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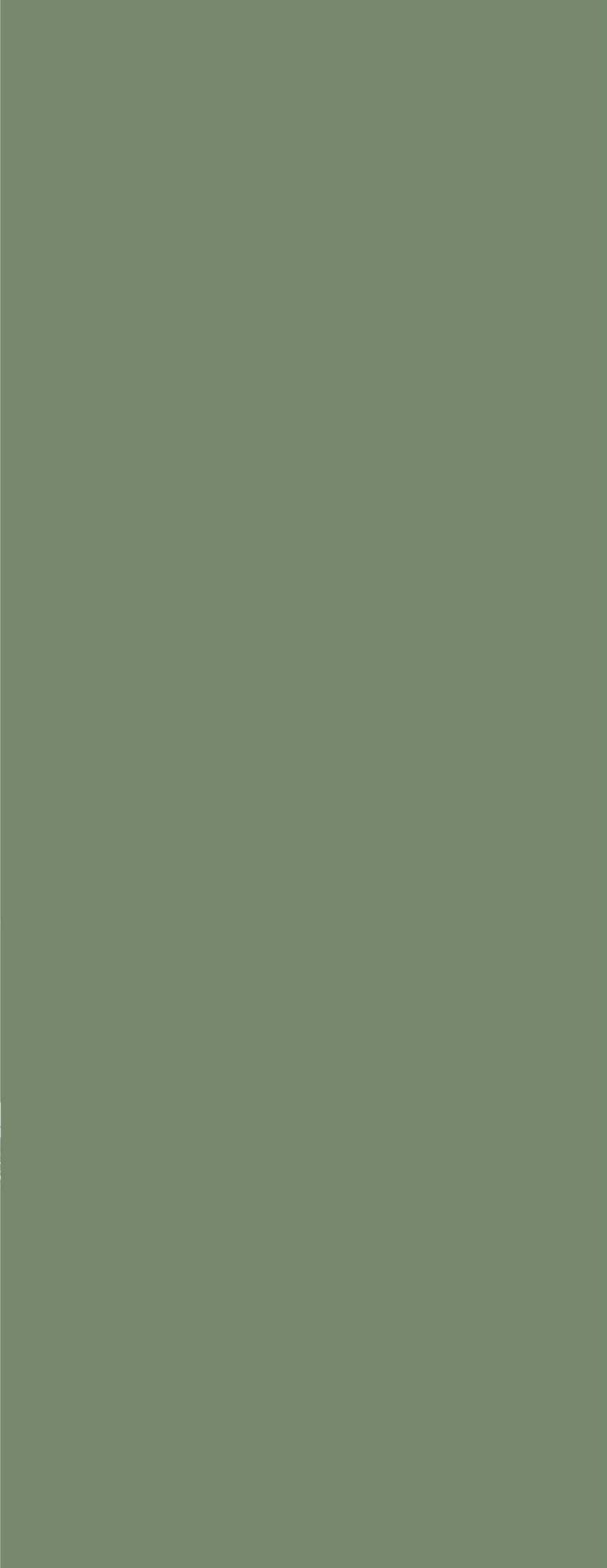
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Certainty and Doubt
in Academic Discourse:
Epistemic Modality Markers
in English and Polish Linguistics Articles

Krystyna Warchał



WYDAWNICTWO
UNIWERSYTETU ŚLĄSKIEGO
KATOWICE 2015



Certainty and doubt in academic discourse:

Epistemic modality markers in English and Polish linguistics articles

For Hania and Jasio

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Certainty and doubt in academic discourse:

**Epistemic modality markers
in English and Polish linguistics articles**

Krystyna Warchał

Editor of the series: Językoznawstwo Neofilologiczne
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Introduction

When people say that they know something, they have their reasons to feel certain that something is the case. Scientific knowledge requires that these reasons be of a specific kind, that they be backed by data collected in the course of observation and systematic experimentation. Moreover, as the developments brought by social constructionism have shown, the status of these data as the empirical basis of knowledge is sanctioned by the particular social context where knowledge is generated, as is the value of observation and experiment as legitimate scientific procedures (Berger and Luckmann, 1967). In this perspective, knowledge is relative to the communities which produce it and emerges in a complex process of negotiating a shared vision of the world and a shared understanding of what constitutes an appropriate object of scientific inquiry, a valid scientific method, and a meaningful academic contribution. Thus, rather than a faithful representation of an objectively given reality, scientific knowledge can be viewed as a product of society, created according to the principles a particular community judges appropriate and aiming to explain this reality which is available to and agreed upon by this particular group. It is then to a large extent a matter of social consensus.

The consensual nature of scientific knowledge and the fact that it is generated in interaction between community members implies that signals of epistemic stance in academic discourse will reflect not only the degree of the author's personal commitment to the truth of a proposition, but also the author's awareness of other members of the discourse community, of the state of the art in the discipline, and of the established patterns of interaction with others. For example, an expression of certainty may convey information about the author's commitment deriving from the amount, distribution, and consistency of the data gathered, thus being a direct claim to expertise; it may indicate that the information presented has already been accepted by the discourse

community as a fact and granted the status of knowledge; or it may emphasise the rigour and cogency of argumentation by showing that the author (with the readers) has reached an undeniable conclusion which deserves promotion to the status of fact. And conversely, an expression which limits or qualifies the author's commitment to the proposition may reflect the author's lack of certainty, possibly related to the type of evidence insufficient to sustain the claim; it may signal that the proposition is a new claim offered for evaluation by the discourse community and awaiting the community's approval rather than part of the already established consensus over what is known; or it may convey the author's awareness of the norms and values professed by the community, such as accepted ways of showing respect for and disagreeing with other authors and the preferable degree of autonomy left to the readers. In this perspective, a study of epistemic markers in academic texts originating in a particular community may provide some insight into its academic practices: the specific mechanisms of knowledge generation and sharing which function within this community.

Possible differences in academic practices may be related to various community-defining elements, of which language is perhaps the most salient. Languages have developed their own rhetorical patterns, which reflect their internal organisation, the responsibilities of and the preferred degree of solidarity between interactants, and the intellectual tradition in which they grow and to which they contribute (Kaplan, 1987; Connor and Kaplan, 1987; Connor, 1996). These culture-specific features will contribute to the ways in which members of communities talk about, generate and disseminate knowledge. Another important element which defines a particular scientific community is the discipline. Disciplines have given rise to text types and evolved stylistic features which best correspond to their specific needs, including recognisable argumentation patterns and expected degree of interpersonal involvement (Melander et al., 1997; Hyland, 1999a, 2000, 2008a; Dahl, 2004; Hyland and Bondi, 2006; Fløttum et al., 2006a; Vold, 2006a; Yakhontova, 2006). These discipline-related characteristics will be responsible for much of the variation observed in the area of academic communication. As powerful factors influencing communication patterns on various levels — from the choice of genre, through the degree of dialogicality, to phraseological decisions — both cultural and disciplinary background may also influence the ways in which signals of epistemic evaluation are used in the text: their frequency, the degrees of commitment which tend to be marked more often than others, and the part of text in which they tend to appear. This book is concerned with potential differences related to the first of these two factors.

This book examines the use of epistemic modality markers in two sets of peer-reviewed journal articles in the field of linguistics published in the years 2001-2006. The first set comprises two hundred articles written in English and drawn from five international linguistics journals: *Journal of Pragmatics*, *Language and Communication*, *Language Sciences*, *Lingua*, and *Linguistics and Philosophy*. The second set consists of two hundred articles written in Polish and published in eight Polish journals, all of which were included in the 2003 list of recognised scientific journals released by the Polish Committee for Scientific Research. The analysis seeks answers to the following questions:

- Is the epistemic evaluation marked with the same frequency in English and Polish linguistics articles?
- Are high, middle and low degrees of confidence marked with a similar frequency?
- What categories of markers prevail as exponents of particular modal value in the two sets of texts?
- Do epistemic markers tend to cluster in particular article sections? Are there any differences in their distribution that might be related to the value of the marker?
- Is there any indication of potential differences in what tends to be epistemically qualified in these two sets of texts?

I hope that the data presented here may be of interest to scholars who study culture-based and discipline-based argumentation patterns in academic discourse, including those concerned with the use of English as an Additional Language and English as a Lingua Franca, and to researchers who investigate epistemic modality and evidentiality in cross-linguistic and cross-cultural perspective. They might also be of some value to scholars who are concerned with how language reflects the community-based mechanisms of knowledge generation and sharing.

Chapter 1 discusses the internal variation of academic discourse resulting from disciplinary divisions, the complex system of genres, multiple audiences, and cultural diversity, provides a short overview of the main lines of research that have been undertaken into academic communication, and reports on the existing research into Polish academic discourse. Chapter 2 is devoted to linguistic modality and outlines the main approaches to the concept, discusses modality types and values, and focuses of epistemicity to present its markers in English and in Polish. The chapter closes with an overview of previous research into modality in academic discourse. Chapter 3 describes in more detail the aims of the present study, introduces the corpus which is the source of data, and explains the procedures applied in the analysis. Chapter 4 presents

and discusses the collected data in three main sections, each of which is devoted to one modal value — high, middle and low — and its representation in the English and Polish part of the corpus and closes with a discussion summarizing the information for both languages. Chapter 5 offers some concluding remarks.

1. Academic discourse and its rhetoric

Although seemingly straightforward, academic discourse is not easy to define in a way which would be both precise and comprehensive. In literature this is often attempted by recourse to “academic settings” and “research settings” (Swales, 1990; Paltridge, 1997), “academic contexts”, or “academic environment” (Hyland and Hamp-Lyons, 2002; Gravett and Petersen, 2007). Paltridge (1997: 2), for example, refers to research settings as “the writing up and publication of the results of experimental research,” deliberately restricting his view of academicity to written communication closely defined with regard to its purpose and methodological orientation. Commenting on the domination of English for Academic Purposes over English for Occupational Purposes in terms of published discussion and findings, Flowerdew and Peacock (2001: 12) observe that “EAP practitioners work in academic institutions, where research and intellectual enquiry are encouraged, while workers in EOP are more often located in the workplace, where professional endeavour is directed more towards the bottom line” — in this way identifying academicity with research-oriented settings and university environment. In the first issue of *Journal of English for Academic Purposes* Hyland and Hamp-Lyons (2002: 2) define the scope of EAP as “language research and instruction that focuses on the specific communicative needs and practices of particular groups in academic contexts.” Such academic contexts are, as Bartholomae (1986: 4) argues, sites of “the peculiar ways of knowing, selecting, evaluating, reporting, concluding, and arguing,” which must be learned along with the field specific facts, rules and laws to enable communication with others. Therefore Petersen refers to academicity as a process of individual development — through involvement with university courses, through extensive reading of research literature, through texts that report on one’s own research and analyse and consider results obtained

by others, and through interaction with colleagues in which “scholarly ways” are rehearsed and instantiated (Petersen, 2007: 477).

The perspective adopted here follows Duszak and her understanding of academic discourse, or “scholarly ways,” as “various communicative activities undertaken to generate and/or distribute scientific knowledge and knowledge derived from it, and to consider intellectually issues which constitute a remarkable component of social life” (Duszak, 1998a: 313–314, trans. KW). This definition lays emphasis on the following aspects of academic interaction: the intellectual, rational attitude of the communicator; the objective of generating knowledge in the act of communication rather than merely reporting it; the dependence on distribution and exchange of information; and the focus on non-imaginary objects of consideration which demand attention. While the rational attitude calls for an uninvolved, logical, factual and impersonal approach to the presentation and analysis of data which constitute the building blocks of knowledge, the fact that knowledge is constructed in the interaction with others implies the need for taking stance, negotiating concepts, weighing arguments, hypothesising and persuading, which turns academic communication into a deeply interpersonal endeavour. The clash between these two forces represents the tension between two views on what constitutes an academic text.

On the one hand, there is the traditional view, where language is a transparent tool for reporting “objective” facts and transmission of knowledge, depersonalised, with the writer and scholar virtually absent from the text. This attitude, consolidated by the Cartesian notion of rationality and the standards of evidence and certainty (Taylor, 1989), is directly grounded in the classical Aristotelian concepts of logic, dialectic and rhetoric, with logic studying the formal links between premises and conclusions, dialectic concerned with examining the soundness of arguments, and rhetoric identified with persuasion and treated with suspicion and reserve (Walton, 2007). On the other though, there is the more recent rhetorical perspective, according to which academic communication is loaded with interpersonal meanings, with the authors aiming not only to describe the small fraction of reality with which they are concerned, but also to engage critically with other writers and points of view in order to arrive at a better understanding of the problem in a broader context and to convince the reader that the issue is indeed worth addressing, that their conclusions are well supported by data, that the analysis is methodologically flawless and that they have the necessary expertise in the field to take a stand on the matter. Academic texts, as Hyland (2005: 66) points out, are therefore not simple representations of reality but representations “always filtered through acts of selection and foregrounding.” Reporting invariably involves se-

lecting certain aspects of “objective facts” and backgrounding others, selecting a method of analysis and grounding it within one theory rather than another, selecting texts and authors to converse with while omitting others. Hence, an academic text is so much a selective representation of a portion of reality as it is of the writers themselves, as ones that “have something interesting and plausible to say” (Hyland, 2005: 66). Constructing plausibility involves weighing possible counterarguments, anticipating criticism or doubt, making concessions to other possible views and, generally speaking, admitting and capitalising on polyphony to persuade the reader that the author’s arguments are well thought out. As Swales (1990: 175) observes, acts of reporting on the research done are in fact “complexly distanced reconstructions of research activities, at least part of this reconstructive process deriving from a need to anticipate and discountenance negative reactions to the knowledge claims being advanced.” The presence of the author and of the others — readers, fellow academics, other researchers and authors — is therefore an inherent part of the complex process of creation of knowledge in the act of communication.

This view of academic discourse as essentially polyphonic is rooted in Bakhtinian tradition of dialogue, where words are born not in the void but in contact with the words of others, with which they interact (Bakhtin, 1982: 101ff). They are seen as “resources for interpersonal negotiation and positioning” (White, 2000: 71) — a perspective which shifts emphasis from the individualistic to the social, from impersonal to interpersonal, and from the monoglossic to the dialogic in academic practices. Meanings emerge as a result of complex interactions and negotiation between academic authors, their readers, and other authors and researchers working on similar problems but not necessarily operating with the same methodologies or within one theoretical paradigm. Academic texts therefore embody the idea of heteroglossic engagement, that is of principal involvement with dialogic alternatives (White, 2003).

The dependence on fast and unimpeded exchange of information, which marks academic discourse and conditions the development of knowledge, means that it is indispensable for scholars to develop a tool for effective communication across language borders. Sharing a code means — in theory, if not always in practice (see, e.g., Flowerdew, 2008) — that the membership in a particular speech community does not preclude participation in academic discussion on the international arena and therefore does not disadvantage a scholar whose first language is not one of a country known for dynamic technological and scientific advances. In today’s world it is English that plays the role of the global language of science (Swales, 1990, 2004; Duszak, 1997a; Wood,

2001; Hyland and Hamp-Lyons, 2002; Duszak and Lewkowicz, 2008), a point further developed in Section 1.3.4 of this chapter.

Finally, with regard to the objects of academic enquiry, the increasing specialisation of scholarship has resulted in the emergence of a variety of disciplinary discourses, which have evolved, each on its own account, characteristics best suited to meet the specific needs of their disciplines — distinctive lexis and collocational patterns, typical genres and preferred organisation of their specimens, characteristic argumentation styles, and varying degrees of interpersonal involvement. The extent to which such discipline-related communication styles may differ from each other — and the extent to which they may coincide — has been shown, among others, by Melander et al. (1997), Hyland (1999a, 2000, 2002b, 2005, 2008a), Dahl (2004), Hyland and Bondi (2006), Fløttum et al. (2006a, b), Vold (2006a, b) and Yakhontova (2006). The observed differences have challenged the idea of homogeneity of academic discourse and called for a more contextualised, discipline-oriented approach to the study of “scholarly ways”, with the result that today scholars speak of academic discourses rather than discourse, and hence of academic communication in business (Bondi, 2006; Mur Dueñas, 2008), economics (Oakey, 2005; Bondi, 2006; Belotti, 2008), law (Sala, 2008; Tessuto, 2008), biology (Myers, 1990; Hyland, 1996; Cortes, 2004; Okamura, 2005), medicine (Williams, 1996; ElMalik and Nesi, 2008; Rundblad, 2008), mathematics (Yakhontova, 2006), history (Cortes, 2004), sociology (Namsaraev, 1997) or linguistics (Freddi, 2005a, b), often narrowing their focus down to more specific labels (e.g., cancer research — Gledhill, 2000; molecular genetics — Myers, 1992; oncology — Carter-Thomas and Rowley-Jolivet, 2008; conservation biology and wildlife behaviour — Samraj, 2002; or applied linguistics — Yang and Allison, 2003, 2004). Hence any discussion of academic discourse necessarily involves the question which of these discourses is in fact invoked, as well as the question of generality, depending on whether the goal is to arrive at a broader but simplified view on academic communication practices, with much of the internal variation flattened out, or a more detailed description, closer to real life, but restricted to more or less narrowly defined subfield. Participants in these communication practices form a community which is held together by a shared goal of developing knowledge and understanding through mechanisms of negotiation and argumentation, but which, like academic discourse itself, is not uniform but internally varied.

The aim of this chapter is to give a brief overview of the existing research into academic communication. The next section discusses the concept of academic discourse community and its internal variation. Further sections ex-

amine cultural diversity in scholarly practices, the main strands of research done into English academic communication — including contrastive studies — and the role of English as the global language of science. A separate section is devoted to studies of Polish academic discourse and its features.

1.1 Academic discourse community: its genres and values

The notion of discourse community, developed by Swales in 1990, refers to a sociorhetorical grouping whose members pursue a shared set of goals which determine their communicative behaviour. These goals dominate over such social bonds as a shared language or a common cultural background — unlike in speech communities, which prioritise shared language and culture as the source of the sense of solidarity and belonging. Moreover, and again in contrast to speech communities, the communication models that serve the members of these groupings to realise their goals must be learned by aspiring members and novices rather than acquired. Finally, membership in discourse communities, as Johns (1997: 53) points out, is not inherited but voluntary and earned by an individual who chooses the type of community to join and decides on the degree of involvement in it. Participation in one discourse community does not preclude membership in other discourse communities but may influence one's discursive practices within those other groupings (sometimes interfering with them, as shown by Swales, 1990, who reports on his own attempts to become a full member of a Hong Kong philatelic community).

According to Swales (1990: 24-27), the set of conditions necessary and sufficient for a discourse community to form includes: a shared set of goals, established mechanisms of communication among members, activity of members in terms of information exchange, development of genres which further the goals of the group, acquisition of specific lexis, and a hierarchy of membership. To pursue the group's goals effectively, the academic discourse community have developed text types which appear best suited to the dialogic model of knowledge generation and dissemination, i.e., research and other professional faculty genres (Johns, 1997), including the research paper, the academic book review, the monograph, the abstract, the conference paper, and, more recently, the multimedia presentation. Apart from these "real genres", the academic community possesses also pedagogical genres, such as the textbook and the lecture, whose main function is to acquaint students with the funda-

mentals of their discipline; and “school genres”, including the essay examination response, the term paper, and the master’s thesis, through which students display their level of disciplinary knowledge for evaluation by their advisors and tutors (Johns, 1997; Johns and Swales, 2002). A good grasp of these types of texts — the awareness of implicit expectations regarding their form and content — determines, disciplinary expertise aside, the status of an individual within the community on various stages of his or her academic development. The ability to communicate with others using a common code — genres, communication strategies and argumentation patterns — is necessary to take part in the dialogue whose aim is generation of knowledge. The inability to do it in a form accepted by the discourse community as a valid contribution deprives an individual of the voice or dooms him or her to the peripheries of the community because a text which violates community norms and expectations, even if it gets published, is likely to be treated as an exotic production, of interest to ethnographers of communication rather than fellow scholars working on similar problems.¹

Recognition of one’s contribution as legitimately academic is a problem particularly well demonstrated by genres which are subject to very strict norms, such as, in the field of biology, a description of a new species, whose structure, content and availability are regulated by *International Code of Zoological Nomenclature* (International Commission on Zoological Nomenclature, 1999, esp. articles 8 and 16). If these requirements are violated, the text is not recognised as a description of a new species, leaving the floor open to other scholars who have the right to claim priority (Warchał, 2002).

Understanding the community’s communication practices involves not only an awareness of specific forms of discourse, their internal structure and preferred lexical patterns but also a recognition of the declared values that underlie these practices, such as politeness towards the rest of the discourse community, respect for the work of other members, priority of disciplinary development over individual achievement, academic honesty with regard to the handling of data and recognition of others’ contribution, respect for the hearer/ reader and his or her knowledge, experience and expectations, and responsibility for the precision and clarity of exposition, which prevent future errors

¹ This is not to say that peripheral participation in a discourse community is always unsatisfactory and brings no benefits. Canagarajah (2002) points out that it is a natural stage in the individual academic development, which should be encouraged as providing young or future scholars with an authentic insight into discourse practices of the community and opportunity to rehearse them until they have developed the knowledge necessary to acquire full membership.

resulting from misunderstanding (Hinds, 1987; Myers, 1989; Swales, 1990; Hyland, 1994).² They all emphasise the collective, collaborative and consensual aspect of academic efforts, with individual researchers trying to fit in with the existing state of disciplinary knowledge and widely established norms of academic dialogue, trying to present themselves as competent, credible and reliable partners in this interaction, building on the work of others and in so doing seeking acceptance for the ideas they put forward for consideration and evaluation. As noted by Myers (1989: 5), “the writer must stay within a certain consensus to have anything to say to members of his or her discipline.” The search for consensus is therefore an important motivation underlying much of the “scholarly ways” Petersen (2007) refers to in her essay on negotiating academicity.

On the other hand, for an academic text to appear in print, it must offer something new and in this way challenge the existing knowledge in the field. To convince the reviewers that their contribution deserves publication, and readers that it is worth further attention, scholars create a research space (Swales, 1990) either by academic criticism (as shown, e.g., by Myers, 1989; Hyland, 2000; Martín-Martín and Burgess, 2004; Hunston, 2005) or by providing additional, so far unconsidered data, which may shed new light on the object of study. In this way, while in principle staying within the established disciplinary consensus, academic authors set themselves apart from other researchers and previous literature, the ultimate aim of their exposition being not only the presentation of new data, an alternative approach or a novel method of analysis but also persuading the readership — and the whole discourse community — that the claims that arise from these new perspectives merit serious consideration, further discussion and promoting to the status of facts. As noted by Hyland (1994: 241), an effective academic contribution should be “both original and closely related to the concerns and methods of current research, achieving a balance between the profound, but hazardous, and the correct, but insignificant.” As a result, much of the argumentation patterns in academic communication proceed from the need to reconcile the two motivations: the search for consensus on the one hand, and the need to structure

² That these values are not absolute but subject to cultural variation has been convincingly shown by authors engaged with English for Academic Purposes and Contrastive Rhetoric. For example, Hinds (1987) points out that while in the English academic tradition the prime responsibility for effective communication lies on the speaker/ writer, in the Japanese tradition it is the listener/ reader who bears the responsibility for successful interaction. Clyne (1987a) has demonstrated that even less distant cultures manifest considerable differences in this respect — a point further developed in Section 1.2.

disagreement on the other (Myers, 1989; Swales, 1990; Hunston, 2005; Łyda, 2007a, b; Warchał and Łyda, 2007; Warchał, 2010b). The balance between these two forces — the extent to which the disagreement is overtly proclaimed — is both culture- and disciplinary-bound (as shown, among others, by Duszak, 1994; Čmejrková, 1996; Čmejrková and Daneš, 1997; Hyland, 1999a; Samraj, 2002; Salager-Meyer et al., 2003; Shaw, 2003; Adnan, 2008), adding to the internal complexity and diversity of academic discourse and its community.

Swales (1990: 24) observes that discourse communities are centrifugal, that is they defy homogeneity and tend to be internally divided depending on specific interests of their members. This internal division of academic discourse community is reflected in disciplinary differences, which, as we have already noted in Section 1.1, are one of the sources of variation within academic communication. As Hyland (2005: 140) observes, “[discourse] communities are, in fact, not monolithic and unitary but often hybrid, characterized by varied values and discourses and by individuals with diverse experiences, interests and influence.” Another source of variation is cultural background of discourse participants, an issue discussed in more detail in the next section.

1.2 The cultural factor in academic communication

Writing in 1966, Kaplan observed that differences between languages go beyond individual language systems and reside also in their rhetorical structure — in the preferred ways of topic identification and development and hence in the values their users attach to such features as a direct statement of the problem, a straightforward announcement of the communicative goal, linear argumentation, and explicit formulation of conclusions (Kaplan, 1987). These early observations sparked interest in the ways rhetorical patterns and discourse expectations of one’s mother tongue may influence the composition in another language, which has developed other forms of discourse organization and different rhetorical models (see, e.g., Connor and Kaplan, 1987; Connor, 1996). For example, it has been noticed that there are considerable differences in the ways apparently equivalent genres are utilised in different cultures (e.g., apology in American and Japanese contexts; Smith, 1987), in discourse expectations and norms set up for corresponding text types, such as school essays in English, German and Polish (Clyne, 1987b; Duszak, 1998b), in the preferred argumentation patterns used in student compositions (Connor,

1987), and in the primary responsibility for effective communication, which can rest either with the speaker/ writer or with the listener/ reader (Hinds, 1987). Such differences are particularly strongly marked in academic communication, which, as we have seen in the previous section, involves interactants representing various speech communities, trying to describe research, present findings, propose claims, argue in their favour, and persuade the readers to accept them — in other words, interactants who strive to make their point in a way which is intelligible, acceptable and persuasive beyond their own linguistic and cultural contexts.

In the opening passages of her study into cultural differences in academic written discourse, Mauranen (1993b) observes that academic writers who need to publish in a foreign language may produce texts which are rhetorically ineffective for the following reasons:

- (a) because they do not know how to manipulate the resources of the target language (usually English) to their advantage, due to an inadequate command of the lexis, grammar, and textual structuring of the language
- (b) because their beliefs about what convincing rhetoric is like may be different from that of the target culture (usually Anglo-American), or they may be unaware of the existence of such differences. (Mauranen, 1993b: 1)

The culturally based beliefs about effective exposition and argumentation, which underlie the second group of factors responsible for a failure in producing a successful academic contribution in a foreign language, are often rooted in the intellectual tradition in which the text originates — in specific attitudes towards knowledge, writing, the researcher and the reader, which are prevalent in this culture. The Western tradition of critical thinking is founded on the Socratic model of rational inquiry (Walton, 2007) and, as noted by Strevens (1987) in his discussion of “society’s ultimate myths” that mould our discourse strategies, shaped by the philosophical thought of the 17th and 18th centuries, with its attitudes towards facts, hypotheses, theories and claims. As a result, in Western cultures academic contribution is likely to be evaluated on the basis of the cogency of logical argumentation, while other cultures may attach importance to other properties, such as, e.g., the aesthetic merits of the text (Strevens, 1987).

Variation in the organisation of academic texts and preferred rhetorical patterns which derives from different attitudes to knowledge is well-exemplified by Clyne’s (1987a) study into discourse strategies adopted by English and German academics writing in English. The results have demonstrated that the

first group of authors tend to choose linear argumentation, use more advance organisers to make the structure of the text and the line of argumentation transparent, and attach greater importance to explaining key concepts early in the text, while texts written by speakers of German are more often marked by extensive use of digressions to provide additional theory or ideology, lesser number of advance organisers, and postponement of definitions. Similar observations come from Mauranen's (1993b: 248) analysis of English academic texts by Finnish writers, who are predisposed to develop their definitions and claims throughout the discussion and contextualise them in a broader context of what is already known rather than anchor them in one specific text they produce. These differences, as Clyne (1987a: 238) argues, may be taken to reflect specific attitudes to knowledge, which in the German tradition is idealised and valued as such, regardless of the way in which it is presented, with the result that academic texts written by Germans are not purposefully designed to make easy reading. Similarly, the amount of theoretical background, greater in the case of German and Finnish scholars than in texts originating in the Anglophone tradition, underscores the status of knowledge, which in these cultures is elitist and therefore not accessible to everybody, whereas in the Anglo-American world it is given a more egalitarian treatment.

In a similar vein, Čmejrková (1996) observes that the Czech scholarly tradition, to a large extent influenced by German thought, tolerates vagueness and associativeness, which stand in a sharp contrast to clarity and linearity of English academic style. Czech authors are also less likely than their English colleagues to use advance organisers and tend to be more implicit in the treatment of definitions (Čmejrková and Daneš, 1997). Moreover, they are often found to delay the statement of the main purpose of the text, which in English academic writing is to be presented explicitly in the introduction (Čmejrková, 1996). A similar observation is also made by Duszak (1994), who compares strategies in English and Polish research article introductions. Her study shows that Polish authors, representatives of a scholarly tradition which developed under German influence, tend to be more restrained and self-effacing in outlining their purposes than English writers, who are more assertive and straightforward in this respect. Such organisational and rhetorical differences reflect culture-bound attitudes not only to knowledge but also to academic writing itself, which in the English tradition is seen as part of the theory of writing, taught and practiced as a skill to be acquired and evaluated alongside subject matter expertise.

Another source of variation in the rhetorical organisation of academic texts is the attitude towards the researcher. Clyne (1987a) argues that some

features of academic texts written by German authors, such as the heavy use of *Fachsprache*, digressiveness, syntactic complexity and scarcity of advance organisers, may be traced to the need to confirm the status of the writer, who by opaque scholarly register presents himself or herself as a member of the enlightened minority. The solitary, elitist position of the writing scholar may also contribute to the monologic character of academic texts which originate in the German intellectual tradition, which contrasts with the more interpersonal, open style of English academic texts, whose authors engage in a dialogue with the readership, creating knowledge rather than displaying expertise.

Finally, different attitudes towards the reader are reflected in reader or writer responsibility for effective interaction (Hinds, 1987). While communication presupposes co-operation of the interactants, the share of responsibility for its success may vary. Thus, in the English tradition it is the writer who is primarily responsible for making clear, comprehensible statements and for organisation of ideas in a way which is easy to follow. "If there is a breakdown in communication, for instance," Hinds (1987: 143) argues, "it is because the speaker/ writer has not been clear enough, not because the listener/ reader has not exerted enough effort in an attempt to understand." This kind of writer-responsible discourse embodies what Flower (1979: 20) refers to as Reader-Based prose, as "a deliberate attempt to communicate something to a reader." English academic texts, which explicitly state the purpose of writing early in the text, use advance organisers to assist the reader in following the development of argumentation, attach importance to clarity of expression and definition of key concepts, divide the text into manageable thematic units, and avoid digressions, exemplify reader-based style, where the writer is responsible for successful transfer of ideas and their favourable reception. By contrast, in Japanese texts the side which bears primary responsibility for effective communication are listeners/ readers, who are required to make sense of the information supplied by the author on their own (Hinds, 1987). Similarly, Mauranen (1993b) reports that Finnish academic rhetoric gives more autonomy to the reader, who is not accustomed to being taken by the hand. Also academic texts which originate in German, Czech and Polish intellectual traditions seem to fit the reader-responsible category (Čmejková, 1996; see also Section 1.4 for a more detailed discussion of the features of Polish academic communication).

Although cultural background has been shown to influence in many important ways the writers' attitudes towards writing, audiences, and disciplinary knowledge, and although these attitudes have been found to leave an identifiable stamp on their texts, style and linguistic choices, a question arises: if we

look at the differences in the organisation and rhetoric of academic texts, how much culture is in fact there, and what should perhaps be attributed to other factors, such as genre, discipline, or personal experience and preferences of the author? Hyland (2005), for example, draws attention to the fact that a significant number of the observed differences and problems encountered by L2 writers can be related directly to the level of their L2, and that cultural preference is just one of the many factors that influence their choices. Also Uysal (2008) in her study into the rhetorical patterns of Turkish writers demonstrates that, apart from cultural background, there are other important influences at work in L2 writing context, such as educational background and sustained writing experience.

