexical verbs as one of the most common devices for the expression of subjective evaluation in academic discourse used to hedge an author's commitment or assertiveness. It adopts Hyland's (1998a) taxonomy of epistemic lexical verbs broadly based on Palmer's (1986) typology of modality in English, which comprises the following categories of epistemic lexical verbs:

Judgement verbs — conveying the appraisal of the speaker of the factive status of events

- speculative verbs — express an opinion qualifying the mode of knowing through various degrees of commitment to the truth of the proposition (e.g. *believe, suggest, think*)
- deductive verbs — express a deduction or conclusion based on inferential or theoretical reasoning (e.g. *infer, deduce, conclude*)

Evidential verbs — indicating the source of knowledge

- quotative — justify opinions and claims on the basis of 'hearsay'/reported evidence mainly from the research literature (e.g. *report, claim, note*)
- sensory — justify opinions and claims by referring to sensory evidence (e.g. *appear, seem, view*)

The specific way in which academic authors combine epistemic judgement and evidential lexical verbs to modulate their commitment to propositions is expected to reflect disciplinary and cultural considerations.



3. CORPUS AND METHOD

This investigation has been carried out on the academic subcorpus of *The Corpus of English and Czech Specialised Discourses (CECSD)*, which comprises 48 single-authored English-medium linguistics and economics research articles published in six linguistics and six economics journals in the period 2006–2016 (four articles per journal). The corpus was subdivided into two subcorpora compiled along the same criteria to ensure their comparability: a linguistics subcorpus including 24 linguistics articles (12 by Anglophone authors and 12 by Czech authors) and an economics subcorpus including 24 economics articles (12 by Anglophone authors and 12 by Czech authors). The research articles by Anglophone scholars were published in high impact international journals, i.e. for the linguistics subcorpus: *Applied Linguistics* (Oxford journals), *Journal of Pragmatics* (Elsevier), and *Discourse & Communication* (SAGE); for the economics subcorpus: *Journal of International Economics* (Elsevier), *Economic Systems* (Elsevier), *Journal of Accounting and Economics* (Elsevier), while the research articles by Czech scholars were published in national journals indexed by SCOPUS and ERIH Plus, i.e. for the linguistics subcorpus: *Linguistica Pragensia* (Charles University, Prague), *Brno Studies in English* (Masaryk University, Brno) and *Discourse and Interaction* (Masaryk University, Brno); for the economics subcorpus: *Economics and Management* (Technical University of Liberec), *Prague Economic Papers* (University of Economics, Prague), *Central European Review of Economic Issues* (Technical University of Ostrava). Obviously, these journals provide different contexts of publication and target different audiences; nevertheless, it is considered that the research articles by Anglophone and Czech authors included in the corpus may be seen as reflecting the conventions of social interaction in the respective disciplinary discourse communities. Table 1 provides an overview of the size and composition of the corpus.

Discipline	Cultural background	No of articles	No of words
Linguistics subcorpus (LING)	Anglophone (ENG)	12	77 000
	Czech (CZENG)	12	57 000
Economics subcorpus (ECON)	Anglophone (ENG)	12	93 000
	Czech (CZENG)	12	62 000
Total		48	289 000

TABLE 1. Composition of the corpus

The research articles in the corpus were coded into rhetorical sections following Swales's (1990, 2004) IMRD framework for the analysis of rhetorical moves in experimental research articles. There were several problems with the coding of rhetorical sections. While the *Introduction* section is clearly identifiable in all texts, several articles do not comprise an explicitly labelled *Methods* section, and the majority of the articles display a merged *Results* and *Discussion* section followed by a final *Conclusion* or *Implications* section. For the purposes of this study, the sections labelled 'Results' or 'Results and discussion' were coded as *Results* section, and the sections labelled



'Conclusion', 'Implications' or any other label broadly corresponding to the moves of the *Discussion* section (Ruyjng and Allison 2003) were coded as *Discussion* sections. This approach differs from that adopted by Hyland (1998a), who coded separately the *Results* section, the *Discussion* section and the merged *Results* and *Discussion* section, which may explain some differences in the reported quantitative data.