The focus of the next section is on specific linguistic features of English academic discourse — features which often pose problems for writers in English as an additional language, whose cultural assumptions about what constitutes good academic prose may be different from those shared by Anglophone academics.

1.3 English academic discourse: Previous studies

1.3.1 Academic register(s)

Defined as linguistic properties which are associated with recurrent communicative situations identified with regard to the participants, the subject matter, the setting and the channel, register highlights the relationship between the context of language use and the linguistic forms expected and habitually chosen by the interactants (Halliday and Hasan, 1976; Lemke, 1985; Hatim and Mason, 1990; Leckie-Tarry, 1995; Biber and Conrad, 2009). As a use-related language variety, it reflects the user's awareness of what language forms are typical, expected or appropriate in particular circumstances rather than the ethnic, geographical or social identity of the communicator. Apt use of register then reflects the speaker's or writer's communicative competence in a particular field of discourse and is an element of evaluation of a proficient discourse participant.

The internal variation of academic discourse and academic discourse community is reflected in the wide range of academic registers, which vary depending on the channel (spoken or written), the genre (research article or

textbook), the audience (students or experts), the immediate setting (course lecture or office hours) and the discipline (Biber, 1988, 2006a, b; Swales, 1990, 2004; Hyland, 2000, 2006, 2008a, b; Groom, 2005; Fløttum et al. 2006a, b; Simpson-Vlach, 2006; Thompson, 2006; Vold, 2006a, b; Biber and Barbieri, 2007; Lorés Sanz, 2008). In an attempt to offer some general understanding of the nature of the linguistic choices preferred in academic contexts and rules of thumb as to how to write “academically” for less experienced members of the community, many textbooks and study guides point to such features of academic (written) registers as formality of language manifest in the choice of formal alternatives on the word and sentence level and the avoidance of direct questions; objectivity of the tone reflected in the higher frequency of impersonal structures as well as avoidance of direct appeals to the reader and adverbs which show the writer’s personal, subjective attitude; precision of expression visible in careful selection of vocabulary items, limited use of approximators and avoidance of very general superordinate terms; clarity of exposition maintained by establishing clear connections between ideas through linking words; and tentativeness of language when it comes to claims, hypotheses, inferences and extrapolations (Arnaudet and Barrett, 1984; Williams, 1990; Swales and Feak, 1994; Jordan, 1999; Bailey, 2003). A closer look at any of these features, though, reveals that any meaningful discussion of academic register must begin with a more detailed description of the type of interaction.

Possibly the most clearly marked opposition in academic registers is that between spoken and written discourses, much unlike in other varieties of English, where the distinction between speech and writing is often not more important than other parameters (Biber, 2006a). This divide is reflected, among many other features reported by Biber (2006a, b), in the use of 1st and 2nd person pronouns and epistemic stance expressions, more frequent in spoken language regardless of further contextual specifications, and complex noun phrases, more common in all written academic registers.

An important source of variation in academic discourse is the complex system of genres which, on the one hand, realise different communicative goals and structure the relationship between the author and the readership in a different way, and on the other are subject to disciplinary conventions and specificity in terms of text organisation, the preferred degree of interpersonality, and the amount of speculative reasoning (Swales, 1990). Moreover, Swales (2004) observes that genres differ also in their status or centrality within the set of text types utilised by a particular discipline, with the monograph, for example, in some fields documenting the highest academic achievements of the author, in others leaning towards more popular topics or treatment. Given the

internal complexity of academic discourse community and its system of genres, Groom (2005: 258) argues that:

we should expect different written and spoken genres and different discourse communities to select or prioritise different phraseological patterns; the former on the grounds that they serve different communicative and institutional purposes and thus prioritise different rhetorical strategies . . . and the latter on the grounds that they are characterised by different ideological interests and interpersonal practices (Groom, 2005: 258)

And so in his analysis of research articles and book reviews in two areas of scholarship, Groom (2005) notes some phraseological differences across genres and disciplines in the introductory *it* patterns, especially with regard to negation and criticism. In another contrastive study, Lorés Sanz (2008) compares authorial voice in linguistics research articles and corresponding abstracts and finds out that the writer's presence is more overtly marked by means of pronouns in the former, especially in the Results section or move.

Well-marked and perhaps most frequently discussed differences in academic registers have been observed across various fields of scholarship, in particular between so called soft disciplines and hard sciences. For example, Biber (1988) in his large-scale research into the distribution of a rich set of linguistic features across different spoken and written genres of English finds out that agentless and impersonal constructions, which add to the abstractness of the text, are more salient a feature of written academic prose in natural sciences and technology than in humanities or social sciences (Biber, 1988: 194). Conversely, reader pronouns, which directly engage the audience and in this way add to the interpersonal character of the text, and hedges and boosters, which are markers of the authorial stance and commitment, have been found to occur much more frequently in soft discipline research articles than in sciences (Hyland, 2006). These findings tally with those obtained by Fløttum et al. (2006a), who studied person manifestation in research articles from three academic disciplines in three languages. The authors report that the presence of the author and the author-reader interaction is markedly less conspicuous in medicine than in linguistics or economics, as shown by a lower number of first person subjects and fewer addressee features of the *let us* type. They also observe that linguistics texts more often employ overt signals of argumentation, such as negation and adversative conjunctions.

Interesting observations come from Vold (2006a, b), who studied disciplinary and cross-linguistic differences in the use of epistemic modality markers

in research articles in medicine and linguistics. Her results indicate that there is a marked tendency for epistemic expressions which overtly presuppose an evaluating agent, such as *assume* or *seem*, to appear in linguistics rather than in medicine research papers, while markers which disguise the modalizing agent, such as *could* or *may*, tend to be preferred in the field of medicine.

Noteworthy disparities in the lexical organisation of text and in the function of specific discourse elements can also be found between close disciplines, as shown by Bondi (2006) and her analysis of narrative structures in business and economics academic prose. For example, she observes that signals of hypothetical, speculative reasoning, such as *if*, *then*, *case*, and *given*, are markedly more frequent in economics than in business academic texts.

Important insights into academic varieties of English have come from the study of lexical bundles, i.e., recurrent sequences of words which often do not form complete structural units (Biber et al., 1999; Biber, 2006a). As Biber (2006a) convincingly demonstrates, different sets of lexical bundles are characteristic of different academic and other university registers. For example, discourse organising bundles, which introduce and elaborate on a topic, have been found to occur more often in non-academic than in academic university registers and, with regard to the latter, slightly more frequently in textbooks than in other academic prose (Biber and Barbieri, 2007). As regards disciplinary register variation, Hyland (2008b) reports that text-oriented bundles, a category which includes discourse organising bundles, tend to occur with higher frequency in applied linguistics and business academic prose than in biology and engineering, disciplines dominated by research-oriented bundles, which help describe research environment, material and procedures.

The study and comparison of the lexical profiles of various academic texts have in many ways benefited from the development of an academic word list (Coxhead, 2000), a list of 570 word families, each comprising the headword with its inflected forms and derivatives, most frequently and widely used in written texts across different subject areas. Useful as it proved to be in developing student literacies (Coxhead and Nation, 2001; Coxhead, 2006, McCarthy and O'Dell, 2008; Arabski et al., 2009), the list was at the same time criticised for overgeneralising the “common core” of academic vocabulary and ignoring discipline-specific patterns of lexis, which in turn triggered research into specialised, discipline-defined lexicons and discipline-specific usage of individual vocabulary items (Chen and Ge, 2007; Hyland and Tse, 2009; Martínez et al., 2009).

Orientation in the variety and distinctiveness of academic registers — and, as Biber (2006a) observes, other university varieties of English — poses prob-

lems for both less experienced members of academic discourse community and those who must additionally overcome specific difficulties connected with communicating in a foreign language. Members of this last group must then cope with a foreign language system, with rhetorical conventions which, as we have seen in Section 1.2, may be different from those they know from their mother tongue, and with the internal complexity of the English system of academic registers, which in their case is another “barrier to a successful proliferation of scholarly ideas” (Duszak 1994: 291). The next section offers a brief survey of literature on selected academic genres, from the research article, often regarded as the most prestigious professional academic text type, through the article abstract, book review, and PhD dissertation, to some spoken, occluded and pedagogical genres.

1.3.2 Academic genres

Since Bakhtin (1983 [1979]), who began to see genres as modes of communication recognised and defined by particular communities and which organise linguistic behaviour of these communities in much the same way as the rules of grammar, linguistics has seen a considerable growth of interest in this concept. Halliday (1978) speaks of genres as socially recognised and significant functions of text. Working in the same systemic-functional tradition, Martin (1985, 1992) defines genres as goal-oriented social processes with a distinctive schematic structure and representing verbal strategies conventionally applied by members of a community to achieve a particular social goal. These verbal strategies are, as Miller (1984: 159) argues, “typified rhetorical actions based in recurrent situations.” Some of them — based in research contexts — are viewed by other scholars associated with the new rhetoric movement as broad rhetorical strategies “enacted within a community in order to regularize writer/ reader transactions in ways that allow for the creation of particular knowledge” (Paré and Smart, 1994). In this way genres began to be seen as prepatterned solutions by default applied by members of a particular culture or grouping to recurring communicative problems — solutions constrained by a specific communicative situation and the set of contextual factors that go with it, stamped with distinctive linguistic features and internal structure, and marked by a certain degree of interpersonality (Günthner and Knoblauch, 1995). Unawareness of such routinised responses to communicative needs and ignorance of their constraints and characteristics disadvantage a communicator, who, on the one hand, is forced to deal with a communicative task as if it were unique

rather than apply an established model — which makes his or her contribution less efficient — and on the other, remains ignorant of the interlocutor's expectations — which often renders it less effective. The addition of discourse competence — defined as the ability to recognise texts as instances of genres and to produce texts representing different text types utilised by a community (Swain, 1985) — to the formerly tripartite model of communicative competence (Canale and Swain, 1980) has established genre awareness as an important component of a language user's knowledge (Bell, 1991; Warchał, 2004).

The greatest impact on genre-based research and practice of EAP has come from Swales' (1990) *Genre Analysis*. Swales defines genre as a class of communicative events which share some communicative goal or set of goals recognised as valid by a particular discourse community and which have developed certain structural, rhetorical and content patterns that appear best suited to further these goals. This approach to genre has been taken up and developed by many other scholars concerned with English for Specific and Academic Purposes. For example, Bhatia (1993) emphasises the element of individual, strategic choice made by the communicator to pursue his or her goals more effectively by exploiting and manipulating the conventional form of a particular genre, staying at the same time within the broadly defined set of communicative purposes of this class of texts. Paltridge (1997) elaborates on Swales' (1990) notion of genre prototype, drawing attention to the fact that various exemplars of the same genre can be placed along a cline from those which are closest to the prototype, to those more peripheral and often markedly different in terms of internal structure. These peripheral specimens, if consistently rehearsed by members of the discourse community in specific recurrent situations, may in time develop into sub-genres and further into genres, with the prototype-periphery cline redefined. Bazerman (2004) speaks of genre systems, which comprise various genres used by different people working in the same context and which represent regular sequences of communicative events, where one occurs in response to another and itself triggers, or transforms into other texts. An analysis of such systems, or genre networks (Swales, 2004), provides valuable insights into the patterns of interaction within a particular community and an understanding of how information is structured and recycled within this grouping.

The notion of genre has proved highly influential in language education (Connor, 1996; Johns, 1997; Hyland, 2007; Martin, 2009). It has been noticed, for example, that in some areas it is high discourse competence that is, or should be, the ultimate objective of an advanced second language instructional programme, not native-like linguistic/ grammatical competence. Swales

(1990: 10) observes that for many such programmes “the aim is to help people achieve a level of competence that, in career-related genres at least, surpasses that of the average native speaker.” Seen in this light, genre becomes a “structuring device for language teaching” (Swales, 1990: 33). This approach to the second language instruction and practice has gained currency especially in the field of Language for Specific/ Academic Purposes (e.g., Arnaudet and Barrett, 1984; Hollett, 1996) and in writing courses (e.g., Swales and Feak, 1994; Jordan, 1999; Evans, 2002; Murray and Moore, 2006; Cargill and O’Connor, 2009; with more examples available in Paltridge’s 2001 review of the applications of linguistic research to the teaching of EAP).

LSP genre-oriented research has produced many analyses investigating internal and external structure of individual genres. Of these, the research article is probably the most frequently studied professional academic text type because of its numbers, its status in the individual academic development of a scholar, and its importance in the dynamics of the discipline. Bazerman (1984) investigates an almost ninety-year-long evolution of the experimental research report in one subfield of physics, taking into account such elements as the length, overall organisation, syntactic complexity and the nature of lexical choices. Myers (1989, 1992) studies the complex social framework in which authors of scientific articles operate, focusing on politeness strategies in scientific discourse and on the pragmatics of claim-making. Swales (1990) in his groundbreaking book elaborates on the IMRD structure of an experimental research paper — a discussion continued and extended to review articles in his later work (Swales, 2004) — and offers a revised Create-a-Research-Space (CARS) model for the article introduction. Other scholars have focused on individual segments or moves. Duszak (1994) and Samraj (2002), for example, analyse introduction sections of research articles in terms of their compliance with the CARS model — in Polish and English linguistics research articles and in two related fields of life sciences respectively. The Methods section — its organisation and linguistic features in social and physical sciences — is discussed in Bruce (2008), an analysis later extended to the next segment of text (Bruce, 2009), and Swales (2011), who draws attention to disciplinary variations in the scope and organisation of this part of text. Holmes (1997) analyses the move structure of the discussion sections in three disciplines of social sciences: history, political science and sociology, and finds some interesting differences between history and the other disciplines. Finally, the results, discussion and conclusion sections of research articles in the field of applied linguistics are studied in Yang and Allison (2003), who look into their distinctive rhetorical organisation.

Other authors have focused on selected rhetorical strategies implemented in this particular genre, often further specified with regard to the discipline. For example, Bloor (1996) examines research articles in the field of the philosophy of mind and identifies three strategies that involve hypothetical constructs and humour, which, as the author suggests, might be distinctive of this branch of philosophy, where research is founded on polemics and dispute. Hyland (2000) studies academic citation practices in research articles from a variety of hard and soft disciplines — an issue also taken up by Mur Dueñas (2009), who focuses on business management articles in a cross-linguistic perspective, and Hewings et al. (2010), who analyse citations in English-language psychology articles written by non-native users of English. Other studies include Belotti (2008), who investigates the types and specific realisations of critical unmitigated claims made by authors of economics research articles, Tessuto (2008), who examines the linguistic devices of authorial voice in academic law research articles, Mur Dueñas (2008), who studies the use and function of engagement markers in English and Spanish research articles from the field of business management, and Lafuente Millán (2008), who undertakes an analysis of research articles with a view to identifying various patterns of epistemic and approximative meanings across four disciplines. Cross-disciplinary (and cross-linguistic) studies of the metadiscourse elements in research articles have also been conducted by Dahl (2004) and other scholars engaged in the KIAP project (Fløttum, 2006a, b).

Another professional academic genre which has received a considerable amount of attention from linguists is the research article abstract, a text type whose importance in recent years has been growing with the increasing number of academic contributions published and with the emergence of abstracting electronic data bases. Structurally, the abstract is a shorter version of another text, whose most important points it preserves in a condensed form. It often follows the standard IMRD pattern of the original article (Swales, 1990). Functionally, its most important role is to induce the reader to read the whole text, whose “selective representation” it provides (Hyland, 2000: 64). It also acts as a visiting card in contacts with editorial boards, which, if favourably received, can open the author-reviewer dialogue or, if not, effectively prevent the author from publishing. The function of the abstract is therefore threefold — to provide maximum information in the severely limited space of text, to whet the reader’s appetite for more details, and to persuade the potential reviewer of the timeliness of the research, soundness of the methodology, and expertise of the author.

Linguistic features and rhetorical organisation of research article abstracts have been studied by Swales (1990), who also critically reviews previous lit-

erature concerned with this text type, Melander et al. (1997), who examine English and Swedish abstracts of research articles drawn from medicine, biology and linguistics in terms of their structure and linguistic and rhetorical features, and Hyland (2000), who devotes one chapter in his volume to the discussion of rhetorical organisation patterns and mechanisms of persuasion across various disciplines. Huckin (2001) carries out an analysis of biomedical abstracts to see how accurately they represent the content of corresponding articles and comments on their typical move structure. Martín-Martín (2003) and Martín-Martín and Burgess (2004) investigate rhetorical variation between English and Spanish research article abstracts from the fields of psychology and phonetics, with some particularly interesting findings concerning the Results section and the handling of academic criticism, Stotesbury (2003, 2006) explores evaluative language in abstracts drawn from a wide range of disciplines, while Lorés (2004) examines linguistics research article abstracts to discover two types of rhetorical structure they tend to follow and studies the relationship between the structural type and the thematic organisation of the text. Van Bonn and Swales (2007) focus on English and French research article abstracts published in monolingual and bilingual linguistics journals and report marked differences with regard to justifying the research on the one hand and announcing its purpose on the other. Linguistic signals of authorial presence are investigated in Pho (2008) and Cava and Venuti (2008), who discuss the patterns of writer/ reader interaction in research article abstracts especially as regards the terms related to the author's identity and the items with which they co-occur. The roles the author of an article abstract assumes and the ways in which they are realised in the text are further examined in Dahl (2009) in both cross-linguistic and cross-disciplinary perspective. Interesting insights into the linguistic organisation of medical research article abstracts also come from Bielski and Bielska's (2008) analysis of Polish-English abstract translations. More recently, various perspectives on abstracts as an academic genre have been brought together by Lorés Sanz and Bondi (2014), a collection of studies which look into the rhetoric, specific lexical patterns and historical development of the abstract across disciplines and cultures.

Research into the rhetorical organisation of the academic book review, a genre which provides a summary and evaluation of another academic text, has been undertaken by Hyland (2000), who studies the strategies of praise and criticism used by authors in order to achieve a balance between open evaluation of another writer's text on the one hand and tactfulness and modesty expected in interaction with others on the other. Suárez-Tejerina (2005) offers a contrastive analysis of English and Spanish book reviews, looking into eval-

uative language and its anchoring in the move structure of the text. Römer (2005) investigates the expression of negative assessment in linguistics book reviews, looking for possible gender-related differences in the ways male and female authors criticise other writers. Gender is also considered as a potential factor influencing academic written interaction in Tse and Hyland (2006), who study metadiscourse elements in book reviews drawn from three disciplines in search for gender-preferential features, and D'Angelo (2008), who investigates metadiscourse in a corpus of book reviews across four academic fields in relation to the author's gender and experience. Linguistic manifestations of the reviewer's identity are further explored in Diani (2008), who studies book review articles from the fields of linguistics, history, and economics and demonstrates the complex interplay of various textual voices characteristic of this genre (Diani, 2009a).

The PhD dissertation, whose complex status of an academic education closing event, a career genre and a knowledge contribution often makes it difficult to classify (Johns and Swales, 2002), and selected elements of metadiscourse present in specimens of this genre are analysed in Bunton (1999), who focuses on theses from different disciplines, written by non-native speakers of English. Citation practices in PhD dissertations by native speakers of English doing research in three subject areas are analysed in Thompson (2005), who demonstrates that there is a variation in attribution and self-attribution strategies and in the motivation for citation across the studied disciplines. Swales (2004) devotes one chapter of his volume to this text type, discussing its structure, linguistic features, and typical rhetorical moves and putting forward some suggestions as to how to help less experienced researchers in the process of writing.

Compared to written forms of discourse, spoken professional academic genres appear to have received less attention in linguistic research, although Swales' *Research Genres* (2004) is an important piece of evidence to the contrary. Those more thoroughly studied include the conference paper — discussed, e.g., in Rowley-Jolivet (2002), who focuses on the use of visuals in scientific conference presentations, in Swales (2004), who explores the preliminary, provisional nature of the conference presentation, in Hood and Forey (2005), who investigate introductory strategies in plenary conference talks, in Morell (2014), who undertakes a multimodal analysis of oral presentations delivered by speakers of English as an additional language at international conferences, and in Fernández Polo (2014), who studies self-mentions and humour as strategies used by native and non-native speakers of English during conference talks — the PhD defence, with its cultural and disciplinary variation dis-

cussed in Swales (2004), who examines the structure of the US defence in the past and today, and the architecture presentation, possibly a border case between student and career genre, investigated in Morton (2009), who analyses presentations prepared and delivered orally by novice and near-expert students of architecture at an Australian architectural school.

Apart from such “real” professional text types, there are also occluded genres — some of them listed in Swales (1996: 47) — which accompany the research process and, although themselves never published, support the publication of other genres and in general assist in the process of knowledge generation. The submission letter, for example, which accompanies an article submitted for publication, is analysed in Swales (1996), who identifies and compares its rhetorical components in texts written by native and non-native speakers of English. Connor and Mauranen (1999) study the move structure, the linguistic realisations of the moves and the linguistic mechanisms of persuasion of the grant proposal. Finally, the peer review report is examined by Fortanet (2008a, b), who analyses its evaluative language and move structure in terms of criticism, recommendation and request for clarification patterns.

With regard to pedagogical genres, efforts to describe their organisation and distinctive linguistic patterns have concentrated on the textbook, especially on its metadiscourse (Hyland, 1999b, 2000), hedging strategies (Hyland, 1994), evaluative resources (Freddi, 2005b), and authorial attitude markers (Abbamonte, 2008), and the lecture (Bamford, 2005; Thompson, 2006; Crawford Camiciottoli, 2007). Particularly valuable insights into vocabulary patterns in textbooks and classroom lecturing come from Biber’s (2006a) important study into university registers.

Linguistic studies into academic text types, some of which we mentioned in this section, often take shape of in-depth research into specific discourse segments, functions and moves. The next section offers a brief overview of major topics in EAP literature in general and academic genre analysis in particular, from rhetorical function of specific language resources, through evaluation and metadiscourse, to modality, which is the principal focus of this volume.

1.3.3 Principal themes

Research into linguistic features of academic discourse and its rhetorical organisation has developed along various, often coinciding lines, with genre-based analyses briefly outlined in the previous section taking a prominent place. Another important strand of linguistic inquiry addresses specific rhe-

torical functions to which academic authors put various language resources in an attempt to guide the readers in the interpretation of the text, substantiate their claims in a way which is both convincing and socially acceptable, present themselves as competent researchers and skilled writers, and control the flow of information in the ongoing discourse. Examples of this type of research are Swales et al. (1998), where strategic uses of imperatives in research articles from a variety of disciplines are examined, some of them serving to engage the reader in the developing argumentation, some others to achieve a higher degree of text compression, Tarone et al. (1998), where the frequency and rhetorical functions of passive and selected active constructions in English astrophysics papers are compared, and Espinoza (1997), where the use of passive constructions in English and Spanish academic texts is investigated, with some implications for the practice of teaching ESP. Łyda (2007a, b) studies the relation of concession in academic spoken English and, on the basis of the MICASE (Michigan Corpus of Academic Spoken English), demonstrates its potential as a consensus-building device which can moderate the categorical impact of claims and helps accommodate them in the present state of knowledge. Contrastive relations, placed alongside concession as a subgroup of adversative rhetorical strategies, are analysed in Golebiowski (2009), who focuses on written sociological discourse to show a cline of adversativeness and the varying degrees of explicitness in signalling this type of relation in English texts written by native speakers and by users of English as an additional/ second language. Various rhetorical functions of conditional clauses across different genres of medical academic discourse are examined in Carter-Thomas and Rowley-Jolivet (2008), who point out that many uses which depart from canonical patterns, such as, e.g., discourse management conditionals, fall outside the scope of EAP instruction materials. Another study on the use of the clause of condition in linguistics research articles shows that in many cases it relays interpersonal rather than ideational meanings and can act as a tool for constructing credibility, engaging the reader, and restricting the validity of a claim (Warchał, 2010b). Burrough-Boenisch (2003) discusses the academic conventions for tense use and draws attention to some rhetorical consequences of tense change. Rundblad (2008) examines impersonalisation strategies, such as passive and metonymic constructions, used to obscure authorial and non-authorial agents in medical research articles. Impersonalisation is also discussed in Kerz (2008), who demonstrates that it often motivates nominalisations in academic texts and analyses the preference for nominal writing style in terms of “optimal viewing arrangement” (Kerz, 2008: 129), condensation strategy, and syntactic flexibility of complex noun phrases. Flowerdew’s

(2003) study on signalling nouns — abstract nouns whose exact meaning must be sought elsewhere in or outside the text — addresses the problem of establishing and maintaining lexical cohesion in academic spoken and written discourse. Noun phrases, or, more specifically, their premodification patterns in a corpus of biomedical research articles, are further discussed in León and Divasson (2008), who point to the conceptually dense, argumentative character of prenuclear modification in Introduction and Discussion sections, which stands in contrast to the factual, informative and less complex nominal structures in Material & Method and Results segments of text. Hewings and Hewings (2002) analyse anticipatory *it*-structures with regard to the types of interpersonal meanings they convey in text, pointing out the differences observed between the use of these constructions in published and student research, especially as regards their emphatic potential.

Another line of study focuses on phenomena which escape grammatical categorisation and can be seen as discourse functions performed by a variety of linguistic resources, often themselves multifunctional. The recognition that academic communication is not a simple recount of research activities or a plain description of observable facts but a complex social interaction involving negotiation of concepts, argumentation and persuasion has compelled many linguists to engage in the study of evaluative meanings in discourse which was once considered a purely objective and impersonal affair. Evaluation, the umbrella term for different kinds of linguistic devices used to express the author's opinion of, attitude or feeling towards an object, state, activity or phenomenon under discussion, studied also as stance (Biber and Finegan, 1988; Conrad and Biber, 2000; Biber, 2006b) and appraisal (Martin, 2000; Martin and White, 2005), has proved pervasive not only in such openly evaluative academic genres as peer review reports (Fortanet, 2008a, b) and book reviews or book review articles (Hyland, 2000; Römer, 2005; Suárez-Tejerina, 2005; Diani, 2009b; Moreno and Suárez, 2009) but also in textbooks (Fredri 2005b), lectures (Bamford, 2005), research articles (Thompson and Yiyun, 1991; Hunston, 1994; Silver, 2003), and research article abstracts (Stotesbury, 2003; Cava and Venuti, 2008), becoming, as Mauranen and Bondi (2003: 269) put it, "a hot topic" for EAP scholars. For some authors (e.g., Conrad and Biber, 2000; Thompson and Hunston, 2000; Silver, 2003), linguistic markers of evaluation — pragmatic markers in Aijmer (2005) — comprise also epistemic and evidential expressions, which encode the estimated degree of probability or certainty the author attaches to a proposition and often evaluation of the source of knowledge behind the claim. Studies of evaluative discourse are then frequently conducted under the label of modality.

Evaluation is sometimes considered under the umbrella term of metadiscourse, a concept introduced into linguistic research in the late 1950s to refer to those aspects of language use which are intended to assist the reader or hearer in the reception and interpretation of a text (Hyland, 2005). That this area may pose problems for less experienced professional writers or for writers in a foreign language has been recognised, among others, by Williams (1990 [1981]), who devotes two sections of his book to “writing about writing” (p. 40) and its types, and Vande Kopple (1985), who provides a systematic overview of different kinds of metadiscourse. The latter also argues for greater attention to metadiscourse markers in composition classes in order to raise students’ awareness of their frequency and functions in different genres, the influence they have on the reception of the text, and possible consequences of their misuse. Vande Kopple’s (1985) classification served as a basis for a typology proposed by Crismore et al. (1993), who in their cross-cultural study retain his basic distinction between textual and interpersonal metadiscourse, with the former term covering elements that help the reader integrate a proposition with the rest of the text, relate one portion of text with another, and organise these portions into a coherent whole, and with the latter referring to items that show the author’s evaluation of and attitude towards the propositional content in terms of its truth, likelihood, importance, expectedness or desirability. Under this view then interpersonal metadiscourse subsumes evaluation and epistemic modality markers.

Although the concept itself is not new, metadiscourse and its scope remains somewhat fuzzy. Some authors prefer to talk about text reflexivity (Mauranen, 1993b) or metatext (Mauranen, 1993a; Bunton, 1999; Fløttum et al., 2006b) if they wish to limit discussion to elements which organise the text and comment on it or on the process of writing rather than contribute directly to the subject matter, to the exclusion of expressions which impart attitudinal meanings, including stance, valuation and engagement. An example of this type of analysis is the cross-linguistic and cross-disciplinary study by Dahl (2004), who shows that metatext in medical research articles is more resistant to cultural variation than metatext in economics and linguistics articles, where rhetorical and intellectual tradition has a greater influence on the writers and the extent to which they are visible in their texts. The distinction between evaluation and metadiscourse is also defended by Ädel (2005), who argues for a separate treatment of linguistic devices that relay the author’s attitude towards the subject matter on the one hand, and references to the ongoing discourse, including its participants, on the other. Her study into argumentative L2 student English shows that Swedish student essays contain more personal

and impersonal metadiscourse than essays written by native speakers, which may be related to the insufficient register awareness in L2 students, to cultural differences in the understanding of what constitutes a well-written piece of argumentative text, and partly to subtle differences between the circumstances in which the texts included in the corpora were produced (Ädel, 2006).

Other authors take a broader view of metadiscourse, which embraces all references to the developing text and the participants in discourse. In his model, Hyland (1998a, 1999b, 2000, 2005) includes not only expressions that reflect on the act of writing or make the relations between different portions of text explicit (i.e., interactive metadiscourse), but also elements that engage the readers in the development of the argument, show the author's involvement in communication and express his/her point of view regarding the propositional content (i.e., interactional metadiscourse). The former category comprises interactive markers, such as: *transition markers*, which are supposed to help the reader link and interpret the ideas developed in the text; *frame markers*, which give the text internal order by marking stages in the argumentation; *endophoric markers*, which refer explicitly to other parts of the text; *evidentials*, which attribute an idea to a particular source; and *code glosses*, which rephrase or elaborate on an idea to ensure understanding (Hyland, 2005: 50–52). These resources have been investigated, among others, by Mauranen (1993a, b), who contrasts the use of connectors — expressions that indicate relationships between propositions and text segments, such as causality, adversativeness, exemplification or resultativeness — in research articles by Finnish and English authors, Bunton (1999), who studies text references — explicit references to other parts of the ongoing text — in PhD theses submitted to various faculties of the University of Hong Kong, Moreno (2003), who focuses on causality markers in academic essays, Fløttum et al. (2006b), who investigate metatext in economic, linguistic and medical research articles, Thompson (2003), who analyses frame markers in academic lectures, Pérez-Llantada (2006), who compares the distribution of textual metadiscourse patterns across MICASE, and Hyland (2005), who discusses both interactive and interactional metadiscourse in selected academic and business genres and in research articles from different disciplines (Hyland, 1998b).