The contrastive analysis combines quantitative and qualitative methods and draws on Hyland's (1998a) taxonomy of epistemic lexical verbs to study the frequency of occurrence, patterning and distribution of judgement (speculative and deductive) and evidential (quotative and sensory) epistemic lexical verbs across the rhetorical sections of linguistics and economics research articles. Based on the results of previous results and on the corpus data (some initially targeted verbs like *presume*, *deduce* and *speculate* showed no occurrence in the corpus and therefore were excluded), the following 34 epistemic lexical verbs were subjected to analysis:

- speculative judgement verbs — *argue, believe, consider, doubt, expect, imply, indicate, propose, suggest, suspect, think*
- deductive judgement verbs — *assume, calculate, conclude, deduce, demonstrate, estimate, infer, presume, reason, suppose*
- evidential quotative verbs — *argue, believe, claim, indicate, maintain, note, propose, report, show, suggest*
- evidential sensory verbs — *appear, observe, notice, seem, view*

The frequency-based investigation was carried out using the *SketchEngine* corpus tool to identify the rate of occurrence, patterning and distribution of the target epistemic lexical verbs in the corpus. In agreement with the common procedure in contrastive corpus-based research, the raw frequencies were normalised to frequencies per 10,000 words to neutralise the difference in word-count between the Anglophone and the Czech sub-corpora and to allow for comparison with data reported in previous research. After this, the functions of the target items were checked manually, which served as a basis for a contrastive qualitative analysis of the recurring clusters comprising epistemic lexical verbs focusing on their pragmatic functions and their role in enhancing persuasion in academic discourse.

4. RESULTS AND DISCUSSION

In consonance with previous research indicating discipline as a major variable affecting the expression of epistemic modality (cf. Dahl 2004; Hyland 1998b; Vázquez and Giner 2008), the disciplinary results show substantial divergences (Table 2). The rate of epistemic lexical verbs in my corpus is higher than the rate of 39.9 for biochemical research articles reported in Hyland (1998a) and the rate of 39.03 for legal research reported in Vass (2017), which seems to reflect the argumentative character of linguistics and economics. Although the role of argumentation in the knowledge construction process is prominent in both disciplines, it is economists that tend to adhere to a more fixed text pattern, signal more explicitly what discourse act is be-



ing performed and modulate their level of commitment to the proposition (cf. Dahl 2004; Fløttum et al. 2006). As a result, research articles in the field of economics display a higher rate of evidential lexical verbs than those in the field of linguistics both in the Anglophone and Czech subcorpora. In addition, while both Anglophone and Czech linguists seem to prefer evidence to judgement (59.8/60.5% vs 40.2/39.5%), economics texts in both subcorpora display a higher frequency of epistemic judgement verbs (54.3/51% vs 45.7/49%). This difference is mostly due to the higher frequency of sensory evidence in linguistics research articles (about 25% of all evidential verbs in the linguistics subcorpus and less than 15% in the economics subcorpus). Linguists seem to exploit the potential of the perception verb *seem* to not only code “direct, observation-based source of information” (Fetzer 2014: 341) but also to “encode probability and express more or less certainty” (Aijmer 2009: 65) when modelling their degree of commitment to their statements and claims.