The other category subsumes interactional markers, among them: *hedges*, which reduce the author's commitment to the claim and show the reader that the proposition is a matter of inference or negotiation rather than an established fact; *boosters*, which mark the proposition as certain and often appeal to knowledge the authors share (or assume they do) with the readers; *attitude markers*, which relay the author's evaluation of and attitude towards the prop-

osition; *self mention*, which comprises the ways in which the authors explicitly refer to themselves in the text; and *engagement markers*, which are explicit references to the readers (Hyland, 2005: 52–54). Each of these subcategories proved of interest to linguists and scholars studying academic communication (see, e.g., Gillaerts and Van de Velde, 2010), with a particularly large amount of research done on hedging. Skelton (1988a, b), for example, discusses the role of comments — expressions that qualify propositions with regard to the extent to which they apply and to the writer's commitment — in academic articles, Myers (1989) studies hedges as politeness devices used by academic authors to redress potential face threatening acts, Salager-Meyer (1994) examines the frequency and type of hedges in various sections of two medical genres, Hyland (1994) compares hedging in EAP and ESP textbooks and investigates functional types of hedges and grammatical categories through which they are expressed in scientific research articles (1996, 1998), Crompton (1997) draws attention to their role in academic discourse as signals of new knowledge claims which mark them off from the already established and accepted knowledge that does not need negotiation or approval by the readership, Markkanen and Schröder's (1997) collection presents various perspectives on hedging in academic contexts, and Lewin (2005) discusses authors' and readers' perception of hedges, setting their views against the background of linguistic theory. Cross-cultural studies into hedging — and those concerned with languages other than English — include, for example, Duszak (1994), who in her Polish-English study into the differences in the rhetorical organisation of research paper introductions offers some comments on the type of face-work in which academic authors in these two cultures are involved, Kreutz and Harres (1997), who study downtoners in English and German academic texts,³ Vassileva (1997), who examines various sections of research articles by English and Bulgarian authors (including Bulgarians writing in English), Namsaraev (1997), who presents results of his research into hedging practiced by Russian academic authors, Luukka and Markkanen (1997), who investigate avoidance of personal reference in academic writing as a hedging strategy in Finnish and English (including English texts by native speakers of Finnish), Wojtak (1999), who is concerned with safeguarding strategies employed by Polish scholars, and Vold (2006a), who discusses the frequency and types of hedges in linguistic and medical research articles in English, French and Norwegian.

³ Also Clyne (1994) in his study on intercultural communication includes a section on hedging in texts by English and German academics, among them articles in English by German scholars.

Compared to the work done on hedging, research into boosters, known also as certainty markers (Crismore et al, 1993) or emphatics (Vande Kopple, 1985), has been more modest. Merlini Barbaresi (1987) in her study into epistemic modifiers and inferability indicators in argumentative discourse focuses on the functions of *obviously* and *certainly*, Hyland (1998b) discusses boosters among other categories of metadiscourse in research articles from four academic disciplines and investigates their role as devices for giving force to claims and establishing solidarity with the audience in the scientific letter (2000), Hoey (2000) in his analysis of Chomsky's rhetoric observes that boosters can be used to promote a potentially contentious claim to the status of the obvious, Koutsantoni (2004) analyses certainty markers — their interpersonal function and most frequent realisations — in research articles from electronic and electrical engineering journals, and Warchał (2009) studies the concurrence of *of course* and concessive and conditional statements in linguistics research articles.

Attitude markers have been investigated as a type of evaluative meaning by authors concerned with evaluation in academic discourse, e.g., Hyland (2000, esp. Chapter 3), Römer (2005) and Fortanet (2008a). Hyland (1999b) discusses attitude markers among other metadiscourse resources used in introductory textbooks to assist uninitiated readers and steer them in the interpretation of the text. Soler (2002) contributes to the discussion by her study of adjectives in biochemistry research articles, where she includes data on evaluative adjectives, and Koutsantoni (2004) in her analysis of attitudinal meanings in research articles reports on the frequency, structural types and specific discourse functions of this category of metadiscourse.

Self-mention and engagement markers, the last two subcategories of interactional metadiscourse identified by Hyland, have been studied as signals of authorial presence in a cross-cultural perspective (Vassileva, 1998; Fløttum et al., 2006a; Molino, 2010), as markers of different identities that novice writers bring into their texts (Tang and John, 1999), and as rhetorical emphatic devices which connote authority (Hyland, 2001b, 2002a). These interpersonal resources, which underscore the dialogic nature of academic discourse, are also treated as evidence of writer–reader interaction, as shown in Kuo (1999), who studies personal pronouns in scientific articles from three disciplines, Hyland (2001a), who investigates reader engagement resources in research articles from a wide range of disciplines, Pérez-Llantada (2006), who discusses the use of personal pronouns with expressions announcing the communicative purpose, introducing the next move, and signalling the speaker's intentions in spoken academic discourse, Mur Dueñas (2009), who looks into dis-

course realisations of the writer–reader relationship in business management research articles in English and Spanish, and Vladimirou (2007, 2008), who analyses various categories and functions of first-person pronominal reference in linguistics journal articles written by native users of English and compares these findings with data obtained for Greek authors.

Hedges, boosters, attitude markers, and self mention have also been investigated as resources for the expression of stance, defined as the personal component of meaning conveyed alongside the propositional meaning and involving: “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, 1999a: 101). Hyland discusses stance as involving *affect*, which communicates personal attitudes towards the situation described by the proposition, *relation*, which reflects the kind of interaction the authors have with their readers, and *evidentiality*, which communicates the degree of personal commitment the author has to the truth of the proposition and reflects the pragmatic force attached to the proposition. White (2000, 2003), for example, interprets hedges — and, in general, modal meanings — as resources serving negotiation of concepts and attitudes, as rhetorical tools through which the authors acknowledge other points of view and voices, and as strategic devices for social positioning in relation to the readers, discourse community’s system of values, and other texts rather than simple markers of the author’s mental state or subjective assessment. Conrad and Biber (2000) investigate adverbial markers of stance — among them hedges, boosters and attitude markers — in academic prose, conversation and news reportage, an analysis later continued in Biber’s (2006b) study of stance features in spoken and written university registers. Silver (2003) looks into adverbials of stance in history and economics research articles and examines their context-based roles as hedges or boosters, Hyland (2008a) discusses stance, engagement and authorial involvement in 1.4 million word corpus of research articles, and Vázquez Orta (2010) conducts a cross-cultural analysis of selected epistemic stance markers in business management articles by English and Spanish authors, with important differences observed in the use of hedges and boosters by these two groups of writers.

Of the strands of linguistic enquiry mentioned in this section, evaluation, metadiscourse and stance refer explicitly to the category of modality, with modal expressions functioning as evaluation markers, hedges, boosters and attitude markers. The relationship between modality and hedging — and indeed the other subcategories of metadiscourse — is aptly encapsulated in the following quotation from Vassileva (1997: 205): “hedging reflects the rela-

tion between the writer and the reader, not between the writer and the proposition . . . In other words, hedging is not ‘modality’ in the widely accepted meaning of the notion . . . but rather a specific employment of modality devices for the realization of certain politeness strategies.” Modality is then a semantic category of devices which in discourse can be put to realise different pragmatic functions.

A comparative, cross-cultural approach to the study of modal meanings in academic discourse has been taken, for example, by Ventola (1997), who analyses selected modal markers in English texts written by Finnish scholars and contrasts her findings with data for native speakers of English, Vold (2006a), who examines epistemicity in English, French and Norwegian research articles from linguistics and medicine, Janik (2009), who compares evidential resources in German and Russian published papers, and Warchał (2010a, c), who discusses the use and functions of high-value epistemic markers in English and Polish. Modal verbs in English academic discourse have been studied by Thompson (2002), who carries out an analysis of their use, meaning and distribution in a corpus of English doctoral dissertations in two disciplines, Keck and Biber (2004), who investigate their frequency and functions across spoken and written university registers, Crawford Camiciottoli (2004), who focuses on the use of modals in business lectures, Warchał (2007, 2008) and Warchał and Łyda (2007), who look into different discourse functions of *must* and *should* in linguistics research articles. Rezzano (2004) analyses modality markers in Discussion/ Conclusion sections of articles, Łyda and Warchał (2008) discuss the concurrence of modal verbs and the rhetorical relation of concession, Thompson et al. (2008) investigate lexical items which express epistemic modality in biomedical research articles with a view to proposing a modality classification scheme for this text type and testing an annotation system, and Lafuente Millán (2008) carries out an analysis of modality markers and their specific discourse functions in academic texts in four disciplines.

As the heading shows, it has been the aim of this section to outline the major directions in which research into academic communication has developed over the recent years — the pivotal concepts of genre and register, which have inspired much of the EAP literature and influenced thinking about and the practice of EAP teaching, the growing interest in evaluative meanings, which has shed a new light on academic discourse as one constructing knowledge rather than merely reporting it, the notions of metadiscourse and stance, which have shaped thinking about scholarly communication as an essentially interpersonal activity, involving argumentation, negotiation and persuasion, and modality, concerned with the resources academic authors use to convey

extrapositional meanings. Apart from the range of topics, equally impressive is the amount of research done specifically into English academic discourse, research frequently conducted by scholars for whom English is neither the first nor the dominant language. The aim of the last sub-section will then be to look into the special role of English in the global generation and exchange of knowledge.

1.3.4 English as an academic lingua franca

The status of English as the leading language of international communication seems indisputable. As Ammon (2010: 116–117) notes in his paper on recent trends in world languages, “[there] is virtually no descriptive parameter or indicator for the international or global rank of a language which, if applied to today’s languages world-wide, does not place English at the top.” Introduced in 1976 by Smith, the concept of English as an international language points to the fact that it serves as a medium for communication not only between the non-Anglophone part of the world on the one hand and native English speakers on the other but also for cross-cultural contacts between users for whom it is a second or additional language — often the only one they share. A situation where a language is commonly used in contacts between sides of which neither speaks it as a mother tongue must of course raise questions about the ownership of English (see, e.g., Strevens, 1987, or Brutt-Griffler, 2002 for a more comprehensive treatment of the spread and change of World English), which, as Crystal (2003 [1997]: 69) points out, has three times as many non-native as native speakers. Another question concerns its “legitimate” variety or varieties, since, a (joint) official language in such countries as United States, Great Britain, Ireland, Australia, Canada, and New Zealand (or in *the inner circle*, Kachru, 1988), English is also the language of formal instruction in higher education institutions in the former British colonial territories (i.e., in *the outer circle*, Kachru, 1988), where it developed distinctive regional features and patterns. In his overview of the international status of English, Sharifian (2009: 2) points out that English as an International Language is not identified with — or limited to — any particular variety, with all its dialects serving as a means for intercultural communication, a means to which speakers of different cultural and linguistic backgrounds contribute in innovative ways to realise their diverse communicative goals and needs (Dewey and Jenkins, 2010).

The rise of English as a global language — now the most frequently chosen second language to learn, spoken by one fifth to one quarter of the world’s

population (counts vary depending on the assumed competence) and boasting the greatest number of non-native speakers (Crystal, 2003) — can be seen on the one hand as a result of past political domination, geographic mobility and colonial ambition of the British Empire, and on the other as a consequence of the present economic status of the countries where it is the principal language, in particular the unchallenged position of the US as the world's economic tycoon. Since economic strength in important ways conditions technological and scientific development, it is not surprising that a vast amount of research is now published in English, which means, as Flowerdew and Peacock (2001) point out, that some knowledge of this language is virtually indispensable to anybody who needs access to recent scientific data.

Writing in 1990, Swales notes that although “the anglophone grip on published research communications is both strong and tightening” (p. 97), there is a danger of overestimating the domination of English in this sphere of life — according to some counts, reaching 80% of scientific output — due to the bias of the bibliometric tools, which tend to overselect journals published in the technologically more advanced and hence English-speaking parts of the world. Generally, he observes, the more specialised the sector of knowledge, the stronger the preference for English as the language of publication. The choice of English in such cases enables cooperation and exchange of information between a handful of scholars working on the same closely defined issue, scattered all over the world, often each coming from a different cultural and linguistic background. The proportion between research published in English and in national languages depends also on the extent to which a sector addresses more generally relevant issues or represents globally rather than locally valid research interests (Swales, 1990).

Fourteen years later, Swales observes that with international scientific journals worldwide switching to English, with the growing number of doctoral dissertations written in English rather than in national languages, and with the increasing administrative pressure on scholars to publish in English — both for prestige and for funds — there can be little doubt that English has become an academic lingua franca. Indeed, if there are any doubts as to its international character, they are connected with the disproportion — in some disciplines at least — between the amount of scholarly output published in the world's top scientific journals by Anglophone and non-Anglophone authors rather than with the spread of English across academic communities (Swales, 2004).

The international career of English in academic fields is fuelled by the increasing pace of “doing science”, with the cycle of planning research, doing research and publishing research, especially in fast-moving disciplines, com-

pressed to the minimum. While more and more scientific data are published every year — and a considerable proportion of these in English — non-Anglophone academics are becoming acutely aware of the fact that in order to keep in step with disciplinary developments and be able to contribute their share to the field, they need immediate access to recent findings. Knowledge of English therefore, although itself not a warrant of such access, appears a necessary condition to academic success.

Secondly, as Mauranen (2007) points out, the position of English as an international language of scholarship derives from the mobility of academic communities, which is now witnessed at virtually all levels of education and all stages of career. Increased possibilities of cooperating, forming research networks and embarking on international research projects mean that scholars coming from different linguistic and cultural backgrounds need a lingua franca to function in socio-culturally diverse, often multilingual contexts not only within the bounds of academia but also in less institutionalised frames. English — the world's biggest language in terms of published research, associated with technological and scientific development, and the most popular second language learnt worldwide — often appears a ready-made solution to such communicative challenges and a natural choice when it comes to international academic contacts.

Thirdly, Swales (2004) observes that the saying “publish or perish” has in recent years undergone a transformation into “publish in English or perish”. Academic institutions are systematically encouraging their members to publish their findings in English rather than in national languages. In Poland, for example, the annual assessment of the academic potential of a university division is based on a score calculated, among other parameters, on the basis of the number of texts published by its members in journals and other sources which are themselves ranked — a practice which is not unusual elsewhere. It is interesting to note, though, that in the case of journals which accept contributions in Polish and in English, or collected works published locally, a research article or chapter in English will in most cases bring the author (and the home institute) a higher score than a contribution published in Polish in the same source.⁴ The ability to write in English, to engage actively in the international exchange of ideas is therefore an important element of academic competence and to a large extent determines one's position in the academic discourse community.

⁴ See *Journal of Laws of the Republic of Poland* (Dz.U.) 2010 No 93, item 599.

As Mauranen (2007) notes, English as an academic lingua franca is intrinsically diverse, with the diversity related not only to the absence of one model variety of English for international communication, but also, or perhaps mainly, due to different levels of proficiency and different first languages of ELF users. The first language brings with it its conceptualisations, social structures, and intellectual traditions, which are all likely to influence the linguistic choices, argumentative structure and organisation of an academic text in English. The next section addresses the context and specific features of Polish academic communication, focusing on intellectual tradition and affinities, cultural assumptions about “doing science” and teaching writing, and contrastive studies.

1.4 Polish academic discourse: Previous studies

Scholarly Polish became established as a variety of the national language in the Age of Enlightenment, with Polish used by Polish scholars in the vast majority of scientific writings, textbooks and popular science texts across a wide range of disciplines: medicine, natural sciences, mathematics and humanities (Gajda, 1990). Gajda (1990) observes that much of Polish scientific terminology dates back to this period. The growing importance of Polish in the development and distribution of knowledge coincided with the last partition of Poland, which disappeared from maps of Europe for more than one hundred years. The scholarly variety of Polish was therefore important in many ways that went beyond the professional and the academic. It became a means of preserving the national language, intellectual culture, traditions and distinctiveness, it contributed to the sense of national identity and was a source of national pride in times when the state did not exist. Its culture-preserving function might have added to the high status of the intelligentsia and knowledge in Poland and to the elitist rather than egalitarian view of academic communication.

Gajda, one of the most prominent authors on academic Polish, in his 1982 monograph on the language of science makes the following observation: “Today in order to produce scholarly texts it is not enough to be able to write or, more generally, to speak; it is necessary to master the scholarly stylistic norm” (Gajda, 1982: 99, trans. KW). Because of the internal diversity of scientific language, we have to talk about norms rather than a single stylistic model, with the system of norms reflecting the inherent complexity of scholarly communication. Gajda (1982) enumerates stylistic subsystems (registers) identified

with regard to the discipline, the relation between the author and the reader (theoretical, applied, educational and popular), and the genre. On the basis of František Miko's model of stylistic analysis, developed in the 1970s, he distinguishes three core components of the scholarly style, whose concrete realisations depend on the individual subsystem and its preferences: the constative component, responsible for expressing information about the world, the conceptual component, responsible for transferring logical relations, and the operational component, which controls the relation between the writer and the reader. The first component corresponds to the thoroughness of treatment of the subject matter, lexical density, and the use of terminology, the second — to the degree of abstraction, and the third — to the mono- or dialogic nature of text and the degree of author/ reader presence. Combination of these three components, constrained by the register, results in a concrete stylistic realisation of a scholarly text. To these parameters — disciplinary, generic and operational — one has to add cultural assumptions about doing and writing science.

In his 1981 essay, Galtung contrasts four intellectual styles — general culture-bound approaches to what constitutes a successful academic text and a valuable scholarly contribution, manifested in the ways claims are put forward, theories developed, arguments presented, and works of others invoked — Saxon, Teutonic, Gallic and Nipponic. He argues that specific difficulties members of these intellectual communities report to have communicating their ideas to members of other cultures may result from the lack of awareness of “the peculiarities of their community” (Galtung, 1981: 817) and understanding of the peculiarities of other groupings. Of these four styles, Nipponic, characteristic of eastern cultures, is marked by the avoidance of open evaluation and polemics, compliance with opinions of others, and deference towards other experts, in particular teachers or mentors. Texts by scholars representing this intellectual community tend to be reader-responsible, with the main responsibility for discovering the global meaning of the text, determining the relationship between its parts and identifying the author's goals resting with the receiver (Hinds, 1987; see also Section 1.2).

By contrast, the Saxon style, exemplified by the Anglophone academic culture, prioritises debate, weighing arguments, evaluating counterarguments, and negotiating concepts and stands. It favours the dialogic formula which takes into consideration the reader and the wider discourse community — the knowledge they are assumed to share with the author, the texts they are familiar with, and the discourse and content expectations they have. Texts originating in this intellectual culture are typically writer-responsible, with the primary responsibility for successful communication resting with the author

(Hinds, 1987). This is why a greater importance is attached here to the clarity of exposition, as shown by the preference for linear development of argumentation, care taken with the presentation of data, and a rich repertoire of interactive (textual) metadiscourse markers (Kachru, 1987; Duszak, 1997a).⁵

The Gallic style combines preoccupation with clarity and the concern with the elegance of expression and discipline of organisation. As Siepmann (2006: 134) observes, “[nowhere] is there such an abundance of style and other language guides as in France; and nowhere does there seem to be such ironclad agreement on what constitutes good style.” Among the characteristic features of texts which originate in this intellectual culture, the author mentions linearity of argumentation, explicit coherence patterns and high frequency of textual metadiscourse markers, all of which contribute to the writer-responsible nature of writing.

In contrast to both Saxonian and Gallic styles, the Teutonic intellectual culture shows little interest in organisation and form of the argument and focuses on the content, in particular on its solid theoretical foundations. Rich theoretical and historical background, usually introduced by authors representing this intellectual style, reflects the value attached to knowledge itself and the need to confirm the author’s credentials as an expert. Hence texts written, e.g., by German scholars tend to be reader-responsible, digressive rather than linear, with few cohesive devices and with coherence which often must be reconstructed by the reader (Clyne, 1987a,b, 1994). There is a preference for contemplative rather than interpersonal rhetoric of exposition. Another feature of this style is the propensity for stressing academic conflict and more direct polemic with other authors or approaches (Clyne, 1994). Elements of the Teutonic intellectual style, ascribed to German scholars, have also been identified in Russian scholarly culture as well as in Czech and Polish academic writing, which has been influenced by German (and, in some fields at least, Russian) thought, literature and academic tradition (Čmejrková, 1996; Čmejrková and Daneš, 1997; Duszak, 1994, 1997b). It can thus be expected that rhetorical practices typically employed by Polish scholars are likely to differ from those used by their English-speaking colleagues with respect to such features as: the degree of linearity/ discursiveness, the amount of theoretical background, lexical density, the explication of key terms and concepts, the degree of confrontativeness, and the amount of metadiscourse.

⁵ But see Biber and Gray’s (2010) discussion of the trade-off between clarity and compactness and the tolerance of economy-driven inexplicitness in academic writing.

Perhaps the most noticeable feature of scholarly Polish is that, in spite of the fact that argumentation and hierarchical thematic division are not unknown in this writing tradition (Gajda, 1982: 131, 153–154), Polish research articles often take the form of continuous, unsectioned text (Duszak, 1994). They typically involve side matter, formally marked off from the main text by such exponents of digressiveness as parentheses, font type, punctuation or position (as end- or footnotes; Gajda, 1982: 154–157). They tend to be discursive rather than linear but, as Duszak (1997b) shows, digressiveness in Polish often coincides with elaboration rather than results in a departure from the main point of argumentation and is frequently accompanied by formal metatextual clues. As regards the importance of theoretical background, Polish authors often feel compelled to present explicitly and in detail the conceptual-terminological apparatus on which they rely and to precisely define the terms they use — a well-marked step which Duszak (1994: 307) calls “preparing the tools”. This results in high intellectualisation of Polish academic discourse, a feature emphasised by Gajda (1982, 1990), Mikołajczak (1990), and Duszak (1998b).

Polish authors of research articles do not always find it necessary to explicitly present the main thesis in the introduction, and if they do announce the purpose of their work, they tend to downplay their contribution using formulaic expressions which qualify and limit its scope (Duszak, 1994). Moreover, Duszak (1994) demonstrates that they often adopt a defensive tone in stating clearly what they do not intend to say or do, in this way negatively defining their objectives and avoiding criticism from potentially disappointed readers.

As for the degree of confrontativeness, data collected by Duszak for Polish linguists do not conform to the Teutonic model but, conversely, show that Polish authors tend to be more tentative in the way they challenge other authors' views and often balance their criticism with positive remarks on selected aspects of the texts invoked (Duszak, 1994). It is worth noting that although Duszak's corpus is limited to introductions and so her findings concerning the degree of tentativeness, metadiscourse and aggressiveness refer to this segment only, similar results were also reported by Wojtak (1999), who analysed fifty texts — monographs and research articles — representing humanities. Wojtak (1999) discusses self-protective strategies employed by Polish academic authors, among them: authorial exclusive *we*, 3rd person singular forms referring to the author, formulaic expressions used to reduce the scope or importance of the text — e.g., by presenting it as a preliminary study, a general outline or the first attempt at understanding the problem — or to emphasise the complexity of the problem under analysis, and expressions limiting the author's commitment to the statement. Also Żydek-Bednarczuk (1999), who focuses

on spoken academic Polish, reports that Polish scholars often balance their criticism of others with positive comments ('praise-to-criticise' schema) and hedge their critical remarks — both by using tentative forms and by admitting their own potential ignorance — especially if they are aimed at experts.

In their discussion of "context of commentary" in textbooks, Ostaszewska and Sławkowa (1996) draw attention to the fact that in passages where authors elaborate on an issue or illustrate a problem, they often attempt to establish a more direct relationship with the readers by involving them in the ongoing argumentation with epistemic markers, inclusive *we* and conditional clauses. They also observe that these portions of text are often marked off from the rest by a more frequent use of *verba dicendi* — not infrequently accompanied by epistemic and conditional markers.

Contrastive Polish-English studies into the organisation of academic texts and preferred communicative strategies have been pioneered by Duszak, whose Move Analysis of introductions to linguistics research articles shows that Polish authors tend to downgrade Move 3 and be more tentative, indirect and vague in its realisations (Duszak, 1994, 1997a, 1998a). She also demonstrates that there exist significant differences between the school genres on which Polish and English educational systems rest. The English argumentative-expository essay and the Polish "small treatise" have evolved in response to different teaching priorities and expectations towards an intellectually mature exposition. While the English essay lays emphasis on practical argumentation skills and rational account of a problem, the Polish small treatise is more contemplative and monologic in nature, leaning towards literary forms of expression, often more associative and subjective in tone (Duszak, 1998b). As Duszak observes, it is an exercise in creative writing rather than a task with a specific rhetorical purpose. What is more, Duszak argues that the Polish educational system does not explicitly teach students how to convincingly present their case. Instead, the guidance they receive is largely limited to stylistic matters, coherence and the global organization of the text, which should be framed by an introduction and a closing paragraph referring back to the beginning (Duszak, 1998b). This attitude to teaching formal written exposition, in which a problem is examined intellectually and the results presented to the reader, must also contribute to the differences between Polish and English professional academic genres.

Other contrastive studies have focused on specific resources, text segments, or strategies rather than the global structure of text. Golebiowski (1998) investigates introductions to research articles from the field of psychology written by Polish scholars in English and in Polish in terms of their linearity, defini-

tion of key concepts, and presentation of background knowledge. Compared to the available data on article introductions by English writers, the texts studied were found to contain many digressions, whose function was to supply background information, to review literature in the field, to consider in detail various theoretical issues related to the problem area, to develop and precisely define key concepts, and to provide elaborate justification for the author's methodological decisions. Golebiowski remarks that introductions by Polish authors "often resemble abbreviated statements of all available knowledge on a topic" (p. 82) and in this respect come close to Russian and German academic prose. Moreover, her research has shown that a special role in academic articles by Polish writers is played by recapitulations. After a digression, when the author returns to the main line of argumentation, Polish scholars tend to restate the main objectives of their text to set the reader on the right track.

Like Duszak in her 1994 study, Golebiowski (1999) also attempts to implement Swales' CARS model of article introductions (Swales, 1990) in an analysis of the introductory sections in the corpus she compiled. The analysis of Polish-language introductions in terms of Swales' moves proved impossible because the strategies applied by the authors, marked by tentative, qualifying language, did not yield to this type of examination. As for the introductions written by Polish scholars in English, Move 1 — *Establishing a territory* — tended to be realized as a comprehensive presentation of background knowledge, with extensive reviews of previous research; Move 2 — *Establishing a niche* — was largely absent; and Move 3 — *Occupying the niche, Outlining the purpose* — while present, sometimes occurred at the beginning of this text segment and tended to reappear several times as the introduction developed. Golebiowski (1999) points out that the differences between the organization of introductions written by Polish scholars in their mother tongue and in English must result from their awareness of the textual schemata accepted by the Anglophone academic community as valid for a scientific article. Still, the structure and rhetoric of texts written in English by Polish researchers on the one hand and by their English-speaking colleagues on the other appear so different that it is difficult to study them applying the same model of analysis.

In a later article Golebiowski (2007) presents results of a case study in which she compared texts written in English by native speakers of English and by Polish authors writing for the international audience and for the Polish academic community. The texts were compared in terms of explicit signals of organising relations, such as advance organizers, introducers (content previewing structures) and enumerators. These elements of metadiscourse proved much more frequent in the text by English authors than in either of

those written by Polish writers; the text with the lowest number of markers of organizing relations was the one addressed to the local, i.e., Polish audience. English texts by Polish authors were thus found to be more demanding for the readers and their processing abilities, more monologic and reader- rather than writer-responsible.

Warchał (2010a, c) carries out an analysis of high-value epistemic modal verbs in English and Polish research articles to show that they are much more frequent in English texts, although she points out that Polish authors may prefer other markers of certainty, like adverbs or phrases with adjectives and nouns which express confidence (Warchał, 2011). Łyda and Warchał (2011) study litotic structures in English and Polish research articles by linguists and biologists. Their results show that Polish linguists use negated negation twice as often as their English colleagues, which may be related to the formulaic, phraseological status of many such structures in formal varieties of Polish. The authors also report that, although litotes is often considered on a par with understatement, in many cases litotic constructions in Polish texts function as attention-grabbing devices rather than downtoners.

In a recent study, Kowalski (2014) investigates positive self-evaluation and negative other-evaluation markers in linguistics research articles written in L1 English, L1 Polish and L2 English by Polish scholars. The author shows that in the case of positive self-evaluation, it is the language used that seems to be the major source of existing differences. By contrast, in the case of negative other-evaluation, it is the cultural background of the authors, irrespective of whether they write in L1 or L2, that seems to be the stronger factor. The results also indicate that these culture- and language-dependent differences tend to level out in time, which may signal that disciplinary discourses are becoming more and more uniform.

1.5 Concluding remarks

The aim of this chapter has been to take a bird's eye view of academic discourse and its internal complexity resulting from disciplinary divisions, a rich system of genres it utilises, different audiences and their specific expectations, and cultural diversity. It has also aimed to identify the main lines of research that have been undertaken into academic communication: genre analysis, investigations into lexical and grammatical argumentation resources, study of

evaluation and metadiscourse, and analysis of modal markers. Naturally, this is a simplified picture, with much of the nuances flattened out and less central but not less thought-provoking strands of research left out or swallowed up by those which have been more prolific or popular, but this is the cost of attempting to present a complex phenomenon in a narrow space of text without losing the sense of its unity. Finally, it has outlined the features of Polish academic communication, identifying the areas where Polish and English strategies have been found to differ.

The present volume undertakes a cross-linguistic and cross-cultural analysis of the representation of a broad semantic category of epistemicity in a “focal” professional academic genre in English and in Polish. It falls into line with such cross-linguistic and cross-cultural studies as Duszak (1994, 1997a, b, 1998b), Čmejrková (1996), Vassileva (1997), Salager-Meyer (2003), Shaw (2003), Dahl (2004), Fløttum et al. (2006), Vold (2006a), Golebiowski (2007), Mur Dueñas (2008), Molino (2010), and Vázquez Orta (2010). Focused on modal values, it borrows from studies of metadiscourse (Mauranen, 1993a, b; Hyland, 2005) and evaluation (Hunston and Thompson 2000; Aijmer, 2005; Ädel 2006). Concerned with epistemicity, it explores a broad semantic category, realised by an open set of markers which are themselves multifunctional.

The next chapter offers an introduction to linguistic modality, a survey of modal meanings and values, a systematic overview of epistemic markers in English and in Polish, and a brief review of previous studies into modality in academic discourse. It serves as a lead-in to the presentation and discussion of results of the present research, the aims of which are explained in more detail in Chapter 3.

2. Linguistic modality

This chapter is devoted to linguistic modality and outlines the main approaches to the concept, provides a survey of modal meanings and values, presents epistemic markers in English and in Polish, and offers a brief review of previous research into modality in academic discourse.

2.1 Approaches and concepts

Modality is a semantic category which expresses possibility and necessity rather than produces assertions — true or false — about the world. Heterogeneous and difficult to define, realised by markers which represent various grammatical categories and which not always relay the same modal meanings, its integrity as a concept has been called into question by some scholars who prefer more specific and more tangible labels (see, e.g., Nuyts, 2005). The aim of this introductory section is to present various approaches to the study of modal meanings, different attempts at organising thinking about linguistic modality and the difficulties involved in delimiting the concept. The remainder of this chapter is devoted to a discussion of types of modal meanings and values, an overview of epistemic markers in English and in Polish, and a survey of studies concerned with modality in academic discourse.

2.1.1 Sentential, sub-sentential and discourse modality

One of the ways to systematise thinking about linguistic modality is to divide it into sentential, sub-sentential and discourse modality (Portner, 2009: 2–3). Sentential modality concerns modal meanings which operate on the level of a clause, scoping over the predicate, as in (1), or over the whole proposition, as in (2). Its markers include modal verbs, modal adverbs and conditionals. Sub-sentential modality involves modal meanings which operate in units smaller than a clause, e.g., modal adjectives within a noun phrase, as in (3).

- (1) *To account for the observed developments, we may look into the early history of this discipline.*
- (2) *Perhaps the answer lies in the early history of this discipline.*
- (3) *One possible way of accounting for the observed developments is to look into the early history of this discipline.*

Discourse modality, as Portner (2009: 3) proposes, is an umbrella term for all the modal meanings not easily accommodated by the traditional semantic framework. Maynard (1993), in her study of discourse modality in Japanese, defines it as a broader concept that cannot be limited to a list of lexical exponents but must be seen “through discourse structures and in reference to other pragmatic means” (p. 39). The interaction between modality and the pragmatic component is stressed by Matthews (1991), who points out that modal markers may be associated with the illocutionary force of an utterance and not necessarily limited to the sentential level. This wider perspective is also taken by Fant (2005), who introduces the term discourse modalisation — to avoid the semantics-based term modality — to argue that modalisation processes are discourse phenomena, not restricted to the level of a sentence (as in traditional semantics) but involving face work, interaction management, and other pragmatic planes. This is shown in (4), where the use of modalising expressions is motivated by the speaker’s concern for the hearer’s face rather than by his or her limited commitment to the proposition “your soup was too salty”.

- (4) *Your soup was maybe a bit too salty, love. (Fant, 2005: 109)*

This division is not without problems, though. As Portner (2009) points out, although modal adjectives, such as *possible*, belong to the sub-sentential modality markers, they are often discussed alongside sentential modality

if they appear in embedding clauses of the *it is possible that* type. He also observes that many sentential modality markers express at the same time discourse modality.

It is worth noting that in the generative tradition “sentence modality” has been used to refer to different intentional types of sentences, such as declarative, interrogative, greetings, calls, and exclamations (Polański, 1969), thus overlapping with what some other scholars refer to as sentence mood. Understood in this way, sentence modality is contrasted with verbal modality, which covers such subcategories as indicative, imperative, optative, and subjunctive, that is, what in other traditions is sometimes called verbal, morphological, or inflectional mood (see Section 2.1.2).

In this book, we are concerned mostly with sentential modality in Portner’s sense, but we will also include in the analysis some elements classified as sub-sentential modality markers, such as modal adjectives, certain lexical verbs of thinking, and expressions containing nouns which express modal meanings — if they occur in clauses which require a *that*-clause complement. In this we follow Portner (2009), who observes that many authors regard the relationship between the embedding clause which contains a modal marker and the complement clause as similar to that between a sentential modality marker (e.g., a modal auxiliary) and the proposition.

2.1.2 Modality and mood

Much like modality, mood has been used to refer to different things. Portner (2009: 258–263) discusses three possible applications of this term: verbal mood, notional mood, and sentence mood. Verbal mood concerns the verb inflection, such as the indicative vs. subjunctive verb form, or other language-specific forms broadly related to the realis/ irrealis distinction marked on the verb. Portner labels this category as “dependent sub-sentential modality represented in the form of the verb” (p. 258). Called morphological mood in Thieroff (2010) and inflectional mood in Heltoft (2005), it is a typically verbal category, alongside such categories as person, number, aspect, tense and voice. Some authors define it as “the grammatical expression of modality” (de Haan, 2006: 33); seen in this light, the mood/ modality distinction is analogical to the tense/ time distinction. Notional mood differs from verbal mood in that it is not restricted to verb inflection but includes also certain periphrastic forms, such as, e.g., modal verbs, and relies strongly on the opposition between the factual (realis) and the non-factual (irrealis; see also Section

2.1.5 below for a more detailed discussion of this distinction). If a sentence is in factual mood, the proposition it expresses can be evaluated as true or false in the actual world, as in (5a), which is either a true or a false description of Hania's cat's state and whereabouts. If a sentence is in non-factual mood, the corresponding proposition cannot be evaluated with regard to its truth value in the actual world because it is not asserted, i.e., it is not put forth as true (Green, 2006). This is the case in (5b), which leaves open the question of Hania's cat's location and activity. This use of the term mood is related to sentential modality, and specifically to these approaches which refer to the concepts of actuality, factuality, or irrealis (see Section 2.1.5 below).

(5a) *Hania's cat is sleeping in her wardrobe.*

(5b) *Hania's cat may be sleeping in her wardrobe.*

Sentence mood covers two concepts of mood: one which relies on the clause type, and thus is concerned with such categories as declarative, imperative, and interrogative, and the other which refers to the sentential force, i.e., the force conventionally associated with a sentence on the basis of the clause type it represents: assertion for the declarative, question for the interrogative, and command for the imperative. Some authors consider these distinctions under the umbrella term of modality (e.g., Palmer, 1986; Bybee et al., 1994; Narrog, 2005), others prefer to leave them out as subcategories of other domains (e.g., van der Auwera and Plungian, 1998).

Chung and Timberlake (1985) in their cross-linguistic discussion of tense, aspect and mood use the concept of an event — “whatever occurs (or could occur) at some time period under some set of conditions” (p. 203). An event can be defined in terms of: i) the predicate; ii) the event frame, i.e., the space of time when it occurs; and iii) the event world, i.e., the conditions or circumstances under which it occurs. Mood in their view expresses the actuality of the event by marking the event as actual or non-actual, depending on the relation between the event world and the actual world. An event is actual if the event world corresponds to the actual world, and non-actual in all other cases. The event world may not correspond to the actual world in more than one way: an event may be imposed on actuality, in this way restricting the number of worlds that may develop from the actual world with respect to this event, or an event may be hypothetical. In this latter case the event world is just one of alternative worlds — a set of worlds to which the actual world belongs and which are all “reasonably close to the actual world” (p. 242) for the speaker to consider them as possible at a given time. The former type of non-actual-

ity corresponds to such modal meanings as obligation, permission, volition and ability, and is expressed by the deontic mode; the latter type corresponds to various degrees of possibility and probability and is expressed by the epistemic mode.

Chung and Timberlake (1985) explicitly confine their analysis of mood to bound morphemes attached on the verb. On this approach, mood is a morphosyntactic marking of actuality with respect to two non-actuality parameters: epistemic and deontic. Although limited to verb inflections, this view of mood shows clear affinities with those approaches to modality which rely on the concept of possible worlds and the realis/ irrealis distinction (see Section 2.1.5 in this chapter).

In his critical review of recent studies in the field of linguistic modality, Hoyer (2005) follows Palmer (2001) in distinguishing between the modal system and mood, with the former including a wide range of lexico-grammatical and prosodic means available for marking relevant modal contrasts and the latter limited to verbal morphology as a carrier of modal meanings. Thus, while mood is a strictly grammatical category, viewed as paradigms of verb inflections, sometimes extended to accommodate certain periphrastic forms (see, e.g., Bergs and Heine, 2010), modality is a semantic concept, which involves such notions as, e.g., possibility, necessity, probability, obligation, permission, ability and volition (Barbiers, 2002). Although mood often expresses modal meanings, the relationship between these two categories is not always straightforward. Apart from the fact that modality can be realised by a wider range of markers than mood, including, e.g., modal verbs, adverbs, adjectives, and nouns, Palmer (1986) notes that the choice of mood is in many cases determined grammatically rather than made with a particular modal meaning in mind. Thus mood not always expresses modality and modality does not have to be expressed by mood (Palmer, 1986, 2001; Narrog, 2005).

2.1.3 Modality and the propositional content

One of the problems in the theory of modality is its relation to other components of the sentence. Ransom (1977: 357) defines modality broadly as “information in a sentence which is distinct from the propositional content” and which specifies whether the sentence concerns the necessity or possibility of the proposition being true. This division between the propositional content and modality appears in Fillmore (1967: 44), who speaks of “a tenseless set of relationships involving verbs and nouns . . . separated from what might be

called the ‘modality’ constituent” — the latter realised by such grammatical categories as negation, tense, mood and aspect. The view that modality is external to the propositional content of a sentence is also espoused by Bybee and Fleischman (1995: 2), who speak of modality as “the addition of a supplement or overlay of meaning to the most neutral semantic value of the proposition of an utterance.” Difficulties involved with this approach are discussed in Narrog (2005b), who observes that bipartition of the sentence into proposition and whatever is non-propositional, i.e., modality, blurs the picture instead of clarifying it by putting too many heterogeneous elements — such as mood, politeness markers, speaker’s commitment etc. — under one label. More vexingly still, it would be difficult to find tangible criteria that would help identify concrete elements of a sentence which do not belong to proposition and represent modality. Criticism of this approach comes also from Papafragou (2000a, 2006), who argues that epistemic modality — like other types of modality — in fact contributes to the proposition and therefore cannot be regarded as extrapositional.

Papafragou (2006) shows that the scope diagnostic, conventionally used to demonstrate that epistemic modality does not contribute to the truth-conditional content, does not yield convincing results. According to this test, elements of an utterance which fall outside the scope of the conditional do not contribute to its truth conditions, as in (6a). However, Papafragou points out that there are clear cases where embedding the modality marker in the protasis results in a fully acceptable and natural utterance, as shown in example (6b). In particular, the scope diagnostic test will not exclude from the propositional content those modality markers which can be interpreted objectively (see further discussion in Section 2.1.4 below).

(6a) *?If her cat may be sick, Hania will take him to the vet.*

(6b) *If her cat may be sick, we will leave our dog at home.*

She also refers to the assent/ dissent diagnostic, according to which the hearer cannot challenge or endorse an epistemic modal since it is not possible to challenge or endorse the speaker’s subjective evaluation of his or her own state of mind. Thus, what is challenged in (7) is the embedded proposition, not the modality marker. This would point to the fact that modals do not belong to the propositional content of the utterance — if they did, the speaker would question the modal predication rather than the embedded proposition. Papafragou (2006) argues that indeed some epistemically modalised utterances cannot be challenged, viz., those which are “externally inscrutable”

(p. 1698). At the same time, however, she demonstrates that the speakers can themselves dispute the modal claim, e.g., if they realise that they have ignored some important detail — in this way overcoming the inscrutability constraint, as in (8). Moreover, she suggests that if the epistemic evaluation is performed on the basis of evidence available to some community, and if the speaker and hearer both belong to this community, challenging the modal claim appears possible. Thus, the fact that hearers tend to challenge the embedded proposition rather than the modal predication may point to the fact that at the moment of speaking the speaker's knowledge base is different than the hearer's knowledge base; in other words, that the hearer knows more. If this is the case, the results of assent/ dissent test cannot be regarded as conclusive in showing that epistemic modality falls outside the truth-conditional content of an utterance (see also Portner, 2009, esp. section 4.2.1).

(7) *"Hania's cat must be sick."* *"That's not true"* (= No, he isn't)

(8) *Clark Kent must be Superman. Wait a minute, no, that's not true: Clark Kent is afraid of heights. So Clark Kent can't be Superman.* (Papafragou, 2006: 1698; emphasis added)

2.1.4 Modality and subjectivity

Related to the problematic distinction between proposition and modality is the view that modality expresses subjective values superimposed on, or added to, the objective content of the sentence. Supporters of this approach include Lyons (1977: 452), who observes that modality conveys the speaker's "opinion or attitude towards the proposition that the sentence expresses or the situation that the proposition describes," Palmer (1986:16), who speaks of modality as "the grammaticalization of speakers' (subjective) attitudes and opinions," and Simpson (1993: 47), who refers to it as "a speaker's attitude towards, or opinion about, the truth of a proposition," including his or her "attitude towards the situation or event described by a sentence." The notion of modality as the expression of subjectivity reappears — with varied intensity — also in later works, such as Gotti and Dossena (2001), who focus on modal meanings in specialised texts, Saeed (2003: 135), who treats it as "a cover term for devices which allow speakers to express varying degrees of commitment to, or belief in, a proposition," Dedaić (2004), who studies some of its exponents in political discourse, and in works concerned with modality as the expression of stance (e.g., Keck and Biber, 2004; Marín-Arrese et al., 2004).

Many authors speak of subjective and objective modality. One of those who distinguish between the two is Lyons (1977), for whom the former expresses the degree of the speaker's personal commitment to the truth of the proposition, and the latter — the probability (in view of what is known) that the proposition is true. Papafragou (2006: 1695) develops this distinction by proposing that subjective epistemic modality relates to “what the *current* speaker knows *as of the time of utterance*,” whereas objective epistemic modality bases on the knowledge or evidence available to a particular community. Thus, example (9) will receive subjective reading if the observation is based on the speaker's assessment of the player's looks. However, if the observation is based on the fact that only players of forty or more are allowed to take part, then objective modality is involved.

(9) *This player must be at least forty.*

According to Halliday (1994: 75), modality expresses the speaker's assessment of the probability that the situation or event expressed by a clause has taken, is taking or will take place, or of the obligation involved in it. It is therefore associated with subjectivity. However, the expression of modal values can take either subjective or objective orientation, the former referring explicitly (as a projection) or implicitly (within the clause) to the speaker as the source of judgement, as in (10a) and (10b) respectively, and the latter dissimulating the role of the speaker as the opinion holder, as in (11a) and (11b).

(10a) *I think Hania is there by now.*

(10b) *Hania should be there by now.*

(11a) *It is likely that Hania is there by now.*

(11b) *Hania is probably there by now.*

In her corpus-based analysis of English modal verbs, Coates (1983) employs the concept of the fuzzy set and demonstrates that modal meanings form a cline from the subjective core uses to the objective periphery, with the most frequent intermediate realisations belonging to the skirt. Coates illustrates her point with corpus examples of root MUST. Example (12) below shows the central use of this modal auxiliary, which involves animate subject, lexical verb of activity, the speaker's will to get the subject to perform the action of the lexical verb, and the speaker's authority over the subject. None of these is actually present in (13), which illustrates the peripheral, non-subjective use.

- (12) “*You must play this ten times over,*” *Miss Jarrova would say, pointing with relentless fingers to a jumble of crotchets and quavers.* (Coates, 1983: 34)⁶
- (13) *Clay pots must have some protection from severe weather.* (Coates, 1983: 35)

Hoye (1997) treats subjectivity as an inherent feature of epistemic modality but admits that other types of modality are often non-subjective, with the source of obligation or permission lying in the external world rather than with the speaker — an observation similar to that made by Coates, who reports that typically subjective root uses of MUST were rare in her corpus.

Verstraete (2001) proposes a semiotic perspective on the distinction between subjective and objective modality. He uses the concept of modal performativity understood as “taking positions of commitment with respect to the propositional content of the utterance” (p. 1517) to argue that epistemic modals are always performative and therefore subjective — a different position to that taken by Lyons — that deontic modals can be used subjectively or objectively, depending on the speaker’s commitment to the degree of obligation or permissibility expressed in the clause, and that dynamic modals are always objective, as they do not encode the speaker’s position towards the proposition. Mitchell (2003) in turn remarks that some modality markers — e.g., *had better* and *might as well*, on which he focuses — are inherently predisposed to express subjective modality, both in their deontic and epistemic uses.

Nuyts (2001a, b) observes that not all epistemic expressions are performative. Modality markers are used descriptively if the speaker reports on someone else’s evaluation of the probability of an event or belief that a state of affairs obtains rather than displays his or her own evaluation of its likelihood. “In the speaker’s mind,” he argues, “a descriptive evaluation is really a state of affairs itself, albeit of a special nature: it remains a qualification of another state of affairs, of course” (Nuyts, 2001a: 40). Thus, if (14) is performative, then (15) is not, although epistemic relation is at work in both.

- (14) *It is probable that John made it to the bakery before closing time.*
- (15) *Mary considers it probable that John made it to the bakery before closing time.* (Nuyts, 2001b: 384–385; emphasis added)

According to Nuyts, the subjectivity/ objectivity distinction can only apply to performative uses of epistemic markers. He also introduces the term intersubjectivity to cover those uses of modal markers which refer to a broad

⁶ Notation simplified, with prosodic markings omitted; emphasis added.

consensus — e.g., evaluations commonly accepted by a community — or to common sense reasoning, as in (13) above. The (sub)objectivity dimension corresponds to the nature of the available evidence: intuitive or verifiable respectively. The (inter)subjectivity dimension corresponds to who has access to the evidence: the speaker alone or a broader, more or less precisely defined community: “an evaluation is subjective if the issuer presents it as being strictly his/ her own responsibility; it is intersubjective if (s)he indicates that (s)he shares it with a wider group of people, possibly including the hearer” (Nuyts, 2006: 14). On the basis of his corpus data, he argues that the subjectivity/ intersubjectivity scale can capture various modality readings better than the subjectivity/ objectivity distinction (Nuyts, 2001b).

The distinction between subjective and objective epistemic modality is upheld and redefined in Herslund (2005). He refers to the tri-partite semantic framework for logical structure of utterances applied by Lyons (1977) in his analysis of subjective and objective modalisation. This framework comprises the following components: i) the phrastic, which corresponds to the propositional content; ii) the tropic, which refers to the “kind of speech-act that the sentence is characteristically used to perform” (Lyons, 1977: 749), such as, e.g., indicative or imperative; and iii) the neustic, which expresses “the speaker’s commitment to the factuality, desirability, etc., of the propositional content conveyed by the phrastic” (p. 750), that is to the speaker’s personal involvement. Herslund (2005) suggests that in objective modality the neustic component *I say so*, which Lyons (1977: 799–800) considers a distinguishing feature of objectively modalised utterances, is transformed into *It is said so* and so the source of qualification with regard to the degree of certainty is other than the speaker’s subjective evaluation.

In his analysis of English modal verbs and periphrastics, Westney (1995) observes that there are certain correlations between subjective and objective modalisation on the one hand, and the use of modals and their periphrastic equivalents on the other. In general, there is evidence for association of modal auxiliaries with subjectivity and periphrastic forms with objectivity, but there are also clear cases where this distinction is irrelevant (e.g., for *will – be going to*), relative (e.g., for *should – ought to – be supposed to*), or simply untenable.

To sum up, while some authors agree that epistemic modality is essentially subjective, many draw attention to uses which go beyond personal conviction or belief of the speaker (e.g., Lyons, 1977; Nuyts, 2001a, b; Herslund, 2005; Papafragou, 2006), that is to those which are non-subjective. Non-epistemic modality is associated with subjectivity if it expresses the speaker’s involvement (as a source of obligation or permission); otherwise it is objective

(e.g., Coates, 1983; Høye, 1997; Verstraete, 2001). Narrog (2005a, b) raises important objections against considering subjectivity a definitional property of modality. He points out that subjectivity in discourse can be encoded in many grammatical and lexical ways and that there are markers of subjectivity — the attitude of the speaker, his or her position towards the event expressed by the clause, or evaluation of the interlocutor's utterance — which, by all definitions, fall outside the realm of modality. Subjectivity cannot therefore be regarded as a distinctive feature or primary function of modality.

2.1.5 Modality and the realis/ irrealis distinction

Another way of thinking about modality is interpreting it in terms of the realis/ irrealis distinction (Mithun, 1995). Chafe (1995: 350) speaks of realis as an expression of states and events which “are believed by the . . . speaker to accord with objective reality” — on the basis of direct observation, memories of directly experienced past events, or his or her knowledge of the world. Irrealis is an expression of a state or an event which “is imagined rather than directly perceived or remembered” (p. 350).⁷ Kiefer (1997) explains this perspective on modality in the following way:

To conceive of a state of affairs being otherwise [than what it actually is] is to conceive of its being true or real in some nonfactual world(s), or true or real in some state of the actual world at a point in time other than the present moment. The essence of modality consists in the relativization of the validity of sentence meaning to a set of possible worlds. (Kiefer, 1997: 242–243)

Kratzer (1977, 1981) takes the possible-worlds view on linguistic modality as a representation of events or states of affairs which are not impossible but not necessarily actual. “Possible worlds” refers to a set of complete, self-contained versions of the reality, each with its own past, organisation, and order. The actual world — the present now and here with its complex history — is therefore seen as one of the many ways the universe may look like. Kratzer's

⁷ The disadvantage of this approach is that, as Mithun (1995) demonstrates, the categories realis/ irrealis are not stable across languages. Thus, if most languages categorise counterfactuals and conditionals as irrealis, there is less agreement on the classification of imperatives, and still less consensus about the status of negation. See also Palmer (1986) for a discussion of the relationship between modality and other categories, and Narrog (2005b) for other problems related to the realis/ irrealis distinction.

approach to modality markers is essentially monosemantic, in that she proposes that various interpretations of an utterance containing a modal verb arise not as a result of its multiple distinct meanings but as a result of the invariable “kernel of meaning” of the modal supplemented with different arguments provided by the context (Kratzer, 1977: 341). Modal verbs are therefore context-dependent expressions. These context-supplied arguments are usually not explicitly present in the utterance and take the form of *in view of* phrases, as shown in (16a) through (16d).

- (16a) In view of what their tribal duties are, *the Maori children must learn the names of their ancestors.* (Kratzer, 1977: 340)
- (16b) In view of what is known, *the ancestors of the Maoris must have arrived from Tahiti.* (Kratzer, 1977: 340)
- (16c) *If* — in view of what your dispositions are — *you must sneeze, at least use your handkerchief.* (Kratzer, 1977: 340)
- (16d) *When Kahukura-nui died, the people of Kahungunu said:* In view of what is good for us, *Rakaipaka must be our chief.* (Kratzer, 1977: 340)

Her proposal rests upon the concept of conversational background, which is a set of assumptions and available knowledge on the basis of which the modal relation is understood (Kratzer, 1981: 42). This contextual, pragmatic information determines the type of modal relation involved — epistemic or non-epistemic — and so limits the set of possible worlds to which this modal relation applies. In this way, the conversational background defines the modal base as a set of possible worlds which are accessible or, in Butler’s (2003: 973) terms, relevant for interpreting the modal relation. For (17) then, the modal base will include only these worlds where there is/ was Hania, and where a race took place. For (18), the modal base will be restricted to these worlds where there is Jasio and Jasio’s room, and where the speaker has the necessary authority over Jasio. The “force” of the modal relation — possibility or necessity and the degree of obligation — is specified by the semantics of the modal expression (Kratzer, 1981: 42). Possibility expresses a state of affairs which obtains in at least one possible world — but not necessarily in the actual world. Necessity expresses a state of affairs which — in view of what is known or in view of existing obligations — obtains in all possible worlds, including the actual world.

- (17) *Hania may have won the race.*
- (18) *Jasio must clean his room.*

The conversational background — assumptions and expectations guided by our sense of a normal course of events or by our individual, socially shared or imposed system of moral values — determines also the relative plausibility of the possible worlds within the modal base, so that some of them are more probable and others more far-fetched (Kratzer, 1981: 46–47), or their relative distance from the ideal or morally desirable state of affairs. Thus, (19a–c) show the ordering of possible worlds from the most plausible one to a less probable but still possible version, and (20a–c) represent the grading of possible worlds according to their distance from what is perceived by some standards as desirable. Kratzer’s monosemantic approach has inspired many authors who investigate modality from the relevance theoretic perspective (see Section 2.1.6 in this chapter).

(19a) *Hania is most likely to be in her room.*

(19b) *Hania may be in her room.*

(19c) *There is a slight possibility that Hania is in her room*

(20a) *It is absolutely imperative for Jasio to clean his room.*

(20b) *Jasio should by all means clean his room.*

(20c) *Jasio had better clean his room.*

Palmer in *Modality and the English Modals* (1979) uses the term “actuality” to refer to a situation where an event has taken, is taking or will take place. He also refers to the “factual status” of an event or proposition: events which did occur in the past are factual, present events can be factual or not, depending on whether they have been completed before the very moment of speaking, and future events are only potentially so, since their factual status cannot be established in advance (p. 163–164). In this way, Palmer includes the future, usually classified as irrealis in languages where the realis/ irrealis distinction is formalised (Mithun, 1995),⁸ in actuality,⁹ but excludes it from factuality. Modality is concerned with events and propositions whose factual status is uncertain — as shown by true modal auxiliaries (Palmer, 1979) — and which are therefore non-factive (Lyons, 1977: 796). Still, Palmer argues that the study of modality cannot be limited to non-factivity or, in his terminology, to non-factuality because of the problematic status of some unmodalised

⁸ But see de Haan (2006) for languages where the future is a realis category, or where it can be used as realis or irrealis.

⁹ Not without some reservations, though. In fact, Palmer (1979 : 164) proposes that “future actuality is . . . not actuality at all but another kind of modality.”

statements (see Palmer, 1986: 26–29), because of the ability of some modal markers to carry clear implications of actuality (Palmer, 1979: 163f; Westney, 1995: 209), and because of the existing overlaps between non-factual and factual statements which express the speaker's point of view. This last reservation is related to the importance Palmer attaches to subjectivity as a definitional feature of modality (see discussion above) — a view questioned, e.g., by Narrog (2005b), who argues that the realis/ irrealis distinction does not need the additional notion of “speaker's attitude”, “subjectivity” or “point of view” to effectively capture the nature of modality.

Apart from the factual/ non-factual opposition, Palmer (2003) refers to the status of an utterance as an assertion or non-assertion. Modality involves non-assertion. This latter dichotomy is used by Lunn (1995), who in her analysis of the function of the subjunctive mood in Spanish observes that the speaker may refrain from asserting a proposition for the following reasons: s/he has doubts about its truthfulness, the event or the situation expressed by the proposition has not occurred, or the truth of the proposition is presupposed (p. 430). Palmer argues that Lunn's analysis may shed light on some modality problems in English, such as the use of *should* in *that*-clauses after *I'm surprised* type of matrix clause, where there is no need to assert a proposition which is known to both interlocutors.

Larreya (2003) in his analysis of –ed modal forms proposes that these forms of English modal verbs presuppose unreality. The unreality expressed by a modal past form can be absolute if it presupposes counterfactuality, as in (21a), which presupposes “I do not know the answer”, or relative, as in (21b), where the presupposition reads “I am not very likely to win it” (Larreya, 2003: 23)

(21a) *I wish I knew the answer.* (Larreya, 2003: 23; emphasis added)

(21b) *If I won the lottery...* (Larreya, 2003: 23; emphasis added)

The realis/ irrealis distinction, or the concept of actuality, is also close to Papafragou's treatment of modality. In a way similar to Kratzer's, she defines it as a way to think and talk about “states of affairs which are not present in the current situation and may never occur in the actual world” (Papafragou, 2000a: 3). Narrog (2005b) in his appraisal of the major approaches to linguistic modality discusses the various concepts involved in this distinction, such as factuality, reality and actuality, and argues that while the difference between them is largely one of label rather than nature, the term factuality can be recommended as free from misleading technical associations or everyday connotations. He defines modality as follows:

Modality is a linguistic category referring to the factual status of a state of affairs. The expression of a state of affairs is modalized if it is marked for being undetermined with respect to its factual status, i.e., is neither positively nor negatively factual. (Narrog, 2005a: 679, 2005b: 184)

On this understanding, modality leaves the factual status of an event, state of affairs or situation expressed in the utterance unresolved.

2.1.6 Modality and relevance

In Relevance Theory communication involves the speaker, who intends the addressee to believe that the communicated information is relevant, and the addressee, who focuses on what seems to him or her the most relevant in view of the received linguistic input and the linguistic and non-linguistic context (Sperber and Wilson, 1986). On this view, linguistic forms provide only a limited insight into what the speaker has intended to communicate. This undetermined input is then subject to pragmatic inferencing, as a result of which hypotheses about the speaker's intended meaning can be formed and confronted with the receiver's prior knowledge of the world, his or her assumptions, and the information supplied by the immediate context. The hypothesis most relevant to the receiver in terms of these contextual factors is his or her complete representation of the speaker's intended meaning. A number of scholars have found Relevance Theory helpful in the study of modality (e.g., Klinge, 1993; Groefsema, 1995; Berbeira Gardón, 1998; Papafragou, 1998, 2000a).

What all the works investigating modality from the perspective of Relevance Theory seem to have in common is the unitary, or monosemantic approach to the meaning of modal verbs, which in English — as in many other European languages — may function in more than one modal domain (see, e.g., Heine, 1995, Matthews, 1996 and Diewald, 2001 for German; Silva-Corvalán, 1995 and Müller, 2005 for Spanish; Ligara, 1997 for Polish and French; Hansen, 2000 for German and Slavonic languages; Motapanyane and Avram, 2001 for Romanian; Oliveira, 2001 for Portuguese; Wärnsby, 2006 for Swedish; Brantjes, 2007 for Dutch; and van der Auvera et al., 2005 for a survey of modal polyfunctionality in Europe). According to this unitary approach, a modal verb has a single meaning and its various interpretations arise in the process of pragmatic enrichment understood as an assignment of a value to a semantically underspecified item on the basis of the context (Recanati, 2011). This view of modal verbs, influenced by Kratzer's work (1977, 1981), stands in con-

trast to various polysemantic approaches, according to which modals are ambiguous — with their different meanings associated with distinct syntactic patterns (Coates, 1983), resulting from metaphorical extension from the physical domain to the epistemic domain (Sweetser, 1990), and disambiguated by the context (Palmer, 1979, 1986).

In his analysis of English modals, Klinge (1993) turns to the concept of potentiality to specify the semantic field of modal verbs. His analysis rests on the notion of situation representation and world situation. The situation representation is a conceptual representation of a state of affairs the receiver arrives at partly on the basis of the propositional content of an utterance and partly on the basis of inferential processes. The world situation is the referential situation the utterance describes. Modality represents potentiality in the sense that the world situation to which a modalised utterance refers is not verified to obtain. According to Klinge:

when the sentence is used as an utterance, it only signals that there is a POTENTIAL that the SITUATION REPRESENTATION turns out to be a true description of a WORLD SITUATION. The POTENTIAL can become resolved in two ways: one way is that it turns out that the SITUATION REPRESENTATION is a true description of a WORLD SITUATION; another way is that it turns out that the SITUATION REPRESENTATION is not a true description of a WORLD SITUATION. (Klinge, 1993: 324)

Groefsema (1995: 61) proposes that the basic unitary meaning of a modal verb expresses the relation “between the proposition expressed by the rest of an utterance . . . and a set of background assumptions, while putting constraints on what sets of assumptions are recovered during the interpretation process.” These constraints involve the amount of evidence which can be summoned for the proposition expressed by the rest of the utterance (e.g., all for *must* and some for *should* and *may*) and the relation between the evidence summoned and the proposition (e.g., entailment for *must* and *should* and compatibility for *may* and *can*), as shown in Table 2.1 below (*p* stands for the proposition expressed by the rest of the utterance containing a modal verb).

Table 2.1 Semantics of selected modal verbs according to Groefsema (1995: 62)

<i>can</i> :	<i>p</i> is compatible with the set of all propositions which have a bearing on <i>p</i> .
<i>may</i> :	There is at least some set of propositions such that <i>p</i> is compatible with it.
<i>must</i> :	<i>p</i> is entailed by the set of all propositions which have a bearing on <i>p</i> .
<i>should</i> :	There is at least some set of propositions such that <i>p</i> is entailed by it.

Groefsema admits that her four-way analysis does not work for *will*, which may need a different approach or a different set of constraints. Indeed an attempt to incorporate *will* in this system is undertaken by Berbeira Gardón (1998), who supplements Groefsema's analysis with the concept of potential worlds, which he defines — after Wilson and Sperber — as worlds compatible with the hearer's assumptions of the actual world. He proposes that the basic meaning of modals involves situating the state of affairs described by the rest of the proposition in a potential world. On this approach, *will* encodes that the proposition expressed by the rest of the utterance is true in a potential world, as shown in Table 2.2 below (Berbeira Gardón, 1998: 15–16).

Table 2.2 Semantics of selected modal verbs according to Berbeira Gardón (1998: 15–16)

<i>can:</i>	p is compatible with the set of all propositions which have a bearing on p , and the world type is potential.
<i>may:</i>	There is at least some set of propositions such that p is compatible with it, and the world type is potential.
<i>must:</i>	p is entailed by the set of all propositions which have a bearing on p , and the world type is potential.
<i>should:</i>	There is at least some set of propositions such that p is entailed by it and the world type is potential.
<i>will:</i>	p is true, and the world type is potential.