Subcorpus / ELVs	Linguistics				Economics			
	ENG		CZENG		ENG		CZENG	
	n. rate	%	n. rate	%	n. rate	%	n. rate	%
Judgement verbs	21.4	40.2	14.2	39.5	36.1	54.3	28.2	51.0
Evidential verbs	31.9	59.8	21.7	60.5	30.5	45.7	27.1	49.0
Total	53.4	100	35.7	100	66.6	100	55.3	100

TABLE 2. Frequency of epistemic lexical verbs in the sub-corpora (per 10,000 words)

As to the culture variable, the results of the contrastive analysis summarised in Table 2 show that Anglophone scholars use epistemic lexical verbs considerably more frequently than Czech writers both in the linguistics (53.4 vs 35.7) and economics fields (66.6 vs 55.3). There is little divergence in the ratio of evidential and judgement verbs in the Anglophone and Czech sections of the linguistics and economics subcorpora; however, the difference in their rate of occurrence is more prominent in the linguistics subcorpus. This supports the findings of previous research (Dontcheva-Navratilova 2016a) which indicated that Czech linguists generally tend to use fewer hedges and boosters than their Anglophone counterparts. These quantitative differences may be interpreted as indicating intercultural variation reflecting the lower degree of interactiveness typical of Czech academic discourse (Čmejrková and Daneš 1997) and the primarily national context of publication of the research articles, which does not force Czech authors to adhere more consistently to the Anglophone rhetorical conventions marked by a higher degree of reader-awareness and a tendency to lead the reader towards an intended interpretation of the text (cf. Mauranen 1993 on the differences between Anglophone and Finnish economics discourse). However, as Pérez-Llantada’s (2013) analysis of social sciences discourse suggests, when published in the same international impact factor journals, research articles by non-native writers tend to approximate the dominant Anglophone conventions, as in her



corpus the difference in the rate of epistemic lexical verbs in articles by Anglophone authors was only slightly higher (59.8 vs 52.4) than that in English-medium texts by Spanish scholars.

A closer look at the most frequent judgement and evidential verbs used in the corpus (Table 3) reveals many similarities across disciplines and cultures. The existing disciplinary differences in the choice of specific epistemic lexical verbs seem to reflect the more interpretative character of linguistics as opposed to the more quantifiable findings in economics. Thus, while linguists tend to argue more explicitly through the speculative verbs *suggest*, *consider* and *argue* (cf. Fløttum et al. 2006: 238), economists prefer to rely on deductions conveyed by the verbs *indicate*, *estimate*, *calculate* and *imply*. The speculative verb *suggest* is highly frequent in all sub-corpora (apart from CZENG ECON), but *argue* is prominent only in the Anglophone linguistics articles, probably because it conveys a stronger feeling of authorial presence and Czech academic discourse tends towards backgrounding authorial presence. The deductive verbs *estimate* and *calculate* occur only in the economics subcorpus; the high frequency of *calculate* in articles by Czech authors may be explained by “language leakage” (Jenkins 2015), i.e. the influence of the L1, as there is a verb with a similar form in Czech (*kalkulovat*). There is less disciplinary variation in the expression of evidentiality, where *show*, *seem* and *appear* are invariably among the most frequent epistemic verbs. The higher frequency of *show* in the economics texts stems from its potential to refer to previous research and to tables, graphs and equations summarizing research results. While rarely used as an evidential quotative verb in the CZENG subcorpora, *suggest* is often used by Anglophone linguists and economists to refer to previous research, thus opening a dialogue with the readers in which differing viewpoints are recognised and tolerated.

Subcorpus / ELVs	Applied Linguistics		Economics	
	ENG	CZENG	ENG	CZENG
Judgement verbs	argue (6.2) suggest (4.2) assume (2.8) demonstrate (2.2) indicate (1.5)	suggest (2.9) demonstrate (2.5) consider (2.3) expect (1.4) imply (1.4)	suggest (9.8) indicate (7.1) imply (4.0) estimate (3.9) predict (3.22)	calculate (8.2) estimate (5.5) indicate (2.2) assume (1.8) consider (1.8)
Evidential verbs	show (7.8) seem (7.8) argue (6.2) appear (2.8) suggest (2.8)	show (8.1) seem (4.9) view (2.5) appear (1.4) claim (1.2)	show (13.2) appear (6.2) report (3.3) seem (3.0) suggest (2.4)	show (13.2) seem (4.5) conclude (2.1) observe (1.3) appear (1.1)