Papafragou (1998, 2000a), inspired by Kratzer's unitary approach (see Section 2.1.5 above), views the root/ epistemic distinction in terms of pragmatic processes involved in the interpretation of utterances which contain modal verbs. These interpretations are restricted by the domain of propositions that have a bearing on p — the proposition expressed by the rest of the utterance containing a modal verb. For example, Papafragou talks about the factual domain, which comprises assumptions an individual entertains of the actual world, and the regulatory domain, which comprises assumptions s/he relies on to regulate the world, including normative acts and laws of nature. Apart from these descriptive assumptions, which are representations — true or false — of external states of affairs, she refers to interpretive, metarepresentational attitudes, i.e., representations of other representations rather than of external circumstances or events. Such interpretive attitudes involve hypothesising, doubting, proposing or wondering, and are the province of epistemic modality. Papafragou (1998, 2000a) argues that the semantic description of a modal verb includes information about the domain(s) of propositions which have a bearing on the proposition expressed by the rest of the modalised ut-

terance. If there are no specific restrictions on the domain, pragmatic inferring supplies information missing from the underspecified semantic content (the process of pragmatic saturation), as in *must* or *may*. If the domain is restricted, the conceptual space available is narrower and pragmatic information is used if necessary (the process of free pragmatic enrichment), as in *can* or *should* (Table 2.3).

Table 2.3 Semantics of selected modal verbs according to Papafragou (1998: 14)

<i>may</i> :	p is compatible with the set of all propositions in domain D (D-value \rightarrow <i>unspecified</i>)
<i>can</i> :	p is compatible with the set of all propositions in domain D (D-value \rightarrow <i>factual</i>)
<i>must</i> :	p is entailed by the set of all propositions in domain D (D-value \rightarrow <i>unspecified</i>)
<i>should</i> :	p is entailed by the set of all propositions in domain D (D-value \rightarrow <i>normative</i>)

Papafragou's proposal has been criticised for replacing the deontic/epistemic dichotomy of polysemantic approaches with another descriptive/interpretive dichotomy and for proliferating levels of analysis by distinguishing different types of descriptive representations and different categories of metarepresentations (Traugott, 2003).

This section has aimed at discussing some of the concepts that have been used in various attempts to define the domain of linguistic modality or have been found to partially overlap with it. As van der Auwera and Plungian (1998) observe, there is no one correct definition — one that is both comprehensive and delimiting. Still, it seems possible to talk about the core of the category, identifiable by a set of criteria, and about its periphery, where not all the standards necessarily apply. Salkie (2009) proposes four such criteria for defining and delimiting the category of modality: the possibility/ necessity component of meaning; the epistemic/ deontic distinction; subjectivity as a feature of modalised utterances; and polarity of modal values. The first criterion, the starting point for many considerations and analyses of modality, is traditionally recognised as indisputable and central for this category (Kiefer, 1997; van der Auwera and Plungian, 1998; Barbiers, 2002; Narrog, 2005b; von Stechow, 2006). The epistemic/ deontic distinction is also firmly established in modality research (Lyons, 1977; Palmer, 1986;), although some authors have preferred to subcategorise modality along slightly different but not necessarily incompatible lines (e.g., Sweetser, 1990; Bybee et al., 1994; van der Auwera and Plun-

gian, 1998), an issue taken up in more detail in Section 2.2 below. Opinions differ with regard to subjectivity, the third criterion proposed, but for many authors it is present in some uses of modal expressions and absent in others (see Section 2.1.4 above). Salkie (2009) argues that modal expressions which involve subjectivity represent a higher degree of modality and so lie closer to the centre of this category. Finally, it is a feature of many modal expressions that they can be placed on a scale representing, e.g., different degrees of certainty, probability, or obligation. Salkie (2009) proposes that modality markers for which a relevant scale can be identified represent a higher degree of modality than those which cannot be seen as points on any meaningful scale. The next section will explore the second and the fourth element from Salkie's set of criteria, focusing on modal meanings and values.

2.2 Modal meanings and values

2.2.1 The epistemic/ deontic distinction and related modal subdomains

Lyons (1977) divides modal meanings into two broad types: one which refers to the truth of the modalised proposition, and the other which refers to the necessity or ability of an agent to perform the action specified by the proposition containing a modality marker. The former type includes alethic and epistemic modality; the latter, deontic modality. Alethic modality deals with logical necessity and possibility. A proposition is alethically necessary if it is true in all logically possible worlds, i.e., if its truth is guaranteed by the meanings of the expressions it contains. In Lyons' example, the proposition *If Alfred is a bachelor, he must be unmarried* is true by virtue of the meanings of the predicates *unmarried* and *bachelor*. A proposition is alethically possible if there is at least one logically possible world in which it is true, i.e., if it is not false on the grounds of the meanings of the expressions it contains (Lyons, 1977: 791).

Epistemic modality limits the speaker's commitment to the expressed proposition. The truth of the proposition is therefore not a function of its logical form but subject to the speaker's evaluation. The limitation operates either on the neustic component *I say so*, producing a subjectively modalised utterance which expresses the speaker's opinion, reports other people's words or

communicates tentative inference rather than states facts of the matter, as in (22a) below, or on the trophic component *It is so*, resulting in objective epistemic modalisation which expresses a quantifiable degree of probability that the situation expressed by the proposition holds, as in (22b) (Lyons, 1977: 797–798). Thus subjective epistemic modality evaluates the degree of the speaker's personal commitment to the truth of the proposition, and objective epistemic modality evaluates the probability that the proposition is true on the basis of available data (see also Section 2.1.4 in this chapter for problems involved with subjectivity as a feature of modality). Coates (1983: 18) in her study of English modal auxiliaries remarks that objective epistemic modality in natural language is usually interpreted subjectively as an expression of the speaker's commitment.

(22a) *Alfred may be unmarried* (e.g., because he has never mentioned his wife)

(22b) *Alfred may be unmarried* (because I know that he belongs to a group of ninety men of whom thirty are unmarried, and so I commit myself to the statement that there is a probability that Alfred is among those thirty men) (Lyons, 1977: 798)

Deontic modality concerns the degree of obligation on or permission to the agent to perform the action specified by the predicate, with obligation corresponding to deontic necessity and permission to deontic possibility, as in (23a) and (23b) respectively.

(23a) You must feed the cat now.

(23b) You may feed the cat now.

Palmer (1979, 2001) speaks of modality of propositions, i.e., modality which expresses the speaker's evaluation of the truth-value or factual status of the proposition, and modality of events, which signals that the situation expressed in a sentence is not actualised but potential. The former type includes epistemic and evidential subdomains; the latter involves deontic and dynamic modality.

Palmer (1986) applies the term epistemic not only to modal meanings that involve different degrees of possibility, necessity, and the speaker's commitment to the truth of the proposition but also to expressions that refer to the evidence the speaker relies on in making a statement. This division corresponds to two subsystems of epistemic modality: judgments, which involve the speak-

er's assessment of the degree of possibility that the situation expressed by the proposition holds — Palmer includes in this group also modal markers signalling inference rather than confidence, as in (24) — and evidentials, which make reference to the type of evidence the speaker has to support the claim (as in, e.g., *the alleged attacker*; Palmer, 1986: 73). In Palmer (2001), evidential modality is included as a subsystem of propositional modality, on a par with the epistemic subsystem (see also Section 2.2.4 in this chapter).

(24) *All the X-rays showed absolutely negative. There was nothing wrong, so it must just be tension, I suppose.* (Palmer, 1979: 44; emphasis added)

Within modality of events, Palmer distinguishes deontic modality, which embraces permission and obligation whose source is external to the agent, and dynamic modality, which concerns “ability and disposition” and involves neutral (or circumstantial) and subject-oriented modality (Palmer, 1979: 36–37). Neutral modality indicates that there are circumstances in the real world which make it possible or necessary for some state of affairs to hold, as in (25a) and (25b) respectively. In either case, there is no involvement of the speaker in that he or she expresses an opinion rather than gives consent or imposes obligation. Subject-oriented modality (abilitive modality; Palmer, 2001) refers to the ability of the subject to perform the action specified by the main verb, as in (26a), or to an essential, necessary characteristic of the subject. The latter case is referred to by Kratzer (1977) as dispositional modality, as in her example below (26b). To these two categories of dynamic modality, Palmer (2001) adds volitive modality, which concerns the willingness of the subject to perform the action of the main verb, as in (26c).

(25a) *The only way you can learn it is to think logically.* (Palmer, 1979: 72; emphasis added)

(25b) *I've got to be at London airport at fourish.* (Palmer, 1979: 92; emphasis added)

(26a) *He can run a mile in five minutes.* (Palmer, 2001: 10; emphasis added)

(26b) *If you must sneeze, at least use your handkerchief.* (Kratzer, 1977: 338; emphasis added)

(26c) *John will do it for you.* (Palmer, 2001: 10; emphasis added)

Kratzer (1977) recognizes also a preferential use of modality markers that corresponds to the speaker's preferences and wishes, as in (27a). This use realises boulomaic modality (bouletic modality; von Stechow, 2006), which indi-

cates desires, likes, and dislikes of the speaker or other individuals, as in (27b) below (Simpson, 1993: 48; Narrog, 2009: 91–95). Nuyts (2006) observes that boulomaic modality can also subsume volition (Palmer’s volitive modality) and that it shows some affinity with deontic modality.

(27a) *When Kahukura-nui died, the people of Kahungunu said: Rakaipaka must be our chief.* (Kratzer, 1977: 338; emphasis added)

(27b) *I wish you would leave.* (Simpson, 1993: 48; emphasis added)

Figure 2.1 below summarises the division into modal subdomains discussed in this section, based on the epistemic/ deontic distinction.

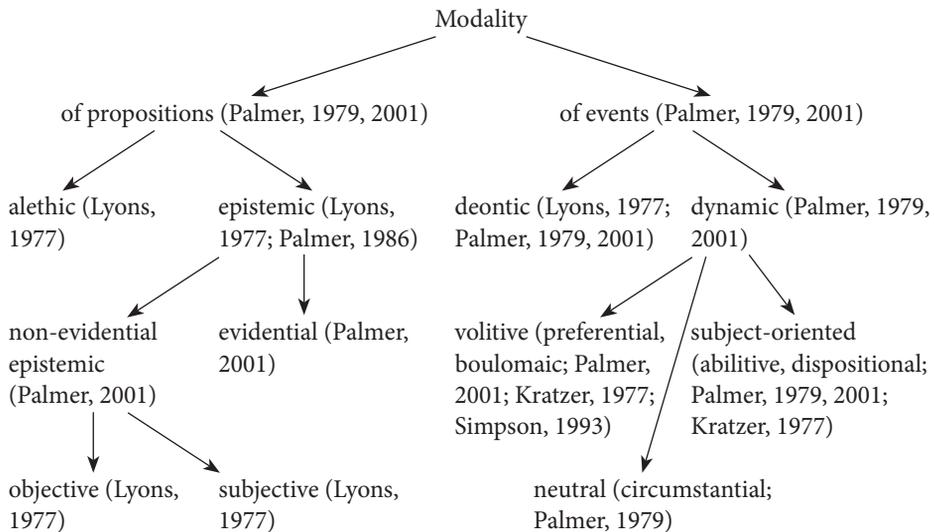


Fig. 2.1 Modal subdomains based on Lyons (1977) and Palmer (1979, 1986, 2001)

2.2.2 The root/ epistemic distinction

Some scholars have divided modality into root and epistemic, with root modality denoting real-world obligation, permission, or ability, and epistemic modality referring to necessity, probability, or possibility in reasoning (Coates, 1983; Sweetser, 1990: 49). De Haan (2006) observes that originally the term “root” was associated with root clauses but has come to be used in place of “deontic” to cover also those non-epistemic meanings which cannot be accounted for in terms of obligation or permission. This division is moti-

vated by the polyfunctionality of modality markers, many of which may function in more than one modal domain. There is some cross-linguistic evidence that epistemic meanings have evolved as extensions of more basic root senses, so that epistemic modality can be viewed as rooted in those other non-epistemic meanings (Bybee et al., 1994; Traugott, 2006). Although the epistemic/ root distinction is sometimes reduced to the difference between epistemic and deontic modality (e.g., Talmy, 1988), root modality functions as an umbrella term for a number of modal subdomains, such as deontic, dispositional, circumstantial, and boulomaic (Kiefer, 1997: 242).

Sweetser (1990) builds on Talmy (1988) and his analysis of modality in terms of force-dynamics, that is in terms of how force-exerting entities interact and how we speak of their interaction. On this approach, root modality can be construed as talking about forces of physical, social, or psychological nature that compel the subject to act or prevent the subject from acting. For example, *may not* indicates an interaction of two forces: the subject's desire or tendency to perform the action expressed by the main verb on the one hand, and an authority's refusal to permit the action on the other (Talmy, 1988: 79, 2000: 441). In her proposal, Sweetser (1990) refers to generalized sociophysical concepts of forces and barriers, where *may* can be viewed as a potential but absent barrier; *can* as a potential force or energy of the subject; *must* as an irresistible force compelling the subject to act; *ought to* as a resistible social force; *have to* as an extrinsically imposed force; and *need* as an internal force driving the subject to perform an action (p. 52–54). She extends this semantic framework to epistemic meanings proposing that epistemic readings of modals arise in the process of metaphorical mapping of social and physical forces and barriers onto the understanding of human rationality. Premises on which speakers base in their mental world are thus construed in terms of forces which constrain them towards or which do not bar them from certain conclusions, as in (28a). Sweetser (1990, section 3.3.2) shows that epistemic and root uses of a modal are parallel, so premises or data on which speakers base their inferences or judgements in epistemically modalised utterances are perceived as analogous to the real-world forces operating on the subject in an utterance containing a root modal (as in 28a and 28b respectively).

(28a) *The cat may be hungry.* (I am not barred — by the data on which I base my reasoning, such as the cat's empty bowl and his anxious look — from the conclusion that the cat is hungry. Based on Sweetser, 1990: 61)

(28b) *You may feed the cat now.* (You are not barred — by my authority as your mother and the cat's owner — from feeding the cat now.)

It may be interesting to note that Boye (2005) complements the force-dynamics approach to modality proposed by Talmy (1988, 2000) and Sweetser (1990) with Klinge's concept of potential, which refers to unverified world situations and admits two types of resolution: that the world situation the sentence describes obtains and that it does not hold (Klinge, 1993; see Section 2.1.6 in this chapter). Boye argues that if force-dynamics makes it possible to construe a complex situation in causal terms, involving the source of force and the agonist who is affected by it, then force-dynamic potential helps capture the intermediate stage or subsituation where the compelling force is in operation, but its effects have not yet materialised.

Apart from forces and barriers which apply in the real world and in the epistemic world, Sweetser talks about force-dynamics of conversational interaction reflected in the use of some modals. In (29a) below, the truth of the clause containing a modal verb is presupposed, and so this use of *may* does not permit root or epistemic reading. This domain, called by Sweetser speech-act modality, is concerned with forces or barriers at work in the immediate conversational world shared by the speaker and the interlocutor. The speaker, while admitting or acknowledging that something is the case and in this way agreeing with the interlocutor's prior claim, suggestion or implied statement ("Jasio and Hania are siblings"), chooses to negate or refute an unexpressed conclusion which may arise from it ("Jasio and Hania are alike"). In this way, the speaker does not bar the statement "Jasio is Hania's brother" from the immediate conversational world, but in a sense limits its validity. In this category fall also metalinguistic modal uses, that is modals applying to a particular linguistic form or to a particular element of content. In (29b), there is nothing that bars the speaker from referring to Morning Star as "Evening Star", so Morning Star can be referred to as "Evening Star".

(29a) *Jasio may be Hania's brother, but they are very different.*

(29b) *Morning Star can be Evening Star.*

Papafragou (2000b) argues that speech act modality does not constitute a separate modal domain, on a par with epistemic and root modality, but rather a specific instance of epistemic modality. According to her proposal, grounded in Relevance Theory, the effect of such utterances as (29a) depends not on the modal verb itself but on its complement, which is metarepresentational, i.e., it involves a representation of another representation (see also Section 2.1.6 in this chapter). Metarepresentations can work on the level of content, e.g., when the speaker represents what somebody else has said, as in

(29a), or on the level of form, e.g., if the speaker makes reference to the form of a linguistic unit rather than its content, as in (29b) above. In (29a), the modal's complement is a representation of the content of another utterance ("Hania and Jasio are sister and brother"). Since the truth of the clause containing *may* is undisputed, the use of the modal suggests that the speaker purposefully chooses to communicate less than s/he knows. In particular, s/he chooses not to commit him/herself to the possible implications or conclusions that a corresponding unmodalised statement might produce. Interestingly, Papafragou (2000b: 529–530) shows that in some cases where *may* is used to the same effect, the speaker's commitment to the truth of the proposition embedded under the modal is clearly limited or absent, as in (29c), where the speaker merely concedes that it is possible that Hania and Jasio are siblings.

(29c) *Jasio may be Hania's brother, I don't know, but they are very different.*

Kiefer (1997) proposes that the most important difference between root and epistemic modality is that root readings are based on "practical inferencing" (p. 245), which concerns what the speaker has to do to achieve a certain goal, while epistemic readings are based on logical relations of compatibility and entailment. Within root modality, he identifies two modal clusters: circumstantial–dispositional and deontic–boulomaic. This division is based on the relationship with ability, which, according to Kiefer (1997: 248), is not a modal notion. While there is a pragmatic link between dispositional and circumstantial modality and ability, with dispositional and circumstantial interpretations presupposing the ability of the subject to perform the action expressed by the main verb (or, indeed, the ability of the participant controlling the state of affairs described by the clause, see Nuyts, 2005: 7), there is no such relationship between ability and the other modal meanings. Moreover, Kiefer (1997) observes that the two modal clusters differ in their speech act potential: while deontic–boulomaic modality can be used to communicate permissions, orders, and optative speech acts, circumstantial and dispositional modal meanings are typically associated with assertions. Relationships between the modal meanings discussed in this section are presented in Figure 2.2 below.

Nuyts (2005) argues that the category modality should be abandoned altogether in favour of a number of more specific and internally coherent categories based on tangible semantic criteria. In particular, he objects to including deontic and dynamic modality under one label of root modality on the grounds that epistemic and deontic modality appear to have much more in common than deontic and dynamic meanings do. Firstly, unlike dynam-

ic modality, both deonticity and epistemicity involve attitudes of the speaker towards some state of affairs: his or her moral commitment, i.e., “the extent to which (s)he can approve of the state of affairs in terms of his/ her personal and/ or societal norms,” or existential commitment, i.e., “the extent to which (s)he believes the state of affairs has been or will be realised in the ‘real world’” (Nuyts, 2005: 23). Secondly, in contrast to deontic and epistemic modality, dynamic modality is not scalar in that it lacks intermediate values between possibility and necessity. Nuyts points out that attempts to mark such intermediate degrees with adverbs (e.g., *potentially* vs. *occasionally*, vs. *habitually*) result in additional blurring of the category modality with aspectual meanings. With regard to boulomaic modality and evidentiality, they involve scalar values and attitudinal meanings, the former by marking the speaker’s preferences and dislikes, and the other by signalling that “the existential status of the state of affairs is not obvious” (p. 23). Thus, Nuyts concludes that while there may be reasons to see evidentiality, epistemic, deontic and boulomaic modality as members of one supercategory, there is no reason to group them all — or any one of them — under a single umbrella term with dynamic meanings, which do not belong to this semantic set.

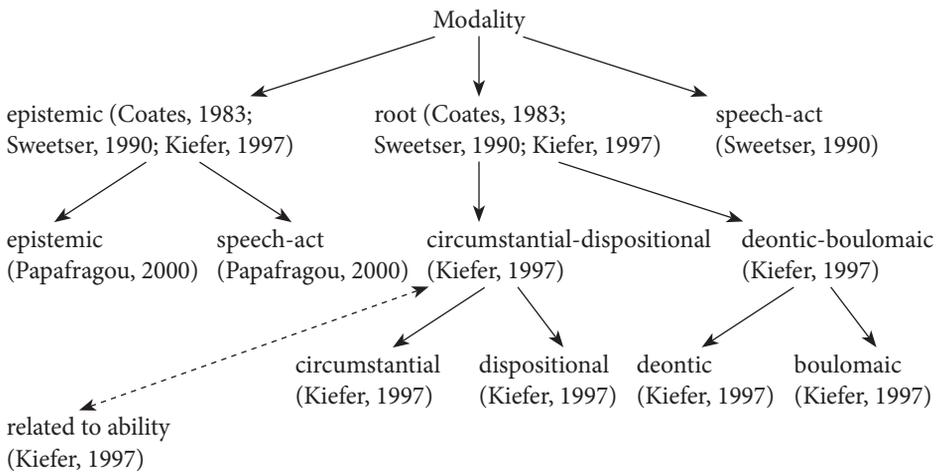


Fig. 2.2 Modal subdomains based on Sweetser (1990), Kiefer (1997), and Papafragou (2000)

2.2.3 Epistemicity, speaker-orientedness, and agent-orientedness

In their diachronic cross-linguistic study, Bybee et al. (1994) distinguish epistemic, agent-oriented, speaker-oriented and subordinating modality. Epistemic modality, as in the previously outlined approaches to the subdivision of modal meanings, encodes the extent to which the speaker is committed to the truth of the proposition and ranges from possibility (as in 30a), through probability (indicating a higher degree of likelihood than possibility, as in 30b), to inferred certainty (as in 30c).

- (30a) *Hania may have forgotten to take her mobile* (if she does not answer the phone).
 (30b) *Your Santa Claus letter should arrive tomorrow* (if you posted it yesterday).
 (30c) *Jasio must be very hungry* (if he has not eaten since breakfast).

Agent-oriented modality is concerned with the external or internal conditions which compel the agent to perform the action specified by the predicate. This includes strong and weak obligation whose source is different than the speaker (as in 31a and 31b respectively), as well as necessity, which reports on the physical conditions that urge the agent to perform the action (32); ability, which concerns the internal conditions enabling the agent to act (33); and desire, which refers to the volition of the agent to perform the action (34).

- (31a) *If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article.* (from Guide for Authors, <http://www.elsevier.com>)
 (31b) *Book reviews should critically discuss the book's strengths and weaknesses, situate its contribution to the field, and recommend it to a suitable readership.* (from Guide for Authors, <http://www.elsevier.com>)
 (32) *I need to hear a good loud alarm in the mornings to wake up.* (Bybee et al., 1994: 177)
 (33) *By the age of five, he could read fluently.*
 (34) *I asked Hania to stop talking, but she wouldn't.*

Generally, agent-oriented modality reports on the existing conditions rather than attempts to elicit action, although the authors observe that it can also

be used in commands, that is in cases where the conditions which compel the agent to action are indeed imposed by the speaker, as in (35).

(35) Now you can move to Section B of the test.

Speaker-oriented modality covers directives, which include commands, demands, requests, warnings, exhortations, and recommendations, as in (36), and acts of granting permission by the speaker, as in (37). The authors point out that, in contrast to agent-oriented modality, it does not report on the existing conditions which compel the agent to perform the action but creates such conditions by virtue of the speaker's authority (Bybee et al., 1994: 179).

(36) You must be back by dinner time (or you will spend the rest of the weekend in your room).

(37) You may use my phone.

Subordinating modality, or subordinating mood, the last of the modal subdomains identified by Bybee et al. (1994), is realized by modal markers on the verb in a subordinate clause, such as the subjunctive form in the complement clause, as in (38).

(38) I suggested that he should call you immediately. (Bybee et al., 1994: 180)

Figure 2.3 below shows modal subdomains and meanings as proposed by Bybee et al. (1994).

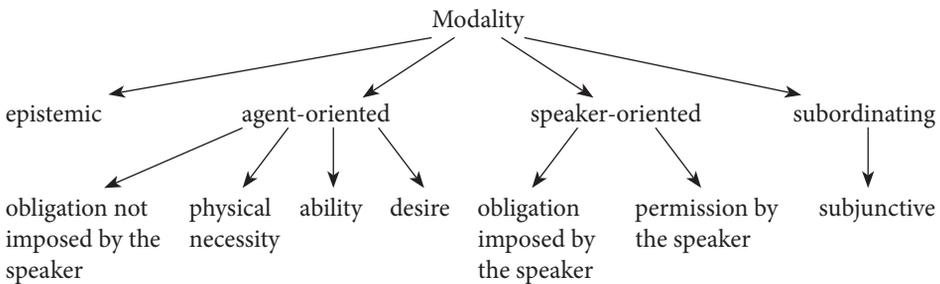


Fig. 2.3 Modal subdomains according to Bybee et al. (1994)

Van der Auvera and Plungian (1998) take Bybee et al. (1994) as a starting point for their attempt to draw a semantic map for different modal meanings and uses. They rely on the concepts of possibility and necessity in four mod-

al domains: participant-internal, participant-external, deontic, and epistemic. Participant-internal modality refers to “possibility or necessity internal to a participant engaged in the state of affairs” (van der Auwera and Plungian, 1998: 80), where possibility stands for a participant’s ability and necessity for a participant’s need, as in (39a) and (39b) respectively.

(39a) *Hania can keep talking without pausing for fresh air.*

(39b) *Jasio must hold his toy puppy to fall asleep.*

Participant-external modality refers to possibility or necessity whose source is external to the participant and lies in the circumstances which accompany the state of affairs expressed by the proposition, as in (40a) and (40b) below. In (40a) a questionnaire is presented as one of the possible techniques of data collection; in (40b) statistical tests are the only available source of knowledge.

(40a) *You can use a questionnaire to collect the necessary data.*

(40b) *But you have to run statistical tests to find out what these data mean.*

A type of participant-external modality is deontic modality, where the source of possibility or necessity is another person (often the speaker) or some socially recognised norms or laws. In the case of deontic modality, possibility corresponds to permission and necessity to obligation, as in (41a) and (41b).

(41a) *You may finish Exercise 3 at home.*

(41b) *You must hand in your essay on Friday at the latest.*

Epistemic modality, as in the other approaches outlined above, refers to the speaker’s evaluation of the degree of probability (ranging from mere possibility to certainty) that the state of affairs expressed by the proposition holds. Van der Auwera and Plungian’s understanding of deontic modality is traditional and includes permission and obligation, which in Bybee et al. (1995) are interpreted as agent-oriented or speaker-oriented modality, depending on the status of the speaker as the source of authority over the agent (as in 31a–b and 35–37 above). Van der Auwera and Plungian’s participant-internal modality corresponds to agent-oriented uses which involve physical necessity or ability (as in 32 and 33 above). Unlike Bybee et al. (1994), who consider volition as part of agent-oriented modality, van der Auwera and Plungian (1998)

exclude desire from the scope of modality. They group participant-internal and participant-external modalities under one label of non-epistemic modality since, in contrast to epistemicity, which concerns the speaker's evaluation of the truth of the proposition, these two refer to aspects of the state of affairs expressed by the proposition. Van der Auwera and Plungian's proposal is summarised in Figure 2.4 below.

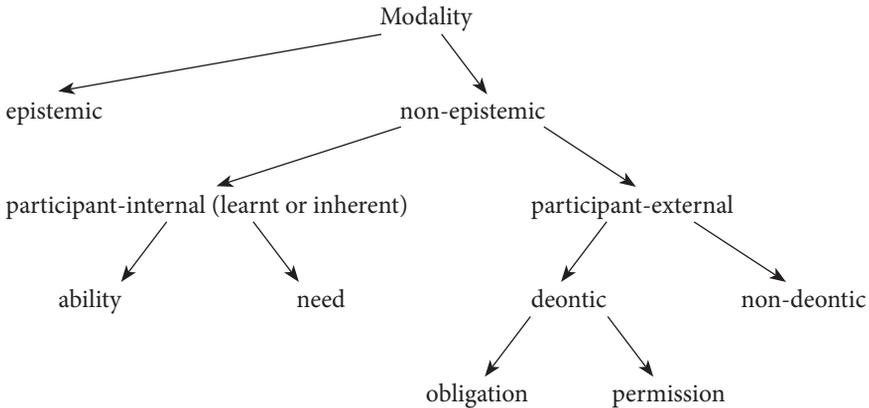


Fig. 2.4 Modal subdomains according to van der Auwera and Plungian (1998)

It is worth noting that Nuyts' (2005) objections to treating dynamic meanings as a subdomain of modality and, in particular, to seeing them jointly with deontic modality as fundamentally different from epistemic modality, apply also to Bybee et al.'s (1994) and van der Auwera and Plungian's (1998) proposals. Bybee et al. see dynamic meanings as a special case of agent-oriented modality, a subcategory which includes also some instances of obligation, while van der Auwera and Plungian juxtapose epistemic and non-epistemic modality, with the latter comprising deontic and dynamic senses.

What all the attempts at systematising modal meanings discussed so far seem to have in common is the relatively stable position of epistemic modality as a subsystem which makes it possible for the speaker to encode his or her evaluation of the probability that the situation expressed by the proposition has taken, is taking or will take place. For this reason, and despite the controversies over the status of dynamic meanings, it may be reasonable to set it off from other non-epistemic modal subdomains. This division corresponds to the Hallidayan distinction between modalization and modulation. Modalization, or modality of propositions, expresses the degree of probability that the state of affairs described by the proposition holds and the estimated frequen-

cy with which it obtains. In contrast, modulation, or modality of proposals, refers to the degree of obligation on the hearer and inclination on the part of the speaker to perform the action expressed by the main verb (Halliday, 1994: 89). Modalization and modulation are devices for expressing intermediate values in discourse, “various kinds of indeterminacy” (Halliday, 1994: 88), referred to as modal scales or values (see Section 2.2.5 below).

2.2.4 Epistemicity and evidentiality

If, compared to other modal subdomains, epistemic modality is relatively well-defined and uncontroversial, its relation to evidentiality, that is the linguistic expression of the source of knowledge on which the speaker bases his or her claim, is not easily resolvable. Dendale and Tasmowski (2001) observe that both systems are interrelated because they are often encoded by the same markers. They also report that over the past thirty years the relation between the two has been construed in terms of inclusion, with either modality or evidentiality functioning as the higher-order category; disjunction, where the two semantic domains are independent; or partial overlap.

Evidentiality is often viewed as a subcategory of epistemic modality concerned with the type of evidence the speaker has for the claim made in the proposition. Palmer (1986), for example, speaks of Judgments and Evidentials as two subsystems of epistemic modality, with Judgments comprising grammatical or lexical means for indicating that the proposition expresses the speaker’s opinion or deduction (non-evidential epistemic meanings) and Evidentials comprising elements which signal that in making the claim the speaker relies on reports of others (Quotative) or on other types of evidence (e.g., sensory). On this approach, both subsystems serve to indicate the degree of the speaker’s commitment to the information expressed, qualifying its validity in terms of his or her belief or the soundness of evidence s/he has access to.

Palmer (1986) observes that the boundary between Judgments and Evidentials is not always clear cut or stable. He identifies the modal verbs *may* and *must* as typical devices for making epistemic judgements in English but at the same time admits that since English *must* indicates inference from available data, it may be interpreted as an evidential marker (p. 70). According to Palmer (2001), the epistemic system (Judgments in Palmer, 1986) comprises the following subcategories: Speculative, Deductive and Assumptive (42a–42c respectively), while the evidential system involves Reported (Quotative

in Palmer, 1986), Sensory (visual and auditory) and Deductive (logical inference). On this view, the subcategory Deductive occurs in both systems and so classification of a deductive marker as epistemic or evidential depends to a large extent on which of these two systems is dominant in a given language (see Fig. 2.5 below).

(42a) *They may have gone away on holiday* (if they don't answer the phone).

(42b) *Hania must be suffering from a massive jetlag after the flight.*

(42c) *Jasio will be at school, so it's no use calling him now.* (He usually has classes at this time of the day)

The equivocal status of markers of logical inference is recognised also by van der Auwera and Plungian (1998: 85–86), who point out that the area of overlap between evidentiality and modality involves the subcategory of inferential evidentials, whose modal counterpart are expressions of epistemic necessity.

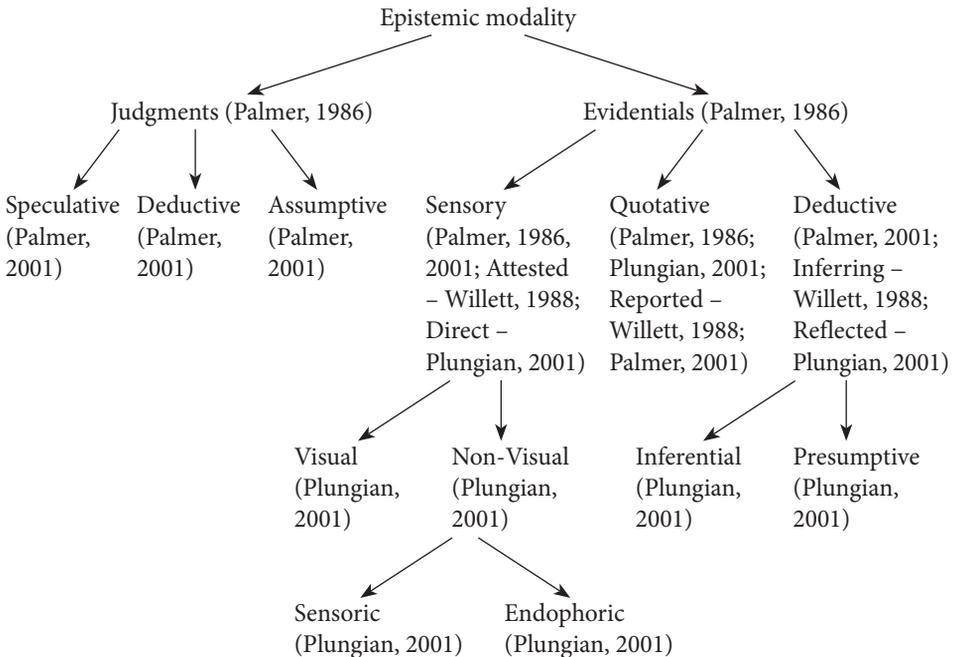


Fig. 2.5 Evidentiality within the epistemic modal system – an inclusion/ overlap view

Also Willett (1988), who investigates grammatical exponents of evidentiality in thirty-eight languages, sees evidentiality as part of the epistemic sub-

domain and emphasises its complex interactions with other modal meanings (and, indeed, other grammatical categories, such as tense and aspect). He points out that with regard to the type of evidence the speaker relies on in making a claim, the basic distinction which tends to be marked in languages with grammaticalised evidential contrasts is that between direct evidence (primary source), which he calls Attested, and indirect evidence (secondary source of knowledge). The most salient contrast within the latter is that between Reported (verbal second- or third-hand accounts) and Inferring evidence (whatever forms the basis for inference).

A different perspective is offered by Chafe (1986), who speaks of evidentiality in the broadest sense of linguistic signals of “attitudes towards knowledge” (p. 262). According to this author, knowledge can be qualified in terms of its reliability — ranging on a scale from certain to unreliable and indicated by such markers as *certainly*, *probably* or *may* — and in terms of the “mode of knowing” (p. 263) — be it belief, induction, sensory evidence, hearsay or deduction. On this understanding, evidentiality subsumes epistemic modality, which is concerned with reliability judgments rather than modes or sources of knowledge. Reliability judgments and signals of the mode of knowing interact in that two expressions can index the same source of knowledge (e.g., hearsay) but different degrees of reliability, as in (43a) and (43b) below.

(43a) *Well Schaeffer it seems had just found the latest article from the Smithsonian.* (Chafe, 1986: 268)

(43b) *I think it's supposed to be the most expensive place in Europe to live.* (Chafe, 1986: 268)

Strong affinities between epistemic and evidential systems are also acknowledged by Plungian (2001), who remarks that epistemic modality is “[the] domain where evidential and modal values overlap” (p. 354). In a way similar to Willett’s (1988), Plungian distinguishes the following sources of evidence which can be grammaticalised in various language systems: direct evidence (Attested in Willett, 1988), indirect reflected evidence (Willett’s Inferring), and indirect mediated (Quotative) evidence (Willett’s Reported; see Fig. 2.5). According to Plungian (2001: 351–352), direct evidence can relate to Visual observation or non-visual perception: either Sensoric, if it refers to direct non-visual perception of observable phenomena, or Endophoric, if it refers to direct experience of non-observable phenomena (e.g., inner states of the speaking subject). Reflected evidence embraces Inferential evidence, if it refers to a direct observation by the speaker of a situation which indicates

that another situation has taken or is taking place, and Presumptive evidence, if it refers to some other data which indicate that another situation is possible. Quotative evidence, which Plungian marks as the most indirect source of knowledge (“a true mediated knowledge”, as he calls it using Lazard’s terminology, see below), refers to second-hand information, either received in the form of personal reports or obtained from an unspecified author, or available as common knowledge. Plungian (2001) argues that the use of an epistemic marker, which encodes the speaker’s evaluation of the probability that a situation expressed by a proposition is the case, implies that the speaker’s knowledge of that situation is indirect. This means that an epistemic marker necessarily involves some evidential value. Evidentiality markers, however, do not always carry epistemic meanings.

Close links between evidentiality and epistemic modality are also recognised by DeLancey (2001), although he observes that there are “modal systems which do not express evidentiality, and evidential systems which are in no legitimate sense modal” (p. 370). On the basis of Bulgarian data, for example, Fitneva (2001) argues that markers of source of information and expressions qualifying the reliability of information are different types of epistemic devices which fulfil different functions in discourse and should be distinguished. In a similar vein, Lazard (2001), who like Willett (1988) focuses on grammatical exponents of evidentiality, observes that it should be kept apart from “[t]rue, dubitative or presumptive values” (p. 363), which can be expressed by a wider range of markers. According to Lazard, evidential forms in Balkan and Middle Eastern languages form a mediative system which indexes the fact of “the speaker’s becoming aware” of something in contrast to the speaker’s saying something (p. 362). In this way, Lazard asserts, evidentials create a mental distance between the speaking subject and the knowing subject, i.e., the speaker and the person who has obtained relevant evidence. The speaker’s claim is therefore mediated by the reference to some source of knowledge, reference which can be qualified by an epistemic marker but which does not carry any epistemic value.

Along similar lines, Aikhenvald (2004) argues that evidentiality is a distinct, self-contained grammatical system, whose markers may acquire additional epistemic meanings, but these are treated as semantic extensions, leaving the integrity of the category intact. Providing the hearer with information about the source of knowledge, she points out, “has nothing to do with one’s ‘epistemic stance’, point of view, or personal reliability” (Aikhenvald, 2004: 5). A similar position is taken by Nuyts (2005: 12), who concedes that evidential expressions often involve an estimation of the probability that the situa-

tion expressed in the clause obtains, but insists that evidential and probability markers represent different categories (see also papers included in Diewald and Smirnova, 2010). Aikhenvald (2004) confines her discussion of evidentiality to the grammatical coding of the source of knowledge, as opposed to lexical means, and draws a line between the evidential system and an evidential strategy (p. 147–149). An evidential strategy is a use of grammatical forms whose primary meaning is non-evidential, but which have developed additional evidential extensions.

This perspective is taken up by Diewald and Smirnova (2010), who study grammaticalised markers of evidentiality in German. They use the term *evidential expression* to apply to any linguistic structure which carries evidential meaning and reserve the term *evidentials* for grammaticalised markers of this category. Evidential expressions which are not classified as evidentials are called, after Aikhenvald (2004), *evidential strategies* (p. 41). To the authors, evidentiality and epistemic modality are closely related but separate categories. In their view, much of the evidentiality-epistemicity confusion arises as a result of conversational implicatures. They observe that although in many Indo-European languages evidentials have epistemic implications — this applies especially to indirect evidentials, which imply that the speaker has no direct knowledge of the state of affairs and so his or her commitment to the truth of what s/he is saying is necessarily limited — these implications are not part of the semantics of these expressions (Diewald and Smirnova, 2010: 79–80). They recognise the affinities between inferential evidentiality and epistemic necessity, which van der Auwera and Plungian (1998: 86) call *overlap categories*, but still claim that they should be distinguished as separate subdomains on the grounds that: “1. not every inferential statement needs to have an epistemic modalization; 2. not every statement expressing epistemic necessity needs to represent the result of an inferencing process” (Diewald and Smirnova, 2010: 92).

To be classified as an epistemic marker for the purpose of the present study, an expression must tell us something about the degree to which the speaker — or the individual whose opinion is reported — commits him or herself to the truth of what is being said. It may carry evidential meanings in its own right, but the evaluation of the probability that the state of affairs described in the proposition holds will be treated as crucial.

2.2.5 Modal scales

Modality expresses values that lie between the positive poles of assertion or command and the negative poles of denial or interdiction, covering the area between “yes” and “no”, occupied by such expressions as *maybe*, *sometimes*, and *be required to* (Halliday, 1994). Halliday distinguishes between modality of propositions, which he calls modalization, and modality of proposals, which he refers to as modulation. Modalization involves two scales: one which shows the degrees of probability, and the other which marks the degrees of usuality. The former carries information about the estimated degree of likelihood — from *certain* to *unlikely* — that the situation expressed in the clause obtains; the latter specifies the estimated frequency — from *always* to *never* — with which the situation holds (Halliday, 1994: 89).

Modulation also involves two scales: of obligation, ranging from requirement to permission and expressed by such markers as *must*, *be supposed to* and *may*, and of inclination, indicating various degrees of volition and expressed by markers ranging from *be determined to*, through *feel like*, to *be willing to* (Halliday, 1994: 89). Within these four scales, modality can assume one of three possible values: high, median, or low, with the high end of the cline lying close to the unmodalised or unmodulated assertion or command, and the low end of the cline approximating negation of the propositional meaning. Scalarity is thus an inherent feature of modality, irrespective of the modal subsystem one turns to.

Modal values interact with other modal variables: orientation (subjective or objective) and realisation (explicit or implicit), producing a complex system of modal forms (Halliday, 1994: 354–359). The contrast between subjective and objective orientation involves the extent to which an utterance reflects the speaker’s own point of view or personal evaluation of the situation rather than an assessment attributable to common sense, general knowledge or inferencing from available data. Implicit realisations of modal meanings introduce a modal marker in the clause; by contrast, explicit realisations set it off as a projecting clause of the *It is possible* or *It is recommended* type. This complex interaction of modality type, value, orientation and realisation is illustrated in Figures 2.6 and 2.7 for probability (modalization) and obligation (modulation) respectively.

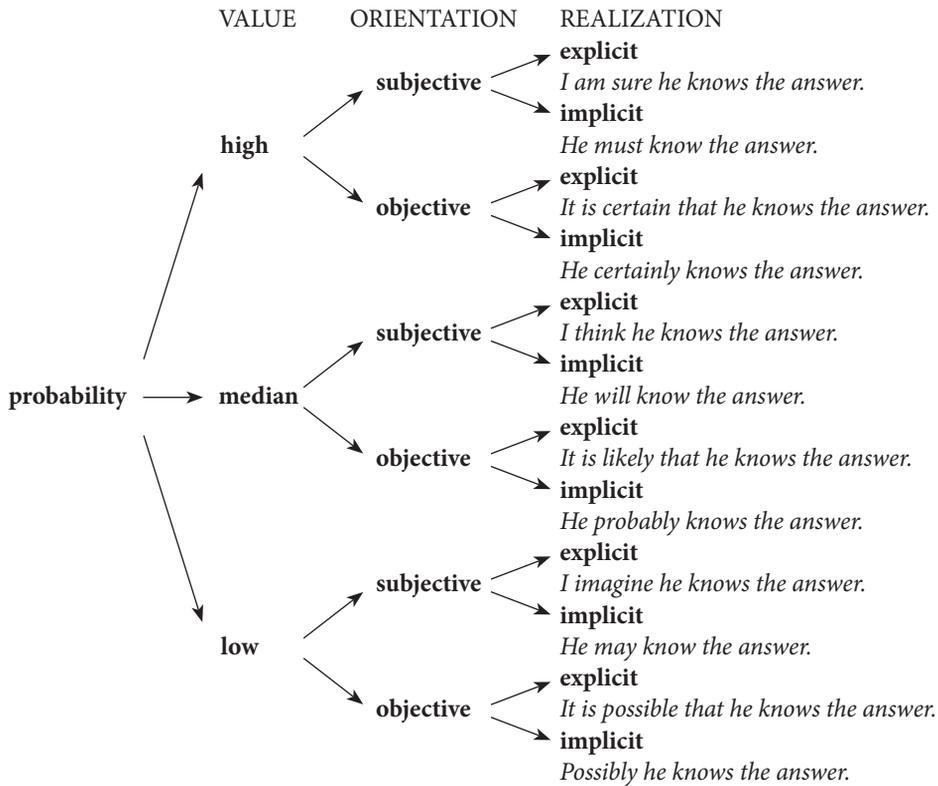


Fig. 2.6 Scale of probability: modal values, orientations and realisations
(based on Halliday, 1994)

That modal meanings can be represented on a scale of intensity or strength is one of the few relatively uncontroversial features of modality. Kratzer (1981), for example, speaks of possible worlds which are “more far-fetched than others” (p. 46) and introduces the concept of ordering source, which arranges the accessible worlds according to their proximity to the ideal provided by some stereotypical or normative conversational background. The ordering source is thus responsible for grading possibilities: from necessity, which corresponds to the situation when a proposition is true in all the possible worlds which lie closest to the ideal, to slight possibility. For a number of scholars who have investigated modality from various perspectives, necessity and possibility represent the extremes of the modal scale. This idea is inherent in the Hallidayan system of modal values discussed above. It is also implicit in Palmer’s (1986) observation that “strong” and “weak” judgments and directives (exemplified by the English modal auxiliaries *must* and *may*) are common in European lan-

guages. In their analysis of modal meanings, van der Auwera and Plungian (1998) rely on necessity and possibility as parameters which represent — for the epistemic scale — different degrees of probability. Coates (1983) speaks of confidence and doubt as the two ends of the epistemic scale, which extends from *must* and *can't*, imparting necessity or confident inference, and noninferential *will* and *won't*, through inferential *should*, *ought to* and *shouldn't*, to *may*, *might*, *could* and their negative forms on the other end of the scale, which all impart possibility. Both Coates (1983) and van der Auwera and Plungian (1998) refer to strong and weak obligation, and Coates shows that the strong/weak obligation cline can also be observed for a single modal marker. Example (44a) illustrates the strong meaning of moral obligation imparted by *should*; the same auxiliary verb in (44b) carries the medium strong sense “it is essential”; and in (44c) it is further weakened to “it is correct” (Coates, 1983: 59).

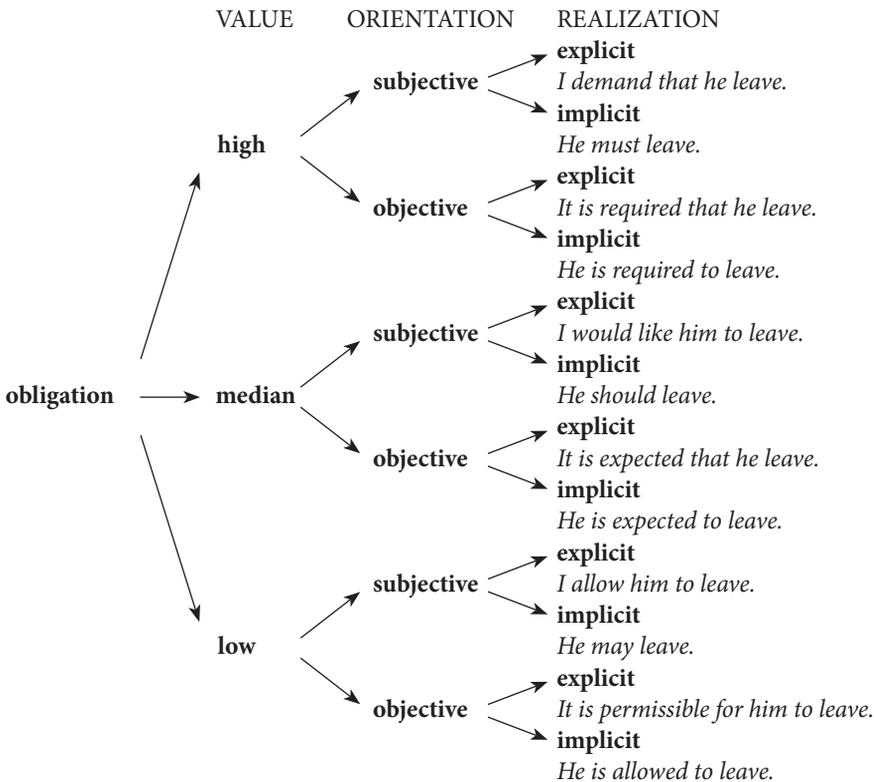


Fig. 2.7 Scale of obligation: modal values, orientations and realisations (based on Halliday, 1994)

- (44a) *The unemployed, they should be made to do some work and not scrounge off the state.*¹⁰
- (44b) *The second thing is this, and I think we should never forget it, the only physical immortality we have in this world is the spark of life which we can hand on to our children.*
- (44c) *I just insisted very firmly on calling her Miss Tillman but one should really call her President.*

For Nuyts (2001, 2005), polarity is an essential feature of deontic and, in particular, epistemic modality, the former indicating the degree of moral desirability of the situation expressed in the utterance, the degree of obligation to perform the action specified by the main verb, or the degree of intention not to prevent a course of action described in the clause, and the latter expressing the degree of probability (usually, but not necessarily, as evaluated by the speaker) that the situation expressed by the proposition holds, “going from absolute certainty that the state of affairs is real, via intermediary stages of (on the positive side) probability, possibility and (on the negative side) improbability, to absolute certainty that it is not real” (p. 10). In his view, then, the epistemic scale extends from certainty that something is the case, through decreasing levels of probability and increasing levels of doubt, to certainty that something is not the case.

The meanings which do not yield easily to scalar interpretation are connected with ability/ potentiality. According to Halliday (1994: 359), they reside “on the fringe of the modality system” and are expressed by such markers as *can/ can't, be able to* and *possible for N to*, which differ in orientation (subjective or objective) and realisation (explicit or implicit), but which are more difficult to analyse in terms of value. For Nuyts (2005), these dynamic meanings are essentially polar and, unlike epistemic or deontic meanings, do not admit more fine-grained, intermediate values. Nuyts situates ability, capacity, “inherent necessity” (subject-oriented modality, Palmer, 1979; see Section 2.2.1 above), and necessity imposed by the circumstances outside the system of modality.

Salkie (2009) adopts the prototype approach to modality and suggests four criteria which help identify the core members of the category but at the same time allow for peripheral membership: as a rule modal markers express possibility or necessity; modal markers generally impart epistemic or deontic meanings; modal markers usually involve subjectivity; and modal markers are nor-

¹⁰ All examples in (44) come from Coates (1983: 59); notation has been simplified and hesitations removed.

mally located on a continuum between two extremes marked by necessity at one end and possibility at the other. In this way he identifies the prototypical modal features which, if jointly present in a particular context of use, signal the highest degree of modality. If some of the features are absent, then the modal marker bears a lower degree of modality in the context considered. Modality in Salkie's view is thus an essentially gradable and context-dependent category. A prototypical modal expression will be analysable in terms of its actual value – or a place on a relevant scale – but the lack of an applicable scale will not automatically disqualify an expression as a modal marker.

2.3 Epistemic modality markers

2.3.1 Epistemic markers in English

Central to epistemic modality in English are modal auxiliaries, which form a well-defined subsystem marked by the NICE properties — negation formed with *n't*; direct inversion with the subject; code or post-verbal ellipsis; and emphatic affirmation with the stress on the auxiliary — the lack of *-s* form for the third person singular, the absence of non-finite forms, and mutual exclusiveness (Huddleston, 1976: 333; Palmer, 1979: 9). It is organised along an axis running from *may*, which indicates possibility, through *will*, which refers to “reasonable judgment”, to *must*, which expresses “the only possible judgment” (Palmer, 1986: 62; Fig. 2.8). *Can't* supplies the negation of *must* which affects the main predication and expresses certainty that something is not the case. *Might* and *would* are tentative forms of *may* and *will* respectively, *could* is synonymous with *may* and *might*, and *ought to* and *should* are similar to *must* but with “some notion of conditionality” attached (Palmer, 1986: 63). Coates (1983: 49–51) and Collins (2009:57–59) place *need* at the high end of the scale as an epistemic necessity modal, typically occurring in non-assertive contexts and providing negation of the modal predication expressed by *must*. In such cases it expresses necessity which is denied, paraphrasable as “it is not the only possible conclusion that” (Palmer, 1979: 54).

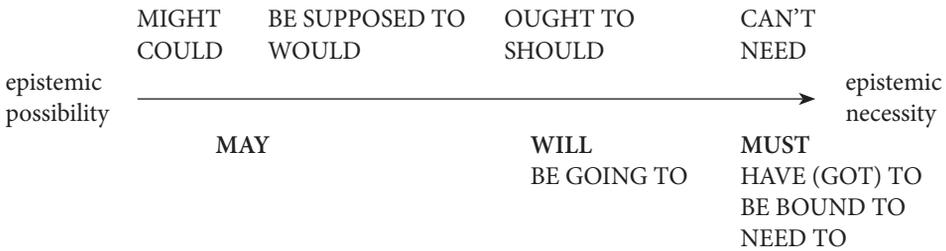


Fig. 2.8 The epistemic modality system in English: modal auxiliaries and quasi-modals

May, *might* and *could* convey the speaker's lack of confidence in the truth of the proposition, as in (45a) and (45b) below, and so express subjective modality (Coates, 1983). Coates lists the following features of this modal cluster:

- a) the speaker does not commit himself or herself to the truth of the unmodalised statement;
- b) there is no restriction on the time reference of the main predication, which can refer to the moment of, prior to or after speaking;
- c) they collocate with *well* to achieve a quasi-objective effect of the *there-is-a possibility-that* rather than *I-am-not-sure-but-perhaps* type (Coates, 1983: 135) or to modify the degree of likelihood (pp. 153, 166; Hoye, 1997: 242).

Epistemic *may* occurs also in clauses of concession (Palmer, 1979), where, according to Coates (1983: 135), it can be paraphrased as "although it is possible that". This interpretation may raise some objections since, as Sweetser (1990) points out, the truth of the clause containing *may* is in many cases not disputed. Collins (2009: 93) suggests that utterances like (45c), where the truth of the proposition is acknowledged, may be interpreted as instances of pragmatic strengthening, possibly paraphrasable as "I do not dismiss the fact that" and intended to distance the speaker from possible implications of this fact rather than from the proposition itself (see Papafragou 2000b and discussion in Section 2.2.2 above).

(45a) *The missing steak may/ might/ could have been stolen by the cat.*

(45b) *By the time they unblock the road, Hania may/ might/ could well be at home.*

(45c) *Jasio may be seven, but he is an avid reader.*

According to Huddleston and Pullum (2002 : 189), epistemic *will* conveys "assumption or expectation, very often with a suggestion of future confirmation." It is used to make a confident statement and *would* represents its tenta-

tive form (Palmer, 1979: 47–48). Coates distinguishes two types of epistemic meanings carried by *will*: the stronger epistemic sense of predictability, paraphrasable as “I (confidently) predict that it is the case that p” (Coates, 1983: 177), and the weaker epistemic sense of prediction, sometimes reduced to pure futurity, which can be paraphrased as “I predict that” (p. 179), as in (46a) and (46b) respectively. According to Coates, predictability *will* is associated with the following features:

- a) the speaker expresses confidence in the truth of the proposition;
- b) the confidence is based on common sense, past experience or repeated observation;
- c) the time reference of the main predication is non-future;
- d) it often occurs with third person subjects.

In the case of prediction *will*, the speaker expresses prediction about the future, and the time reference of the main predication is future (Coates, 1983: 179–181). Although Coates (1983) interprets this use of *will* as epistemic, it is often considered a pure temporality marker (Westney, 1995: 186). In the present study, *will* will be treated as an epistemic marker if it carries the strong sense of predictability: used of present or past states of affairs or in utterances which state general truths or can be interpreted as valid for all occasions.

The epistemic meanings of *would* reflect to a certain extent those of epistemic *will*. Predictability *would* can be paraphrased as “I (confidently) predict that it was the case that p” (Coates, 1983: 208), as in (46c). Its properties are as follows:

- a) the speaker expresses confidence in the truth of the proposition;
- b) the confidence is based on common sense, past experience or repeated observation;
- c) the time reference of the main predication is past;
- d) it may represent a back-shifted form of epistemic predictability *will* (Coates, 1983: 208–209).

Prediction *would* is generally associated with a back-shift from epistemic prediction *will* in indirect speech, with the use of past tense for politeness, and with tentativeness inherent in hedges (Coates, 1983: 210, 216–217; Collins, 2009: 141–142). It also supplies the hypothetical form for prediction *will* and expresses irrealis with overt or unexpressed conditional clauses, as in (46d). For the purpose of this study, *would* will be considered an epistemic marker in the former sense of predictability, that is when it carries the sense of fairly con-

fidient prediction that something was the case, in particular based on inference from available data, common sense or repeated observation. Intuitively weaker than epistemic *will*, it will be treated as a middle-value epistemic marker.

(46a) “Where’s the cat?” “He’ll be sleeping in Hania’s wardrobe.”

(46b) Jasio will be taking his first exam next week.

(46c) “A young woman has left this bag for you.” “That would be my daughter Hania.”

(46d) Jasio would have sent you a postcard if he remembered your address.

Epistemic *should* and *ought to* express an assessment of probability based on logical inference from facts known to the speaker, as in (47). They are close to epistemic *must* but carry a weaker sense of confidence: if *must* indicates that all the available evidence entails that something is the case, then *should* and *ought to* indicate that there is some evidence that entails it (Groefsema, 1995). According to Coates (1983), core examples of epistemic *should* and *ought to* tend to be associated with the following features:

- a) the speaker evaluates the situation expressed by the proposition as probable;
- b) the assessment is based on inference from facts known to the speaker;
- c) the time reference of the main predication is often future;
- d) the subject is often inanimate;
- e) the main verb is typically non-agentive (Coates, 1983: 64–66, 74).

(47) *The film started at four so it should/ought to finish in about half an hour.*

Epistemic *must* expresses certainty on the part of the speaker that a situation is taking or has taken place, or indicates that its occurrence is a matter of logical necessity (Collins, 2009: 38). Coates (1983: 41) demonstrates that it forms a cline from the subjective core instances of the *I-confidently-infer-that-x* type to the objective peripheral examples of the *in-the-light-of-what-is-known-it-is-necessarily-the-case-that-x* type, as in (48a) and (48b).

(48a) *The film must be really good if Jasio wants to see it again.*

(48b) *This is the only blue British Shorthair we have, so it must be the one Hania told you about.*

Core examples of epistemic *must* are typically associated with the following features (Coates, 1983: 41–42):

- a) the speaker expresses confidence in the truth of the proposition;
- b) the confidence is based on inference from facts known to the speaker;
- c) the time reference of the main predication is non-future;
- d) the subject is often inanimate;
- e) the main verb is often stative.

Can't provides the negative form of epistemic *must* and expresses the speaker's confidence that the state of affairs described in the proposition does not obtain or indicates that its occurrence is impossible on logical grounds, as in (49a) and (49b). Coates (1983: 101) reports that it is typically associated with the same features as epistemic *must*.

(49a) *The book can't be really good if you haven't finished it.*

(49b) *This can't be Jasio's pullover – it's too small.*

Need expresses epistemic necessity and indicates inference on the basis of some evidence (Collins, 2009). Its placement along the axis is not without problems, though. Coates (1983) reports that this modal auxiliary is rare in her corpus and that it occurs virtually exclusively with negation (either with the negative particle or with negative adverbs), as in (50). Its basic epistemic form would then be *needn't*, which expresses a judgment based on the available evidence that the state of affairs expressed in the proposition is not the only possible state of affairs in the circumstances. In other words, *needn't* admits possible worlds in which the state of affairs expressed by the proposition does not obtain and as such is closer to the lower end of the modal cline.

(50) *“Oh gosh, getting married is an awfully complicated business.” “Actually, it needn't be. It can be very straightforward.”* (Coates, 1983: 50; notation simplified, emphasis added)

To this set of modal auxiliaries Coates (1983) adds also quasi-modals¹¹ *be bound to* and *have (got) to*, which impart epistemic necessity, as in (51) and (52) below. *Be bound to* carries strong epistemic value, often with some note of inevitability, and, in contrast to epistemic *must*, occurs freely with main verbs which refer to future actions or states (Palmer, 1979: 45–46; Coates, 1983: 42–43; Collins, 2009: 87–88). *Have (got) to* is rarely used epistemically (Palmer 1979; Coates, 1983), and if it is, it resembles epistemic *must*. It expresses logi-

¹¹ Semi-auxiliaries in Quirk et al. (1985), which express modal meanings but are introduced by inflected primary verbs. To this list we add here *need* used as a main verb.

cal necessity and, unlike epistemic *must*, can take main verbs with future time reference. Other periphrastic modal forms which can carry epistemic meaning include *need to*, which occurs rarely and in a way similar to modal auxiliary *need* (Collins, 2009: 75), *be supposed to*, which is semantically close to *should* and *ought to* and combines with main verbs whose time reference is non-future, as in (53) (Westney, 1995: 175; Collins, 2009: 80), and *be going to*, which in its epistemic reading is close to prediction *will* and implies that in making the prediction the speaker is guided by some hints of the coming event present at the moment of speaking, as in (54) (Coates, 1983: 201; Westney, 1995: 186). The periphrastic form *is to* (55), apart from its deontic meaning, expresses futurity rather than epistemicity, often referring to a future arrangement (Quirk et al., 1985: 217; Westney, 1995: 202–204), and so is absent from the axis.¹²

(51) *Talk of the devil, and he is bound to appear.*

(52) *And so, the molecules are speeding up . . . so the balloon goes back to its former size and shape. So that has to be what's happening to the balloons, that are inside this container here. (Collins, 2009: 63)*

(53) *He is the guy who is supposed to have left. (Collins, 2009: 81)*

(54) *When Hania discovers that you touched her diary, she's going to be furious.*

(55) *Their daughter is to be married soon. (Quirk et al., 1985: 217)*

Apart from modal auxiliaries and quasi-modals, epistemic modality in English can be expressed by modal adverbs, adjectival and participial constructions, phrases with nouns referring to different degrees of likelihood and lexical verbs relating to mental processes and perception (Simpson, 1993: 49; Gavins, 2005: 86).

Modal adverbs are ones which qualify the truth value of a propositional content in such a way that it is emphatically enhanced (e.g., *certainly*, *of course*, *undeniably*) or marked as uncertain (e.g., *probably*, *allegedly*, *perhaps*) (Quirk et al., 1985, Ch.8). They can function within a verb phrase as subjuncts, acting as emphasizees reinforcing the truth of the statement for the receiver (e.g., *certainly*, *definitely*, *of course*, Ex. 56a) or as content disjuncts, expressing the degree of the speaker's commitment to the truth of the proposition: conviction (*evidently*, *obviously*, *of course*) or some degree of doubt (e.g., *conceivably*, *maybe*, *possibly*; Quirk et al., 1985, Ch. 8). Some of them are more readily

¹² Palmer (1979: 9) argues that it is not appropriate to refer to it as *be to*. *Is to* differs from central modal auxiliaries in having the finite forms, but it is similar to true modals in not having non-finite forms, including the infinitive.

classified as epistemic (e.g., *certainly*, *perhaps*), others carry evidential meaning (e.g., *obviously*, *apparently*), still others are more often used as intensifiers (e.g., *of course*, *indeed*). Thematisation, or the use of a modal disjunct in the initial position, as in (56b), topicalises the modal meaning, which becomes a natural theme of the clause (Hoye, 1997: 149–150); interpolation, or the use of an adverb in the medial position (56c), may limit its scope; and tagging, or the end position of the adverb (56d), “explicitly invites the addressee’s agreement or acquiescence to the truth of what is said” (Hoye, 1997: 150).