TABLE 3. Most frequent epistemic lexical verbs in the sub-corpora (per 10,000 words)

As the results of a contrastive analysis of the distribution of epistemic lexical verbs across the rhetorical sections of research articles summarized in Figure 1 show, the texts in the whole corpus seem to follow a similar general tendency: epistemic lexical verbs peak in the *Results* section, where the authors present and interpret the results



of their research and provide evidence for their claims, the lowest rate of epistemic lexical verbs is found in the *Methods* section dealing with the research procedure, while their frequency in *Introductions* and *Discussions* lies between that of the *Results* and *Methods* sections. This tendency was also evidenced by Hyland (1998a) and Pérez-Llantada (2010) in their biomedical discourse corpora; however, since the *Results* and *Discussion* sections in biomedical articles tend to be clearly separated, it is *Discussions* that scored the highest rate of epistemic lexical verbs. Despite these similarities, the results of the investigation indicate the existence of disciplinary and cultural variation. Thus, economics articles display a higher rate of epistemic lexical verbs in all rhetorical sections apart from *Discussions*, where their score is lower than that in linguistics articles. Although Czech authors generally use fewer epistemic markers than their Anglophone counterparts, in *Methods* sections the frequency of epistemic lexical verbs is higher in the CZENG subcorpus.

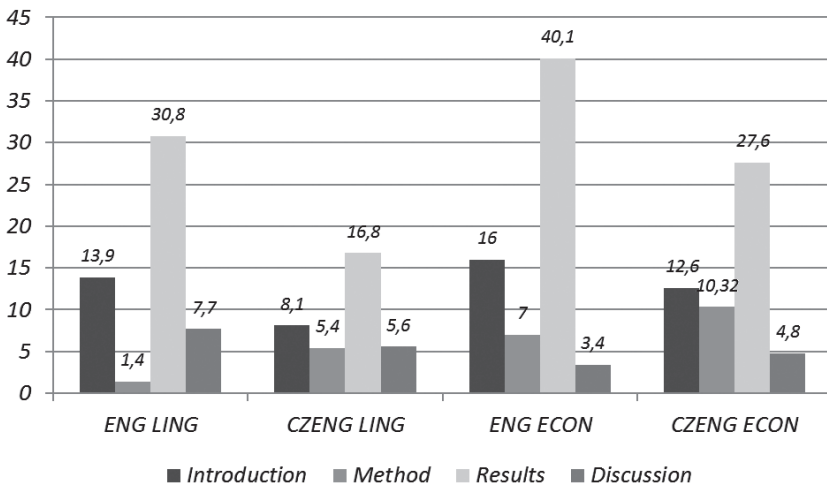


FIGURE 1. Distribution of epistemic lexical verbs across research articles sections

An analysis of the interplay of judgement and evidence in the rhetorical sections of research articles (Table 4) indicates further aspects of variation in the ways scholars strive to achieve persuasion across disciplinary and cultural contexts. The range of judgement frequencies is more significant in the ENG subcorpus (0.6 in *Method* to 11.4 in *Results* for linguistics, 1.5 in *Discussion* to 23.5 in *Results* for economics) than in the CZENG subcorpus (0.5 in *Method* to 10.0 in *Results* for linguistics, 2.3 in *Discussion* to 14.2 in *Results* for economics) and it exceeds the range of evidence frequencies in the ENG (0.7 in *Method* to 19.3 in *Results* for linguistics, 1.9 in *Discussion* to 16.6 in *Results* for economics) and the CZENG (2.1 to 10.0 in *Results* for linguistics, 2.3 in *Discussion* to 13.4 in *Results* for economics) subcorpora. The narrower ranges across sections in the CZENG texts seem to suggest that the rhetorical choices of Czech authors are to a certain extent restricted by the use of English as an academic lingua franca and may be



affected by the input provided in academic writing courses, which typically do not take into account disciplinary variation.

In *Introduction* sections Anglophone authors tend to keep a balance between judgement and evidential verbs, although in the linguistics subcorpus there is a slight preponderance of evidential and, in the economics subcorpus, judgement verbs. In the CZENG subcorpus evidential verbs clearly outnumber judgement verbs, which is primarily due to the considerably lower occurrence of speculative verbs modulating commitment to views and claims. As to disciplinary variation, linguists rely primarily on speculative and quotative verbs to establish a territory, evaluate previous research and occupy a niche, while economists construct arguments by combining speculative and deductive judgements with quotative and sensory evidence. The *Methods* section is marked by considerable disciplinary and cultural variation. In the linguistics subcorpus, the rate of epistemic judgement verbs is similarly low in research articles by Anglophone and Czech linguists; there is, however, a considerable difference in the occurrence of evidential verbs, which is much higher in the CZENG LING than in the ENG LING subcorpus. The results for the economics subcorpus indicate that Anglophone authors show a preference for evidential, mostly quotative verbs and Czech writers tend to rely on deductive judgements.

Corpus		Applied Linguistics		Economics	
		ENG	CZENG	ENG	CZENG
Introduction	<i>Judgement verbs</i>	6.36	2.6	8.3	4.8
	<i>Evidential verbs</i>	7.14	5.4	7.7	7.7
Method	<i>Judgement verbs</i>	0.6	0.5	2.4	6.6
	<i>Evidential verbs</i>	0.7	4.9	5.4	3.7
Results	<i>Judgement verbs</i>	11.4	6.8	23.5	14.2
	<i>Evidential verbs</i>	19.3	10.0	16.6	13.4
Discussion	<i>Judgement verbs</i>	3.0	3.5	1.5	2.6
	<i>Evidential verbs</i>	4.5	2.1	1.9	2.3

TABLE 4. Distribution of epistemic judgement and evidential verbs across research articles sections

Similarly to *Introductions*, the *Results* section displays disciplinary variation concerning a preference towards evidentiality in linguistics and towards judgement in economics. Within the epistemic judgement category, linguists tend to provide more speculative judgements to modulate their claims, while economists rely on deductions. Despite the existing variation in frequency, evidence is primarily quotative in all subcorpora. The markedly lower rate of occurrence of evidential quotative verbs in the CZENG subcorpus is in consonance with the findings of previous research (Dontcheva-Navratilova 2016b) indicating that Czech authors rarely use the optional Reference to previous research (comparison) step of the Commenting on results move in the *Results* section. This also seems to account to a large extent for the existing intercultural difference in *Discussion* in the CZENG LING subcorpus, where the occurrence of both quotative and sensory evidential verbs is lower than in the

ENG LING subcorpus. Apart from this variation, the use of epistemic lexical verbs in *Discussion* sections shows considerable similarities.

An analysis of the immediate co-text of the most prominent epistemic lexical verbs in the corpus provides further details about the disciplinary and cultural preferences in the expression of epistemicity. The most frequent epistemic judgement verbs in the corpus, *suggest*, *argue* and *assume*, pertain to the speculative category, although *suggest* and *argue* can also indicate quotative evidence. There is little disciplinary variation in epistemic lexical verb clusters in *Introductions*. Through the quotative clusters *[author] suggests/argues* Anglophone and, less frequently, Czech authors make tentative judgements in the Establishing a territory move, which allows them to relate their work to previous research. When outlining purposes and announcing present research in the Occupying the niche move, Anglophone authors are likely to use self-mention clusters indicating personal commitment, e.g. *I will suggest*, as well as the cluster *I argue that* which is mostly connected to counterclaiming. In the CZENG corpora, however, the occurrence of abstract rhetors is more common, e.g. *this paper suggests that*, as Czech writers seem to distance themselves from the proposition to background human involvement and volition (cf. Hyland 1998a: 123).