- (56a) *Hania is certainly interested in the history of rock.*
 (56b) *Obviously, Jasio can’t have remembered to water the seeds.*
 (56c) *She is possibly the tallest student in the class.*
 (56d) *He will never admit to it, of course.*

Modal adjectival and participial constructions are phrasemes which contain adjectives or participial forms expressing the degree of likelihood that a situation described in the proposition will take place (e.g., *likely*, *uncertain*, *doubtful*), or the degree of the speaker’s personal commitment to the proposition (e.g., *convinced*, *certain*; Simpson, 1993: 49; Gavins, 2005: 86). They express sub-sentential modality if they function as modifiers within a noun phrase, but they also form embedding clauses of the *be-ADJ-that* type with extraposed subject, as in (57a), or experiencer as subject, as in (57b), and raising constructions of the *be-ADJ-to* type (57c), which are often analysed with sentential modality markers (Quirk et al., 1985; Portner, 2009).

- (57a) *It is likely that Jasio will follow us on his recently-tuned bike.*
 (57b) *I am certain that he heard us leave the house.*
 (57c) *He is sure to know where we are going.*

Modal nouns convey different degrees of likelihood or certainty (von Fin-tel, 2006) and often occur in formulaic expressions which express sentential modality (e.g., *in all likelihood*, *without a shadow of a doubt*), as in (58a), or in structures of the *there-is-N-that* type, as in (58b).

- (58a) *In all likelihood, Hania recognised the cat by the white spot under the chin.*
 (58b) *There is little doubt that Jasio is a great fan of German shepherds.*

Epistemic modality is also expressed by lexical verbs, which, as Hyland and Milton (1997: 190) observe, are more precise indicators of the speaker’s

commitment to the proposition than modal adverbs. Speculative lexical verbs express the degree of commitment in terms of the speaker's opinion of and confidence in the truth value of the proposition (e.g., *assume, believe, think*), deductive lexical verbs convey the degree of commitment based on inference from available data (e.g., *conclude, imply, infer*), and evidential lexical verbs point to some evidence on which the speaker relies in his or her commitment to yet unproven observations (e.g., *appear, observe, report*; Pérez-Llan-tada, 2010).

Some epistemic markers can co-occur in a sentence, forming modal collocations. These combinations are modally harmonic if both items convey the same epistemic meaning — in Lyons' words, if they “express the same degree of modality” (1977: 807) — or modally non-harmonic if they carry different epistemic senses, as in (59a) and (59b) respectively. Harmonically combined modality markers tend to have a reinforcing effect on each other, while non-harmonically combined items operate independently, with one falling within the scope of the other (Lyons, 1977: 807–808; Hoye, 1997: 241). Thus, if (59a) could be paraphrased as “It is possible that he has forgotten”, the interpretation of (59b) would be: “It is certainly the case that there is a possibility that he has forgotten,” with *may* operating within the scope of *certainly*. Hoye (1997) observes that harmonic verb–adverb combinations are more frequent than non-harmonic co-occurrences, and that adverbs in non-harmonic combinations, such as *certainly* in (59b), may signal concession rather than full commitment. Under this interpretation, (59b) would read: “It is certainly the case that there is a possibility that he has forgotten, but I don't really think he has.”

(59a) *He may possibly have forgotten.* (Lyons, 1977: 807)

(59b) *Certainly he may have forgotten.* (Lyons, 1977: 808)

2.3.2 Epistemic markers in Polish

Epistemic modality in Polish is expressed grammatically and lexically. Grammatical exponents include hypothetical mood and future tense forms; lexical markers comprise verbs, predicatives, adjectives and modal modifiers (modal adverbs and particles; Ligara, 1997: 47). According to Rytel (1982: 41–42), epistemic meanings in Polish are expressed primarily by lexical elements, with morphological markers occurring only rarely in this role.

Depending on the estimated degree of probability, Grzegorzczkowska (1998: 44, 2001: 132–133) divides epistemic markers into exponents of strong prob-

All four verbs convey also non-epistemic meanings. In her comparative analysis of Polish and French modal verbs, Ligara (1997: 70–71) lists the following parameters that suggest epistemic interpretation:

- a) future tense marker on the modal verb cancels the epistemic meaning;
- b) the first and the second person subjects are likely to preclude the epistemic interpretation; the third person inanimate subjects frequently indicate the epistemic sense;
- c) stative verb infinitives following the modal verb suggest the epistemic meaning; dynamic verb infinitives often coincide with non-epistemic meanings;
- d) perfective aspect of the infinitive following the modal verb is often associated with epistemic interpretation; imperfective aspect of the infinitive often coincides with non-epistemic interpretation;
- e) questions cancel the epistemic meaning.

Polish *móc* occurs in non-epistemic contexts referring to the subject's ability — inherent or conditioned by circumstances — to perform an action or to the subject's right or freedom to perform it.¹⁴ According to the PWN dictionary of the Polish language (*Słownik języka polskiego*, 1994), epistemic *móc* indicates that the activity expressed by the main predication is possible or probable. It scopes over the entire proposition, indicating that the speaker is not committed to its truth and generally regards the occurrence and non-occurrence of the state of affairs expressed by the proposition as equally likely (Ligara, 1997: 194).¹⁵ It occurs in a variety of forms, marked morphologically for person, number, gender, tense and mood. Ligara (1997) enumerates the following features of epistemic *móc*:

- a) the speaker does not commit himself or herself to the truth of the proposition;
- b) the speaker expresses his or her belief at the moment of speaking;
- c) the speaker evaluates a present or future situation expressed by the proposition as possible if the modal verb is in the present tense, as in (60a) and (60b);
- d) the speaker evaluates a past situation expressed by the proposition as possible if the modal verb is in the past tense, as in (60c);

¹⁴ Deontic meanings of Polish verbs *móc*, *mieć*, *powinien*, and *musieć* and other verbal exponents of deontic modality are analysed by Jędrzejko (1987).

¹⁵ Still, as Ligara (1997) points out, in natural language the expressed epistemic attitude is stronger than the unexpressed presupposition.

e) the utterance is more tentative if the modal verb is used in the hypothetical mood (60d).

(60a) *Kluczyki samochodowe mogą* [MÓC^{3PL PRES}] *być w mojej torebce.*

‘The car keys may be in my bag.’

(60b) *Zamówiona książka może* [MÓC^{3SING PRES}] *przysiąc w poniedziałek.*

‘The ordered book may arrive on Monday.’

(60c) *Jasio mógł* [MÓC^{3SING MASC PAST}] *już nakarmić kota.*

‘Jasio may have already fed the cat.’

(60d) *Kot mógłby* [MÓC^{3SING MASC HYP}] *za tobą tęsknić (gdybyś na miesiąc wyjechała).*

‘The cat could miss you (if you left for a month).’

Móc can modalise a negated proposition, as in (61a), where the speaker states that it is possible that Hania does not remember the way. Negated *móc*, however, indicates that the speaker regards the state of affairs expressed by the proposition as impossible on logical grounds (Rytel, 1982: 167) or has a reason to disbelieve it, as in (61b), which conveys the speaker’s certainty that Jasio did not forget the way.

(61a) *Hania może* [MÓC^{3SING PRES}] *nie pamiętać* [NEG PAMIĘTAĆ^{INF}] *‘remember’* *, jak tam dojechać.*

‘Hania may not remember how to get there.’

(61b) *Jasio nie mógł* [NEG MÓC^{3SING MASC PAST}] *zapomnieć, jak tam dojechać (on zawsze pamięta raz przebytą drogę).*

‘Jasio can’t have forgotten how to get there (he always remembers the way he went before).’

Non-epistemic meanings of the verb *musieć* include: necessity imposed on the subject by external circumstances, obligation with the source in the speaker or the external world, internal sense of obligation, and determination to accomplish a goal (*Słownik języka polskiego*, 1994). As a marker of epistemic modality, it scopes over the proposition imparting a high degree of confidence in its truth at the time of speaking (Ligara, 1997: 96). Ligara enumerates the following characteristics of epistemic *musieć*:

- a) the speaker expresses confidence in the truth of the proposition at the time of speaking;
- b) the confidence is based on inference from facts known to the speaker;
- c) the speaker considers a present or future situation expressed by the proposition as certain if the modal verb is in the present tense, as in (62a) and (62b);

- d) the speaker considers a past situation expressed by the proposition as certain if the modal verb is in the past tense, as in (62c);
- e) present or future time reference of the main predication is indicated by aspect of the infinitive: perfective for future states of affairs (62b) and imperfective for states of affairs that obtain at the moment of speaking (62a).¹⁶

(62a) *Hania musi* [MUSIEĆ^{3SING PRES}] *rozmawiać* [ROZMAWIAĆ ‘talk’^{INF IMPERF}] *z Olą, bo linia jest od dwudziestu minut zajęta.*

‘Hania must be talking to Ola because the line has been busy for the last twenty minutes’

(62b) *Przedstawienie musi* [MUSIEĆ^{3SING PRES}] *się za chwilę skończyć* [SKOŃCZYĆ ‘finish’^{INF PERF}], *bo nauczycielka zasiadła do pianina.*

‘The performance must finish in a while because the teacher has seated herself at the piano.’

(62c) *Pierogi musiały* [MUSIEĆ^{3PL PAST}] *być znakomite (skoro Jasio zjadł ich jedenaście).*

‘Pierogi must have been excellent (if Jasio had eleven).’

Powinien has no infinitive, the third person singular masculine form of the present tense serving as its citation form. *Słownik języka polskiego* (1994) lists the following senses of *powinien*: i) with a personal subject it indicates obligation on the subject to perform the action expressed by the main verb; ii) with a personal subject it indicates expectation that the situation will take place; and iii) with a third person inanimate subject it indicates specific requirements or desirable qualities. In the second, epistemic use it expresses a slightly lower degree of certainty than *musieć*. Ligara (1997) mentions the following features of epistemic *powinien*:

- a) at the time of speaking, the speaker considers the occurrence of the state of affairs expressed by the proposition as more likely than its non-occurrence;
- b) the assessment of probability is based on inference from facts known to the speaker.

¹⁶ It seems that the aspect distinction works for phasal verb infinitives but not necessarily for other verbs, as in the example below:

Muszą [MUSIEĆ^{3PL PRES}] *niedługo wracać* [WRACAĆ ‘return’^{INF IMPERF}], *bo ich gosposia wysprzątała cały dom.* ‘They must be coming back soon since their housekeeper has cleaned the whole house.’

Generally, it appears that epistemic *musieć* is only rarely used of future events.

Powinien expresses a relatively high degree of certainty on the part of the speaker that a state of affairs has taken, is taking or will take place. The present, future or past status of the situation is made clear by the context, as in (63a), (63b), and (63c). The past form of the verb is formed with the past form of the verb *być* ‘be’ marked for gender (Saloni, 2001) but the resulting utterance is contrafactive rather than nonfactive, that is it is presupposed that the proposition is false. Thus, (63d) indicates that the speaker knows that they did not land.

- (63a) *W szafce powinno* [POWINIEN ^{3SING NEUT PRES}] *być jeszcze trochę kawy.*
‘In the cupboard there should be some coffee left.’
- (63b) *Zebranie powinno* [POWINIEN ^{3SING NEUT PRES}] *się zaraz skończyć. Nigdy nie trwa dłużej niż półtorej godziny.*
‘The meeting should end in a minute. It never lasts longer than an hour and a half.’
- (63c) *Powinni* [POWINIEN ^{3PL MASC-PERSONAL PRES}] *wylądować jakąś godzinę temu. Jak dojadą do domu, to na pewno zadzwonią.*
‘They should have landed an hour ago. When they reach home, they are bound to call.’
- (63d) *Powinni byli* [POWINIEN ^{3PL MASC-PERSONAL PAST}] *wylądować jakąś godzinę temu, ale samolot jest opóźniony.*
‘They should have landed an hour ago or so, but the plane is delayed.’

Modal verb *mieć* has a wide range of very different uses.¹⁷ According to *Słownik języka polskiego* (1994), it has five basic functions. With an infinitive: i) it indicates obligation or intention to perform the action expressed by the infinitive or prediction that a state of affairs expressed by the utterance will take place; ii) it expresses future in the past; iii) it communicates the speaker’s disbelief or doubt of what is expressed by the proposition; and iv) used in questions, especially in hypothetical mood, it indicates emphatic denial or rejection. With a passive participle, v) it indicates that something has been accomplished or completed. As an epistemic verb, it scopes over the entire proposition and, as Ligara affirms, indicates that the speaker reports unverified information he or she has obtained from another source or that the speaker considers a certain state of affairs as a hypothetical possibility. In the former use, *mieć* has the following characteristics (Ligara, 1997: 143):

¹⁷ The primary meanings of Polish *mieć* are non-modal, including, among others, ‘have, own, possess’, ‘consist of’, ‘experience’ and ‘be marked by’ (*Słownik języka polskiego*, 1994).

- a) the speaker does not assume responsibility for the truth of the proposition;
- b) the speaker expresses doubt or uncertainty about the truth of the proposition;
- c) the speaker reports information obtained from another source;
- d) the main predication refers to the moment of speaking or to the future if the modal verb is in the present tense, as in (64a) and (64b); the main predication refers to the past if the modal verb is in the past tense (64c).

Because of the fact that the speaker communicates second-hand information, Weiss proposes to classify *mieć* as a reporting rather than epistemic modal verb (Pl. *komperytywny* from Lat. *comperire* — Weiss, 1987: 136), which indicates that the speaker has learnt something from another source.

The other epistemic use is limited to conditional clauses, where the verb indicates a condition which enables another state of affairs, as in (64d) (Ligara, 1997: 144).

- (64a) *Ma* [MIEĆ^{MOD 3SING PRES}] *być najśliczniejszym i najmądrzejszym dzieckiem na świecie. To oczywiście zdanie babci.*
'She is said to be the most beautiful and intelligent kid in the world. This is, of course, her granny's opinion'
- (64b) *Samochód ma* [MIEĆ^{MOD 3SING PRES}] *być gotowy na czwartek. Tak twierdzi mechanik.*
'The car is to be ready on Thursday. This is what the mechanic says.'
- (64c) *Mieli* [MIEĆ^{MOD 3PL MASC-PERSONAL PAST}] *wyjechać na początku sierpnia, więc pewnie jeszcze ich nie ma.*
'They were to go away at the beginning of August, so they won't be back yet.'
- (64d) *Gdyby kot miał* [MIEĆ^{MOD 3SING MASC HYP}] *jechać z nami, musielibyśmy jechać samochodem.*
'If the cat were to go with us, we would have to go by car.'

In her analysis of epistemic *mieć*, Ligara discusses also the future-in-the-past function of the modal, where it refers to an activity completed before the time of speaking but later than a certain moment in the past which serves as a point of reference, as in (65).

- (65) *Przyszłość miała* [MIEĆ^{MOD 3SING FEM PAST}] *wykazać, że się myliłem.* (Słownik języka polskiego, 1994: 156)
'The future was to demonstrate that I was wrong.'

Epistemic meaning in Polish can also be expressed by the future tense. Polish future tense is formed in the following way: there is a future tense paradigm for verb *być* 'be'; future tense conjugation of perfective verbs is similar to present tense conjugation of imperfective verbs (simple future); and future tense of imperfective verbs consists of the future form of the auxiliary verb *być* 'be' marked for person and number and a lexical verb, which can be used in infinitive or in a form marked for gender and number (complex future tense) (Saloni, 2001). The strong epistemic sense of assumption bordering on certainty concerns a state of affairs at the moment of speaking and necessarily precludes the use of perfective verbs (66a). This use of the future tense could be described as follows:

- a) the speaker expresses a considerable degree of confidence in the truth of the proposition;
- b) the confidence concerns a present situation;
- c) the confidence is often based on previous experience, common sense, or deduction;
- d) the verb is often *być* 'be', as in (66b) and (66c).

(66a) *Jeśli kota nie ma w kuchni, to będzie [BYĆ^{3SING FUT}] spać [SPĄĆ 'sleep'^{3SING MASC}] w Hani szafie.*

'If the cat is not in the kitchen, he will be sleeping in Hania's wardrobe.'

(66b) *Koszulka będzie [BYĆ^{3SING FUT}] już sucha (więc możesz ją ubrać).*

'The T-shirt will be dry by now (so you can wear it).'

(66c) *Jasio będzie [BYĆ^{3SING FUT}] u kolegi. (= Myślę, że jest u kolegi.)*

'Jasio will be at his friend's place (= I think he is at his friend's place).'

The other epistemic sense is connected with futurity and, as with prediction *will*, its epistemic status is less obvious (unless we assume that statements about the future always combine futurity with some epistemic commitment). It could be analysed in the following way:

- a) the speaker considers a future state of affairs as probable;
- b) the evaluation of probability is often based on previous experience, common sense, or deduction, as in (67a) and (67b);
- c) apart from the specific future time reference, in certain cases the utterance can be interpreted as valid for all occasions, as in (67c).

(67a) *Jeśli wyjechali o szóstej, to będą [BYĆ^{3PL FUT}] na miejscu o dwudziestej.*

'If they left at 6 am, they will be there at 8 pm.'

- (67b) *Kot będzie [BYĆ^{3SING FUT}] poważnie rozczarowany, gdy zobaczy pustą miskę.*
 ‘The cat will be seriously disappointed when he sees the empty bowl.’
- (67c) *Hania nie weźmie [NEG WZIĄĆ ‘take’^{3SING FUT PERF}] psa na ręce (dobrze ją znam).*
 ‘Hania will not take a dog in her arms (I know her well).’

In the present study, future forms will be interpreted as epistemic markers if they relay the strong epistemic meaning of confidence concerning a present situation or if the utterance conveys a general truth or may be taken as valid for all occasions. Because the epistemic use of the future tense in Polish closely resembles English epistemic *will*, it will be analysed together with modal verbs expressing epistemic evaluation (*móc*, *mieć*, *powinien*, and *musieć*) and then compared with data for the English modals.

Modal modifiers are non-inflected units which are not integrated in the structure of the sentence but which modify the whole proposition in such a way as to indicate the degree of speaker’s confidence in the truth of what is being said (Ligara, 1997: 52). This category comprises modal adverbs (*niewątpliwie* ‘undoubtedly’, *przypuszczalnie* ‘probably’), modal particles (*może* ‘perhaps’, *chyba* ‘probably’), and prepositional phrases (*z pewnością* ‘with certainty’, *bez wątpienia* ‘without doubt’) with nouns indicating the degree of certainty or doubt. Żabowska (2006) distinguishes two major types of epistemic modifiers: modal markers which imply that the speaker has knowledge about the state of affairs expressed by the proposition, and markers which do not presuppose the speaker’s knowledge about the truth of the proposition. The former type comprises modifiers which imply that the proposition is true (e.g., *oczywiście* ‘of course’, *naprawdę* ‘really’) and therefore emphasise assertions (Grzegorzewska, 2001), as in (68a), and modifiers which do not imply that the proposition is true but which indicate that the speaker is prepared to accept it as true (Żabowska, 2006: 207–208). This latter set includes such items as, e.g., *praktycznie* virtually and *poniekąd* ‘in a way’, as in (68b).

- (68a) *Kot był oczywiście na balkonie i miaczał rozpaczliwie.*
 ‘The cat was on the balcony, of course, meowing desperately.’
- (68b) *Hania jest poniekąd sprawczynią tego zamieszania. (= w istotnym stopniu brała w jego powstaniu udział)*
 ‘Hania has, in a way, been the initiator of the whole mess (= she was in some important way involved in initiating it)’

In her discussion of lexical modality markers, Ligara (1997) limits epistemic modifiers to those which indicate the degree of the speaker's commitment to the truth of the proposition, to the exclusion of items which emphatically strengthen assertions or otherwise evaluate the content. On this approach, epistemic modifiers — epistemic adverbs, particles, prepositional phrases with nouns denoting commitment or reservation, and complex epistemic expressions which are not integrated with the rest of the sentence — comprise: i) (for strong commitment, as in example 69a) *na pewno* 'for sure', *z (całą) pewnością* 'with (all) certainty', *niewątpliwie*, *niezawodnie*, *niechybnie* 'undoubtedly', *bez wątpienia*, *ponad wszelką wątpliwość* 'without doubt', *według mnie*, *moim zdaniem*, *w moim przekonaniu* 'in my opinion'; ii) (for probability, as in 69b) *prawdopodobnie*, *przypuszczalnie* 'probably', *najprawdopodobniej* 'in all probability', *chyba* 'probably', *prawdopodobnie*, *prawdopodobnie* 'in all likelihood', *zapewne* 'presumably'; and iii) (for mere possibility or doubt, as in 69c) *(być) może* 'perhaps', and *wątpliwie* 'doubtfully'.¹⁸

(69a) *Jasio na pewno nie zamknął kota na balkonie celowo.*

'Jasio for sure did not lock the cat out on the balcony on purpose.'

(69b) *Kot najprawdopodobniej zasnął w donicy.*

'In all probability, the cat fell asleep in the flowerpot.'

(69c) *Może nie słyszał, że wychodzimy.*

'Perhaps he didn't hear us going out.'

A separate group are modal modifiers which combine epistemic evaluation with evidentiality. By *widocznie* 'apparently' and *widać*¹⁹ 'evidently' the speaker indicates that his or her confidence is based on inference, as in (70a); *rzekomo* and *jakoby* 'allegedly' mark hearsay combined with mistrust of the information or its source, as in (70b). In principle, markers *podobno* and *ponoć* 'reportedly' indicate hearsay without specific epistemic overtones, which, however, may arise in the context of use. According to Wiemer (2006: 10), "[by] itself *podobno* does not determine whether the speaker takes any (positive or negative) stance toward P's veracity or toward the trustworthiness of the 'source' from which P comes; such a stance can be imputed rather from discourse conditions." Still, a number of authors list them among epistemic particles (Bralczyk, 1978; Rytel, 1982; Ligara, 1997; Tutak, 2003).

¹⁸ Compiled on the basis of: Bralczyk (1978), Rytel (1982), Ligara (1997), Tutak (2003), and Krzyżyk (2008).

¹⁹ Wiemer (2006: 18) includes *widać* [infinitive followed by a clausal complement] among predicatives, which he defines as uninflected predicates.

- (70a) *Widocznie Hania nie zdążyła na autobus (skoro jeszcze nie wróciła).*
‘Apparently Hania missed the bus (if she has not returned yet).’
- (70b) *Rzekomo sami zrezygnowali z wyjazdu (ale przypuszczam, że to rodzice ich nie puścili).*
‘Allegedly they gave up on the trip themselves (but I suspect it was the parents who didn’t let them go).’

A closely related group of expressions are evidential–epistemic verbs *wyda-je się* and *zdaje się* ‘it appears’, which, used in the third person singular either parenthetically or followed by a clause (as in examples 71a and 71b respectively), indicate that the speaker’s judgment is based on inference from some unspecified source (Wiemer, 2006: 54).

- (71a) *Wydaje się, że dzieci nie ma w domu. (Światła są pogaszone.)*
‘It seems the children are not at home. (The lights are off).’
- (71b) *Cała ta historia z nauczycielką przyrody ma, zdaje się, drugie dno.*
‘The whole incident with the nature teacher has, it seems, a back story.’

Epistemic adjectives which scope over the proposition occur in structures of the *be-ADJ-that* type with extraposed subject, such as: *(jest) pewne/ prawdopodobne/ możliwe/ niewykluczone* ‘(it is) certain/ likely/ possible/ not impossible’, or with verb *be* ‘być’ in the first person: *jestem pewien/ przekonany/ przeświadczony* ‘I am sure/ convinced/ certain’, as shown in (72a) and (72b).²⁰

- (72a) *Możliwe, że Jasio też będzie nosił okulary.*
‘It is possible that Jasio will be wearing glasses as well.’
- (72b) *Jestem przekonana* [BE^{1SING PRES} PRZEKONANY ‘convinced’^{PASS PART NOM SING FEM}], że Hania bardzo ucieszy się z tej książki.
‘I am convinced that Hania will be very happy with this book.’

Modal nouns occur in prepositional phrases, discussed above under the umbrella term of epistemic modifiers, and in fixed constructions which take clausal complements. The evaluating subject (the speaker) may be concealed, as in *istnieje prawdopodobieństwo/ możliwość* ‘there is probability/ possibility’, and *nie ulega wątpliwości* ‘there is no doubt’, or overt, with the noun complementing verb *mieć* ‘have’ in the first person: *mam pewność/ przeświadczenie/*

²⁰ Epistemic adjectives, nouns and lexical verbs have been compiled on the basis of: Bralczyk (1978), Rytel (1982), Ligara (1997), Tutak (2003), and Krzyżyk (2008).

przecucie/ wrażenie ‘I have certainty/ conviction/ feeling/ impression’, as shown in (73a) and (73b).

(73a) *Istnieje prawdopodobieństwo, że samolot się spóźni i będą musieli wracać późniejszym pociągiem.*

‘There is probability that the plane will be late and they will have to take a later train.’

(73b) *Mam [MIEĆ^{1SING PRES}] pewność, że ten stos książek sam się nie przewrócił.*

‘I have certainty that this pile of books did not collapse of its own accord.’

Finally, epistemic evaluation in Polish can be expressed by lexical verbs. These can follow impersonal modal verb *należy* — indicating obligation and non-epistemic necessity — and non-epistemic modal particle *można* to conceal the evaluating subject, e.g., *należy sądzić/ się spodziewać/ przypuszczać/ wątpić* ‘it is reasonable to think/ expect/ suppose, doubt’, and *można sądzić/ przypuszczać/ się spodziewać* ‘one can think/ suppose/ expect’. The verbs are used in the infinitive, as in (74a). Used with the first person subject, they explicitly indicate the degree of the speaker’s commitment to the truth of the proposition, e.g., *myślę/ sądzę* ‘I think’, *uważam* ‘I believe’, *przypuszczam* ‘I suppose’, *spodziewam się* ‘I expect’, *domyślam się* ‘I guess’, *wątpię* ‘I doubt’, as in (74b) (Krzyżyk, 2008). To this group belong also two-place verbs *wydaje mi się* and *zdaje mi się* ‘it seems to me’ (74c), which, as Wiemer (2006) points out, stand in contrast to evidential–epistemic *wydaje się/ zdaje się* ‘it seems’ in not making any reference to the possible source of information.

(74a) *Według Hani zabawa skończy się o siódmej, ale można się spodziewać [SPODZIEWAĆ SIĘ ‘expect’^{INF}], że potrwa znacznie dłużej.*

‘According to Hania the party will end at 7 pm, but it can be expected that it will last much longer.’

(74b) *Przypuszczam [PRZYPUSZCZAĆ ‘suppose’^{1SING PRES}], że wróci koło dziesiątej.*

‘I suppose she will be back at about 10.’

(74c) *Wydaje mi się [WYDAWAĆ SIĘ ‘seem’^{3SING PRES} JA ‘I’^{DAT}], że ktoś ją odprowadzi.*

‘It seems to me (= I think) that somebody is going to see her home.’

2.4 Modality in academic discourse: Previous studies

Modality in academic discourse has been analysed from different perspectives. The most prominent among the existing variety is perhaps the one focused on the distinctive properties of academic language, variation between the spoken and written forms of language, specific features of L2 English, interdisciplinary variation, and comparative cross-linguistic and cross-cultural studies. With regard to the characteristic features of academic discourse, Swales (1990) drew attention to the potential of epistemic markers to highlight the gap between the present state of knowledge or the existing consensus as to what constitutes the facts and practices of a particular community on the one hand, and a proposal put forward for consideration and acceptance by the community on the other. By clearly identifying the gap, academic authors create a research space they intend to occupy by contributing their share to the development of the discipline and in this way legitimise their research and attempt at publication (Swales, 1990: 158). The role of epistemic evaluation in academic discourse was also aptly summarised by Crompton (1997: 274):

Academic writers need to make a clear distinction between propositions already shared by the discourse community, which have the status of facts, and propositions to be evaluated by the discourse community, which only have the status of claims. Evaluative or tentative language is one of the signs by which claims may be distinguished from facts. (Crompton, 1997: 274)

Although epistemic evaluation has been shown to play a special part in academic discourse as a gap-indicating device, a signal of a claim to knowledge, and a politeness strategy (Myers, 1989), studies of the density of modality markers in academic texts have produced a complex pattern of results, depending on the spoken or written mode, discipline, genre, text section and individual factors more subtly connected with the subject matter, perspective and audience (e.g., Thompson, 2002). Biber and Finegan (1988) analysed style and content disjuncts as markers of stance in different text types, including academic prose. Among the six categories of stance adverbials they distinguished, two represented epistemic stance: certainty and conviction on the one hand, and possibility, likelihood and hedging on the other. The authors conducted a cluster analysis to identify different text styles according to the preferred use of stance adverbials. The findings indicated that against other types of communication, academic prose was marked by a relatively “faceless”

style (p. 23), with few exponents of stance, which, if used, indicate likelihood and possibility, i.e., low epistemic values, to the virtual exclusion of certainty markers.

The comparatively low density of stance markers in academic prose was confirmed in a later study by Conrad and Biber (2000), who studied the distribution of epistemic, attitude and style stance adverbials in conversation, academic prose, and news reportage. The results showed that epistemic adverbials were much more frequent in spoken discourse than in the written material but at the same time demonstrated that they occurred significantly more frequently in academic writing than in the news.

The preference for low-value modality markers in academic discourse was also noticed by Rezzano (2004), who investigated signals of epistemic possibility, epistemic necessity and evidentiality in Discussion/ Conclusion sections of academic articles. The markers were analysed in terms of value (low, high, or median), manifestation (implicit or explicit), and orientation (subjective or objective). The results demonstrated that low-value modality was applied more frequently than median- and high-value modality, and that it was most commonly realised by modal verbs *may* and *can*. High-value modality, in turn, was found to be most frequently realised by lexical verbs, with hardly any instances of epistemic *must* and *should*.

Thompson (2002) studied the use of eight modal verbs — *may*, *might*, *can*, *could*, *will*, *would*, *should*, and *must* — in a two-part corpus of PhD theses in agricultural botany and agricultural and food economics. A comparison of the modal verb counts for both parts of the PhD corpus with data for published research articles in these two disciplines, general academic prose, and a corpus of academic lectures showed close similarities among the written corpora and evident points of difference when the written material was compared to lectures. The two modal verbs most frequently attested in both batches of PhD theses were *may* and *can*, which corresponds with the other written corpora used for comparison and tallies with results reported by other researchers (e.g., Rezzano, 2004). The analysis also revealed that all the modal verbs except *might*, which was generally very rare, were more common in Discussion sections of the theses. Clauses containing modal verbs were also studied in terms of their predominant functions: describing properties of subjects of enquiry; considering alternatives; hedging; directing the reader; indicating what is possible or necessary given the circumstances; claiming legitimacy; expressing enabling function; referring to required actions or conditions; stating expectations and making predictions; suggesting potential; and stating principles (Thompson, 2002: 320).

Warchał (2007) looked into the type of modality expressed by modal auxiliary *must* in a corpus of linguistics research articles. The analysis, limited to main clause occurrences, showed that root *must* was five times more frequent in the corpus analysed than epistemic *must*. These findings correspond to the results reported by Keck and Biber (2004) for the written subcorpus of academic texts and by Rezzano (2004) for Discussion sections of research articles. The analysis also demonstrated that the force and arbitrariness of root *must* was often toned down by such factors as: the occurrence of *must* with third person subject, especially inanimate; inclusive *we* in the subject position; and the use of the passive.