In *Results*, speculative and deductive judgement clusters are combined to convey epistemic stance in all subcorpora, although the results of the analysis indicate the existence of some disciplinary and cultural differences. Speculative clusters comprising *suggest* and *assume* are used in the Reporting and commenting on results move considerably more frequently in the ENG than in the CZENG subcorpora. Showing involvement with the reader and negotiation of claims is often conveyed by the cluster *we can/may/might/could assume that* in which the inclusive pronoun *we* is used for persuasive purposes. Linguists use mostly speculative clusters, e.g. *the analysis suggests, it is/can be assumed that / I assume that* to describe research results. Economists seem to prefer the deductive verb clusters *the results/surveys/observations indicate*, as well as the discipline-specific clusters *I/we estimate that/ a way to estimate/ is estimated, I/we calculate, is/can be calculated, is calculated as*, which typically describe the procedure used for obtaining results in the Reporting results move. While deductive clusters with abstract rhetors and passive forms showing tentativeness and detachment from claims clearly predominate, the ENG ECON and the CZENG ECON subcorpora differ in the use of self-mentions. Anglophone writers tend to use the singular form *I* stressing the role of the author in the research process, while Czech economists opt for the plural form *we*, which may either indicate that they report the results of team work, or, more likely, this may be a case of L1 conventions “leakage”, as the use of exclusive *we* is the norm in Czech academic writing. Tentative interpretation of findings is conveyed by speculative clusters comprising abstract rhetors such as *the table/data/results/evidence/ analysis suggest(s) that* in all subcorpora. In the ENG LING subcorpus there are also occurrences of the speculative clusters *I (am) suggest(ing) that, it can/may be argued that*, which in the case of the stronger verb *argue* are combined with probability hedges. Judgement clusters in the Summarising findings move of *Discussion* sections often mirror the use of speculative verbs in *Introductions* in the choice of self-mention or abstract rhetors, e.g. *I have suggested that / the results (of this study) suggest/ I have argued that*.



As to the expression of evidentiality, both Anglophone and Czech authors use the quotative clusters [*author*] *has shown/shows/research shows* in *Introductions* to review previous research in the Establishing a territory move, while the cluster [*author*]/*research suggests*, which invites alternative views, is prominent only in the ENG subcorpus. The sensory clusters [*previous research*] *results seem/appear to (be)/this approach would seem to occur* occasionally for making topic generalisations and validating previous research. In the Occupying the research space move self-mentions are more frequent in the ENG subcorpora (e.g. *what I aim to show in this paper*), while CZENG authors tend to use abstract rhetors (e.g. *the paper aims to show*). In *Methods* quotative evidence is marked mainly in the CZENG subcorpora primarily by (as) [*author*] *shows*.

ENG and CZENG *Results* sections display significant frequencies of quotative clusters (*as shown in figure/table/ as figure/table/example/ analysis/results shows*) in the Reporting results and Evaluating results moves. The frequent co-occurrence of the factive verb *show* with abstract rhetors shows detachment from claims, which in the Anglophone subcorpora is also enhanced by passive structures. The sensory clusters *it seems/appears that, it/this seems/appears to be, seems to indicate/suggest* convey tentative evaluation of findings in the Reporting and interpreting results moves. While tentative interpretation in linguistics articles is typically expressed by clusters of the verb *seem*, the clusters of *appear* are more prominent in economics RAs, as they often refer to visualisations of results (figures/tables) as sources of evidence. Epistemicity in *Discussion* is used in the Evaluating the study move, where *show* clusters (*I have shown that /this study shows that/the analysis has shown*) are used to report the main research findings; self-mention in evidential clusters also occurs more frequently in the ENG than the CZENG subcorpus. When discussing and evaluating the contribution of the findings to disciplinary knowledge, the clusters *it seems that /these results findings seem to indicate /it does not appear from* are used to indicate the significance and limitations of the reported research in all subcorpora, although the frequency of these clusters is most prominent in ENG LING due to the interpretative character of the discipline and the more dialogic stance adopted by Anglophone authors.

5. CONCLUSION

The results of this investigation into the use of epistemic lexical verbs in linguistics and economics English-medium research articles by Anglophone and Czech authors have shown that despite the existence of considerable homogeneity in the choice of epistemic lexical verbs and their pragmatic functions in the rhetorical sections of all research articles in the corpus, the influence of the different cultural and disciplinary conventions results in various aspects of rhetorical variation in the expression of epistemicity.

Intercultural variation has been found to affect primarily the overall frequency of use of epistemic lexical verbs, as Anglophone writers clearly use more of these epistemic markers in both disciplines. This difference is particularly striking in the use of quotative verbs, as Czech authors tend to use fewer citations to relate their

work to previous disciplinary knowledge and to engage in dialogue with the discourse community (cf. Dontcheva-Navratilova 2016b). The way authors from the two cultural backgrounds combine judgement and evidential verbs in argumentation also indicates subtle differences as there is greater divergence in the ratio of judgement and evidential verbs across the sections of the Anglophone subcorpus; this seems to suggest that the use of English as a lingua franca hinders to some extent the rhetorical choices of Czech authors. The more prominent presence of self-mentions in ENG research articles reflects the more dialogic character of the Anglophone writing tradition as opposed to the preference towards abstract rhetors in CZENG texts, most likely stemming from the tendency to background authorial presence in the writer-oriented Czech academic literacy. The choice of specific epistemic lexical verbs is also affected by cultural considerations, e.g. the prominence of the deductive verb *calculate* in CZENG articles by assimilation to the use of a similar verb in the Czech language and the exclusive occurrence of the higher involvement speculative verb *argue* in ENG LING texts, which indicates an interplay of cultural and disciplinary factors. Thus, in agreement with Pérez-Llantada (2010), it may be concluded that the cultural factor motivates divergence in the preferred rhetorical choices of Anglophone and Czech authors when negotiating claims and striving to construct a persuasive argument and that it leads to some degree of hybridisation of Czech English-medium academic discourse (cf. Gotti 2012; Mauranen et al. 2010; Pérez-Llantada 2010).

Disciplinary variation is indicated by the preference towards specific epistemic lexical verbs (e.g. *argue* in ENG LING, *estimate* and *calculate* in ECON), reflecting the character of disciplinary knowledge and the established disciplinary argumentation conventions. The disciplines also differ slightly in their preference towards judgement and evidential epistemic verbs: linguists tend to use a higher rate of sensory verbs, which leads to an overall preponderance of evidential over judgement verbs in linguistics texts, while economists often rely on deductive verbs, thus prioritising judgement over evidence. The distribution of epistemic lexical verbs clusters across rhetorical sections points to further subtle disciplinary differences.

These findings suggest that the rhetorical choices of Anglophone and Czech authors reflect both cultural and disciplinary factors and culture and discipline seem to govern different aspects of rhetorical choices in academic discourse. The influence of the cultural conventions in which the scholars have been socialised seems to affect the degree of dialogicity they opt for to construct their relationships with the audience and the amount and repertoire of hedging expression they are likely to use. Disciplinary patterns are discernible in specific lexicalisations and in the type of judgements and evidence on which the authors draw.

In conclusion, the findings of this study indicate the necessity to explore the interplay of disciplinary and cultural factors in the use of epistemicity as a key aspect of the construal of persuasion in the genre of research articles. Obviously, a larger-scale investigation on a larger corpus representing the rhetorical practices of a wider scope of disciplines is necessary to reveal further insights into the correlation between culture and discipline and rhetorical conventions in academic discourse.





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