A later study by the same author (Warchał, 2008) focused on modal verb *should* as a device for establishing the writer's authority and managing the interaction with the audience. In a corpus of linguistics articles, *should* was attested in its root meaning in 60% of cases. The epistemic meaning was identified in slightly more than a quarter of cases, followed far behind by quasi-subjunctive and hypothetical uses. In more than half of the hypothetical uses *should* was associated with verbs of speaking, cognitive processes and intellectual states, which may suggest politeness strategy. Another frequent use of hypothetical *should* was in subordinate clauses of condition, usually combined with inversion, which may suggest attention-capturing function.

Other studies have focused specifically on the features of spoken academic discourse or on the differences between academic speech and writing. Biber (2006a) devoted one chapter of his analysis of university registers to expressions of stance, which he defined broadly as "attitudes that a speaker has about information, how certain they are about its veracity, how they obtained access to the information, and what perspective they are taking" (p. 87). Epistemic evaluation is part of this complex marking of the status of information. The spoken part of the corpus which served as the basis for this analysis comprised the following register categories: class sessions, classroom management, labs/ in-class groups, office hours, study groups, and service encounters; the written part involved: textbooks, course packs, course management, and institutional writing. The results showed that all categories of stance markers included in the study — modal verbs, stance adverbs, and stance complement clauses controlled by verbs, adjectives, and nouns — were more common in speech than in writing and that modal verbs were the most frequent markers of stance in both spoken and written varieties of university language (p. 95). Analysed individually, only modal verbs *must*, *may*, and *should* turned out to be more frequent in written than in spoken registers, which accords with earlier findings (Keck and Biber, 2004). With regard to stance adverbs, epistem-

ic adverbs (indicating certainty and likelihood) were most common of all the stance adverbs in spoken discourse and tended to prevail in writing as well (Biber, 2006a: 104). Finally, certainty and likelihood verbs turned out to be the two most common classes of stance verbs requiring a clausal complement and, like epistemic adverbs, were more common in spoken than in written registers (p. 106).

These results confirmed and extended the findings obtained in an earlier study (Keck and Biber, 2004), which focused specifically on the distribution and discourse function of modal verbs across spoken and written university registers. Also this analysis pointed to the fact that modal verbs occurred much more frequently in speech than in writing. Moreover, it demonstrated that the prediction/ volition cluster (in particular *will* and *would*) was most abundantly represented in the corpus, and possibility/ permission/ ability markers (*can*, *could*, *may*, *might*) were considerably more common than necessity/ obligation markers (*must*, *should*, *have to*) in all spoken and a vast majority of written texts — with the exception of institutional writing and course management.

Artiga León (2006) analysed epistemic lexical verbs in the Michigan Corpus of Academic Spoken English (MICASE) in terms of their frequency and function as signals of the speaker's commitment to the truth of the proposition and as devices to establish interaction with the audience. A comparison with the data obtained for written academic English (Hyland, 1998a) showed that among the top five most frequent items in MICASE: *think*, *seem*, *show*, *feel*, and *guess*, only one (*seem*) featured in the list of 17 epistemic verbs representative for the written corpus. The results pointed to the fact that spoken and written varieties of academic discourse relied on different sets of epistemic markers. As regards distribution of the verbs across disciplines in MICASE lectures, the counts were much higher for soft disciplines (more than 68% of all attested items) than for physical sciences and engineering, and biological and health sciences. It was also established that verbs *feel* and *seem* were much more frequently used in soft disciplines.

In another study based on MICASE, Łyda and Warchał (2008) looked into the use of selected modality markers indicating probability and necessity with the relation of concession in the interactional component of the corpus. The results showed that modal verbs of probability were more than four times more frequent in this section of MICASE than modal verbs of necessity; the proportion was reversed in the case of disjuncts, with disjuncts of probability outnumbered by those of necessity. Both modal verbs and disjuncts of probability were found to prevail in the acknowledgment move of the concessive

relation, while modal verbs and disjuncts of necessity were more frequently associated with the counterclaim.

Other authors have addressed selected features of L2 academic English. Crawford Camiciottoli (2004) studied the use of modal verbs in a corpus of business lectures delivered by native speakers of English and by lecturers who used English as an additional language. The most frequent modals in both groups of speakers were *will* and *can*, which tallies with data from non-academic corpora. As regards distinctive features of L2 English, important differences were found in the use of *may* and *would*, which were conspicuously more frequent in native speakers' lectures. The author attributed this difference to two factors: the possibly lower linguistic competence in the area of English epistemic modality, which, as noted by Hyland (1994, 1998), had not received sufficient attention from English L2 course designers, and the descriptive rather than theoretical character of the examined lectures given by non-Anglophone speakers.

As regards L2 student writing, Hyland and Milton (1997) conducted an analysis of essays written by Chinese students and British school leavers to look into the frequency, range and preferences in the use of epistemic markers. In general, both groups of students were found to rely on epistemic devices to the same extent, with *will*, *may* and *would* appearing in the top six most frequent epistemic markers (p. 188). However, if epistemic *would* was by far the most frequent marker used by native speakers, *will* and *may* turned out to be the two most frequent devices in L2 essays. Another important finding was that the repertoire of epistemic devices was considerably smaller in the case of L2 writers. In particular, items *appear*, *apparently*, *perhaps*, and *possible* were heavily underrepresented in Chinese students' texts. With regard to the preferred category of markers, L2 writers were found to rely to a greater extent on modal verbs than their Anglophone peers, who, in turn, used markedly more adverbials than Chinese students (p. 190). Another important point of difference was the value of the markers. The results showed that compared to native speakers, L2 writers tended to be more assertive in tone and employ a greater number of certainty markers, which accounted for about half of the epistemic markers they used.

Hinkel (2002) investigated a comprehensive set of linguistic and rhetorical features in essays written in L2 English by students coming from six linguistic backgrounds: Chinese, Japanese, Korean, Vietnamese, Indonesian, and Arabic, and compared their frequencies to those established for native speakers of American English. On the whole, all groups of L2 writers tended to use more private verbs expressing intellectual states, acts, and cognitive process-

es than their American peers (p. 106). With regard to modal verbs, possibility modals (including epistemic possibility) were used with a comparable frequency by native speaker, Vietnamese, Indonesian and Arabic writers, but were more common in Chinese, Japanese, and Korean essays; necessity and obligation modals (including epistemic necessity) turned out to be markedly more frequent in all groups of L2 texts than in texts by native speakers; finally, the predictive modal *would* occurred very rarely in L2 texts (p. 110). These observations tally with data obtained earlier for Hong Kong students (Hyland and Milton, 1997), who, compared to Anglophone writers, were found to rely to a greater extent on *may* and to use *would* more rarely. The density of epistemic adjectives and adverbs was comparable in essays by American, Chinese, Japanese, and Indonesian students; Korean writers were found to use them more frequently, while Vietnamese and Arabic authors tended to use them more rarely than native speakers (Hinkel, 2002: 152).

Another important trend in the research into modality in academic discourse have been cross-disciplinary comparative analyses. Skelton (1988b) analysed scholarly articles from hard sciences and humanities in terms of author comments concerning the truth-value of propositions, their applicability, and probability that the state of affairs they described was the case, with a focus on such categories as copulas other than *be*, modal auxiliaries, epistemic adjectives introduced by *It is*, and lexical verbs of mental processes. Although on average no significant differences were noted between arts and sciences in the frequency of epistemic comments, the single text with the greatest number of markers was a philosophy article, and the one with fewest epistemic comments was an article in organic chemistry. As regards the rhetorical structure of science articles, epistemic markers were found to cluster towards the end of the paper — an observation confirmed later for medical discourse (Salager-Meyer, 1994). No such regularities were observed in the humanities. The analysis also showed that there was a considerably greater variation in the markers used in the humanities than in sciences, where the repertoire of epistemic comments was much smaller.

Skelton's observations concerning the distribution of epistemic markers in science articles were confirmed by Hyland (1998a) and his research on hedging in experimental research articles in the field of cell and molecular biology, which showed that the density of epistemic devices was highest in the Discussion section (p. 154). This study also showed that there were some important differences in the frequency and choice of epistemic markers in general academic and hard science text data bases. The most commonly used category of hedges in the corpus of experimental biology research articles were lex-

ical verbs, followed by adverbs, adjectives, and modal verbs, and far behind by nouns (Hyland, 1998a: 104). With regard to lexical verbs, verbs *seem* and *assume* were found to be markedly underrepresented in science articles when compared to more general academic corpora, while verbs *indicate*, *suggest*, *appear* and *propose* were attested more frequently in the science corpus (p. 128). Compared with general academic corpora, science texts contained fewer epistemic modal verbs, the majority of uses covered by *would*, *may*, and *could*. In particular, epistemic *will* was attested more rarely, while epistemic *should*, although infrequent, was recorded more often than in general academic text collections (p. 107). Figures for *likely* and *probably* were found to be comparable to data from existing general academic corpora; adjective *possible* was slightly more frequent in the cell and molecular biology corpus (p. 149).

A later study by the same author (Hyland, 1999a) looked into the frequency and functions of stance features in a multi-discipline corpus of academic articles. The results showed that epistemic expressions limiting the author's commitment to the proposition were more common in soft disciplines, such as philosophy, applied linguistics and marketing, than in science and engineering. Differences were also observed in the preferred category of hedges: writers in soft disciplines tended to use more speculative lexical verbs, such as *believe*, *suspect* or *suppose*, to tone down the force of the statements, while in science and engineering articles there was a preference for modal verbs and for verbs such as *indicate*, *imply* and *suggest* (p. 117).

Salager-Meyer (1994) in her analysis of hedging in medical discourse studied a corpus of research papers and case reports in order to establish the frequency and type of hedges in different sections of the texts and the ways in which they reflected the primary communicative purpose of the sections. The results showed that the final sections of the studied genres — Discussion for the research paper and Comments for the case report — contained the greatest number of hedges. Expressions limiting the author's commitment to the proposition and qualifying states of affairs in terms of their probability, discussed by the author under the label of shields and compound hedges, were among the top three most frequent categories of hedges in both genres (p.158).

Vold (2006a) investigated low- and middle-value epistemic modality markers in English, French and Norwegian research articles in medicine and linguistics. While the analysis showed some interesting disciplinary differences in the French part of the corpus, the variation was least marked in the Norwegian batch. With regard to the English subcorpus (analysed in more detail in Vold, 2006b), epistemic modality markers were slightly more common in the field of linguistics. There were also some differences observed with regard to

the type of markers: modal verb *could* occurred considerably more frequently in medical than in linguistic papers, as did *may* and *might*. By contrast, verbs *seem*, *assume*, and *appear* were attested mainly in linguistics papers, as was *perhaps*, which was only sporadically used by medical authors (Vold, 2006a: 75–76). The scarcity of *seem* and *assume* in medicine tallies with the findings reported by Hyland (1998) for biology articles, where these two verbs were comparatively rare. Also the preference for speculative verbs in linguistics articles and the somewhat higher figures for epistemic modals reported for medicine correspond with the data obtained by Hyland (1999a, 2007) for soft disciplines and sciences. While the observed variation between academic fields was relatively small, there were some noteworthy cross-linguistic points of difference. Epistemic modality markers were found to be much more common in English and Norwegian research articles than in French texts (Vold, 2006a: 77).

Despite the reported differences in the use of epistemic expressions in sciences and in the humanities, some findings indicate that the rhetorical differences between soft and hard disciplines need not always be straightforwardly reflected in the use of epistemic modality markers. Lafuente Millán (2008) studied the use of hedges, boosters and approximators in research articles in four disciplines: food technology, urology, business management, and applied linguistics. The results showed that although low-value markers were attested more often in business management articles than in other fields, the figures for hedges were found to be rather high in all the studied disciplines. Low-value markers greatly outnumbered expressions of certainty in all sets of articles. The greatest number of certainty markers was again found in business management articles, but the figures for applied linguistics and urology were found to be comparable (p. 72). The most frequently used category of low-value epistemic markers were modal verbs, which outnumbered other categories of markers in all four disciplines.

Vázquez and Giner (2008) studied epistemic modality markers functioning as hedges in research articles in marketing, biology, and mechanical engineering. Their results matched Hyland's (1998a, 1999a, 2007) data for soft and hard disciplines: epistemic devices limiting the author's commitment were found to prevail in marketing articles, where they were more than twice as frequent as in the biology batch and more than three times more common than in mechanical engineering articles. The authors conclude that the huge disparity in the density of low-value epistemic markers across the three fields may reflect the fact that the disciplines operate with data whose epistemological status, accuracy, measurement techniques, and dispersion are different.

Approaching academic communication from cross-cultural and cross-linguistic perspective, Janik (2009) conducted a comparative analysis of Russian- and German-language historiographic articles to study the use of evidential expressions: references to shared knowledge; non-specific references to research literature; footnotes; certainty markers; and markers of uncertainty in these two groups to texts. Important differences were observed in the frequency of all five types of markers, including those which combined evidential and epistemic meanings. In particular, Russian writers used almost three times as many references to shared knowledge as did German authors; by contrast, epistemic expressions imparting high levels of certainty were attested almost three times more often in the German subcorpus than in texts by Russian scholars. Markers of uncertainty were also found to occur significantly more frequently in texts by German authors.

Vázquez Orta (2010) looked into the distribution of modal verbs and their function as epistemic stance markers in English-language research articles from the field of business management written by English and Spanish scholars. The results showed that the most frequent modal verbs in the English part of the corpus were *may*, *can* and *will*. In the Spanish subcorpus the order was different, with the most frequent modal verb *can* followed by *will* and, somewhat further behind, by *may* (p.84). As regards the density of low- and high-value epistemic markers, English writers were found to use more hedges than Spanish authors. The greatest number of hedging modal verbs were found in Discussion sections of English articles and in Introduction sections of Spanish papers. As regards high-value modal verbs, they turned out to be slightly more common in Spanish texts than in the English part of the material.

Warchał (2010a, 2010c) discussed the frequency and use of modal and quasi-modal verbs expressing certainty and commitment in Polish- and English-language linguistics research articles. The results showed that, with research limited to one category of high-value epistemic devices, the English part of the corpus outnumbered the Polish batch of articles by about 3.5. The analysis also demonstrated that the ratio of epistemic and non-epistemic uses of the verbs considered was similar in both subcorpora, with 14% and 15% of the attested examples representing epistemic modality in Polish and English respectively.

In her intercultural and interlinguistic study, Pérez-Llantada (2010) investigated epistemic lexical verbs in a three-part corpus of research articles written in English by Anglophone authors, in English by Spanish scholars, and in Spanish by native speakers of the language. The results showed that the density of lexical verbs as markers of epistemic assessment varied with the language and with the cultural context. Spanish authors writing in English were

found to use the highest number of epistemic lexical verbs in three article sections: Introduction, Results, and Discussion, although the figures for the last two sections closely resembled those established for texts written by Anglophone scholars. Articles written in Spanish contained fewer epistemic lexical verbs than the other two sets of articles in Introduction, Results and Discussion sections. There were also differences observed in the type of verbs preferred in the three subcorpora. Spanish authors writing in English and English authors showed a significant preference for evidential lexical verbs in the Results sections of the papers, while in the case of texts written in Spanish the difference was not so well marked. Also, Spanish scholars writing in Spanish tended to prefer judgment lexical verbs in Introduction and in Discussion sections, which again was not the case with the other two groups of writers. The author commented that the observed similarities between two groups of texts — English research articles by Anglophone and Spanish scholars — might be a symptom of the influence of globalisation on writing practices, styles of scholarly thinking and forms of creating knowledge.

2.5 Concluding remarks

This chapter has sought to give a brief account of selected approaches to the study of modality and to introduce the concepts that have often been referred to in various attempts to define or delimit it. These include the relationship between the modal system and the mood; the non-propositionality of modal meanings; subjectivity, objectivity, and intersubjectivity of modalised statements; the irrealis status of modalised utterances and the interrelated concepts of non-factuality, non-actuality, and non-assertion; the status of futurity in the discussion of modality; and the concept of potential or potentiality. Since it would be very difficult, if not quite impossible, to speak of a broad consensus on virtually any of these issues, it may be more felicitous to treat modality as a gradable category, with central realisations, marked by a set of characteristic features, bearing a higher degree of modality than peripheral realisations, which have only some of these properties (Salkie, 2009).

Another aim of this chapter has been to discuss the major modality types distinguished by various authors and the problem areas which arise in these typologies. Among these problematic issues are: the status of dynamic meanings; the integrity of root modality, which embraces deontic and dynamic sens-

es; the (non)modal nature of ability and volition; the status of speech-act modality; the relationship between epistemic and evidential meanings; and the evidential/ epistemic status of inferred knowledge.

A separate section has provided a brief overview of epistemic modality markers in English and in Polish on the basis of the modality literature available. For convenience and transparency, epistemic markers have been grouped into categories and discussed in the same order for both languages, but it is not assumed that the order reflects the centrality or frequency of a particular category in English or in Polish: modal and quasi-modal verbs (and epistemic future tense use in Polish), modal modifiers (adverbs, particles, and prepositional phrases), structures with adjectives and nouns, and lexical verbs. The debatable status of some markers is directly related to the definitional problems posed by modality and concerns in particular emphatics which reinforce assertions, some illocutionary verbs which implicitly convey epistemic qualification or withhold the speaker's commitment to the proposition they introduce, and evidential markers which may or do indicate epistemic stance of the speaker. In this study it is assumed that an expression acts as an epistemic marker if it explicitly indicates the degree of probability that the state of affair expressed by the proposition holds or the degree of certainty or doubt that the proposition is true or false. It may indicate the source of information on which the speaker relies provided that evidential meaning coincides with epistemic qualification. It is also assumed (after Vold, 2006a) that it must be a recognisable lexical or grammatical unit rather than a sense that emerges from a complex pattern of linguistic and stylistic choices in a sequence of sentences or in a paragraph.

The final section of this chapter has reviewed some of the studies of modality — also investigated under the labels of stance, hedging, and evidentiality — in academic discourse. The present analysis is in the spirit of the works discussed at its closure, cross-linguistic and cross-cultural studies of selected classes of modality markers. The next chapter will present in more detail its aims, describe the material on which it is based and explain the procedure taken in the analysis of data.

3. The project

This chapter describes the aims of the present study, introduces the corpus which is the source of data, presents the list of epistemic markers used as search words, and explains the procedures applied in the analysis.

3.1 Aims

The focus of this project is on the linguistic markers of the degree of confidence and doubt in journal articles in the field of linguistics which originate and operate in two linguistic and cultural contexts: articles written in English by scholars affiliated with English-speaking academic institutions and published in international English-language academic journals on the one hand and articles written in Polish by Polish authors and published in high-ranked national journals on the other. It is expected that the intellectual traditions in which Anglophone and Polish academic discourse practices were growing, based on different attitudes to knowledge, writer-reader relationship, and writing itself (some of those differences signalled in Section 1.2), may have nurtured somewhat different epistemological assumptions about what constitutes a scientific fact and what remains a belief, hypothesis or claim, whether it is necessary to explicitly mark the propositional attitude in the case of the latter, where and how to mark it, and in what circumstances facts reported call for an explicit index of certainty. Since both sets of texts comprise linguistics journal articles, the analysis is hoped to offer some insight into the operational component of the scholarly style in these two contexts: the use of epistemic modality markers may be informative of the relationship between the writer

and the reader, the degree of author's visibility, the degree of reader's involvement and the level of heteroglossia in the text, i.e. the extent to which the author's voice undertakes "to acknowledge, to engage with or to align itself with respect to other positions which are in some way alternatives to that being advanced by the text" (White 2003:260).

The questions this project sets out to address can thus be summarised in the following way:

- Is epistemic evaluation marked with the same frequency in both sets of articles?
- Are high, middle and low degrees of confidence marked with a similar frequency? Are there any differences in this respect between English- and Polish-language articles?
- What categories of markers prevail as exponents of particular modal values in the two sets of texts?
- Do epistemic markers tend to cluster in particular article sections? Are there any differences in their distribution that might be related to the value of the marker? Are there any points of difference in this respect between English- and Polish-language articles?
- Is there any indication of potential differences in what tends to be epistemically qualified in these two sets of texts?

An analysis of the use of epistemic markers seems promising also in view of the fact that some of the reported differences in the organisation and rhetoric of Anglophone and Polish academic texts do not seem to fit the Saxonian-Teutonic dichotomy, which is sometimes used as a point of reference in comparing the two writing styles (see Section 1.4). As shown in Chapter 1, the most salient points of difference between the two intellectual styles include the amount of dialogue with the reader and other points of view, the degree of linearity, the readiness to negotiate stance and weigh arguments, and the importance attached to clarity of argumentation. However, the Teutonic style, often traced in Polish scholarly writing, which tends to be contemplative, monologic, digressive and rich in theoretical background, is also associated with greater confrontativeness, direct polemic and authoritative tone, that is with features which have not been found characteristic of Polish academic discourse. The preference of Polish authors for a more defensive and tentative tone may be reflected in the extent to which certainty and doubt are explicitly marked in the text, the place in which they tend to be marked and the preferred way of marking. The obtained results may then serve as a point of departure in further cross-linguistic and cross-cultural comparisons.

In addressing epistemic modality as a broad semantic-pragmatic concept rather than an isolated grammatical subsystem, the analysis may provide some information about the internal structure of the category in the two languages: the epistemic values which tend to be marked more often, the repertoire of markers for particular values, the sets of central and peripheral markers, the preference for explicit or implicit epistemic marking, and the extent to which the epistemic evaluation involves explicit personal commitment of the author. It thus takes into account the fact that the two languages offer their speakers different affordances, which are then reflected in discourse practices and preferred rhetorical strategies. Research into these practices and strategies in closely defined fields of discourse, of which the present study is an example, may in turn add to a better understanding of the underlying linguistic systems.

3.2 Corpus description

The analysis is based on a two-part corpus of 400 journal articles published in the years 2001-2006 in linguistics-related peer-reviewed journals, with a total of about 3 million running words.²¹

The English-language subcorpus (English Linguistics Articles, henceforth ELA) comprises 200 electronically available articles drawn from five international linguistics journals: *Journal of Pragmatics*, *Language and Communication*, *Language Sciences*, *Lingua*, and *Linguistics and Philosophy*, each journal contributing 40 articles of varied length.²² The total number of words in this part of the corpus is about 2.1 million. The affiliation of the author of each article — or the first two authors in the case of multi-authored papers — was taken into consideration to confirm a native-like command of English, which was also ensured by the strict reviewing systems of the journals.

The Polish-language subcorpus (Polish Linguistics Articles, henceforth PLA) consists of 200 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 Polskie-*

²¹ Sinclair (1991, 2004) and McEnery and Wilson (2001) were the most important sources consulted in deciding upon the size of the corpus, the period covered and the corpus design.

²² All retrieved from Science Direct database.

go Towarzystwa Językoznawczego, *Etnolingwistyka*, *Język a Kultura*, *Onomastica*, *Poradnik Językowy*, *Slavia Meridionalis*, and *Studia z Filologii Polskiej i Słowiańskiej*. The size of this part of the corpus is about 850 thousand running words. The authors (the first two authors in the case of multi-authored papers) were affiliated with 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 and converted to text files.

The articles were saved as text files, lists of references, figures and tables were removed, and tags were added for article sections.²³ The division into sections — very problematic in the case of the Polish subcorpus — turned out to be a challenge also in ELA, where only a few articles contained sections easily identified as Introduction, Material and Method, Results, Discussion, and Conclusion. Some text segments had to be marked as Theoretical Background and Results and Discussion, a number of articles contained Abstract as an integral section, and in some cases Appendix was added which contained the author's text rather than tables and additions. In many cases the only feasible tagging was: Introduction, Main Body, and Conclusion.

The situation in the PLA was still more difficult for the tagger, although there was much less variation in this part of the corpus than in the ELA: the vast majority of Polish articles were not explicitly divided into sections.²⁴ Thus, tags for Material and Method, Results, and Discussion were introduced only in the few texts that actually had sections with corresponding titles; in all other cases Main Body was used instead, with Introduction and Conclusion sections identified by actually reading the papers and deciding on the point of division on the basis of the content and metatextual clues.²⁵

In view of this rather unintelligible system, the data for article sections are presented in Chapter 4 as found in the corpus (i.e., under the headings of sections where they were attested), but comparisons are carried out with reference to four segments:

²³ The corpus was compiled in 2007. The initial searches were conducted on complete and untagged material (e.g., Warchał 2010 a,b,c).

²⁴ This was not surprising since, as observed in Section 1.4, Polish articles often take the form of continuous texts, sometimes broken by typographic marks.

²⁵ As I was the only tagger, I realise that this decision is fraught with problems. I worked on the tagging in the first months of 2011 and then revised the Polish part of the corpus at the beginning of 2012. The initial decisions were changed in very few, isolated cases.

1. Introduction;
2. Theoretical Background, Material and Methods, Results, and Main Body occurrences falling within the first half of the article (for brevity referred to as Main Body 1);
3. Discussion, Results and Discussion, and Main Body occurrences falling within the second half of the article (for brevity referred to as Main Body 2); and
4. Conclusion.

Although certainly imperfect, this decision should enable a rough comparison between parts of texts serving different functions and engaging with the reader in different ways.

3.3 The analysis

The two subcorpora were scanned with *Oxford WordSmith Tools* 5.0 for Windows (Scott, 2008) for occurrences of epistemic modality markers. The list of English epistemic markers was compiled on the basis of Palmer (1979, 1986), Coates (1983), Quirk et al. (1985), Biber and Finegan (1988), Simpson (1993), Westney (1995), Hoyer (1997), Hyland and Milton (1997), Gavins (2005), and Pérez-Llantada (2010). Polish epistemic markers were drawn from Bralczyk (1978), Rytel (1982), Ligara (1997), Grzegorzczkova (1998, 2001), Tutak (2003), Żabowska (2006), and Krzyżyk (2008). Next, ten articles of each subcorpus were analysed manually for potential additions to the list. The complete list of items used as search words to run the concordancer is given in Table 3.1.

Table 3.1 Epistemic markers used as search words

(quasi-)modal verbs and Polish 3 rd person future tense and hypothetical forms		
HIGH	be* bound to be* going to can't couldn't have* (got) to must need need* to will (predictability; see Section 2.3.1)	future tense (predictability; see Section 2.3.2) musieć* 'must' nie móc* 'can't'

MIDDLE	be* supposed to ought to should would (predictability; see Section 2.3.1)	mieć* 'is to' 'purportedly' powinien* 'should'
LOW	could may might	móc* 'may'
modal modifiers		
HIGH	by no means certainly definitely doubtless <u>for certain</u> for sure <u>incontestably</u> incontrovertibly <u>indisputably</u> indubitably no doubt <u>on no account</u> surely <u>unarguably</u> undeniably undoubtedly unquestionably without (a shadow of a) doubt	bez wątpienia 'without doubt' <u>bez (żadnych) wątpliwości</u> 'without (any) doubt' na pewno 'for sure' <u>niechybnie</u> 'undoubtedly' niewątpliwie 'undoubtedly' <u>niezawodnie</u> 'undoubtedly' <u>ponad wszelką wątpliwość</u> 'without doubt' w żadnym razie 'on no account' <u>w żadnym wypadku</u> 'on no account' z (całą) pewnością 'with (all) certainty'
MIDDLE	arguably in all likelihood (most) likely presumably probably supposedly	chyba 'probably' najpewniej 'in all likelihood' najprawdopodobniej 'in all probability' pewnie 'in all likelihood' <u>pewno</u> 'in all likelihood' prawdopodobnie 'probably' przypuszczalnie 'probably' z dużym prawdopodobieństwem 'with a great deal of probability' zapewne 'presumably'
LOW	allegedly (evidential-epistemic) conceivably maybe perhaps possibly purportedly (evidential-epistemic)	być może 'perhaps' jakoby 'purportedly' (evidential-epistemic) może 'perhaps' rzekomo 'allegedly' (evidential-epistemic) wątpliwie 'doubtfully'

adjectives with a clausal complement (extraposed subject)		
<i>It is* A that type</i> <i>(Jest*) A, że type</i>		
HIGH	certain impossible <u>inconceivable</u> not possible <u>sure</u> undeniable	<u>nie do pomyslenia</u> 'inconceivable' <u>nie (jest) możliwe</u> 'not possible' <u>niemożliwe</u> 'impossible' pewne 'certain' <u>wykluczone</u> 'inconceivable'
MIDDLE	(most) likely plausible probable	prawdopodobne 'likely'
LOW	conceivable doubtful not likely possible <u>uncertain</u> unlikely	mało prawdopodobne 'unlikely' możliwe 'possible' niewykłuczone 'not impossible' wątpliwe 'doubtful'
adjectives with a clausal complement (following a copula with 1 st person subject)		
<i>I am/ We are* A that type</i> <i>Jestem* A, że type</i>		
HIGH	<u>certain</u> convinced sure	<u>pewny</u> 'sure' przekonany 'convinced' <u>przeświadczony</u> 'certain'
nouns with a clausal complement (in an existential structure)		
<i>There is** N that type</i> <i>(Jest**) N, że type</i>		
HIGH	little doubt no doubt	nie ma/ nie ulega wątpliwości 'there is no doubt'
MIDDLE	likelihood	prawdopodobieństwo 'probability'
LOW	possibility doubts	możliwość 'possibility' pojawiają się/ powstają/ nasuwają się/ pozostają wątpliwości/ podejrzenia 'there emerge/ remain doubts' można mieć wątpliwości 'one may have doubts'
nouns with a clausal complement (following verb have/ mieć with 1 st person subject)		
<i>I have/ We have* N that type</i> <i>Mam* N, że type</i>		
HIGH	little doubt no doubt	<u>pewność</u> 'certainty' <u>przekonanie</u> 'conviction' <u>przeświadczenie</u> 'conviction'
MIDDLE	feeling impression	<u>przeczcucie</u> 'feeling' wrażenie 'impression'
LOW	<u>doubts</u>	wątpliwości 'doubts'

	verbs of mental states and processes with a clausal complement (passive and impersonal structures) <i>It is* V that type; It seems* that type</i> <i>Należy*/ Można* V^{INF}, że type; Wydaje* się, że type</i>	
MIDDLE	assumed believed expected supposed thought	można/ należy przypuszczać 'one can suppose/ it is reasonable to suppose' można/ należy sądzić 'one can think/ it is reasonable to think' można/ należy się spodziewać 'one can expect/ it is reasonable to expect'
	it appears it seems	wydaje się 'it seems' zdaje się 'it seems'
LOW	speculated suspected	można domniemywać/ mniemać 'one can speculate' można podejrzewać 'one can suspect' można wątpić 'one can doubt'
	verbs of mental states and processes with a clausal complement (with 1 st person subject); it seems to me/ wydaje mi się <i>I/ We V* that type; It seems to me that</i> <i>V*^{SING/ 1PL}, że type; Wydaje mi się, że type</i>	
MIDDLE	assume believe expect imagine presume suppose think	myślę 'I think' przypuszczam 'I suppose' sądzę 'I think' spodziewam się 'I expect' uważam 'I believe'
	<u>it appears to me</u> it seems to me	wydaje mi się 'it seems to me' <u>zdaje mi się</u> 'it seems to me'
LOW	doubt guess speculate suspect	domyślam się/ mniemam 'I guess', podejrzewam 'I suspect' wątpię 'I doubt'

* in all relevant forms of the paradigm (also with modal verbs and in hypothetical mood)

** including variation of the copula

__ not attested in the corpus

In general, when compiling the list of search words, I followed the criteria used by Vold (2006: 65) in her cross-linguistic study of epistemic modality in research articles: i) the marker must explicitly indicate the truth value of a certain propositional content (to the exclusion of such verbs as *suggest*, which, if they indicate the truth value at all, then it is through implicit qualification); ii) the marker must be a lexical or a grammatical unit. Items which typically

serve as emphasisers (e.g., Eng. *of course, obviously, indeed*; Pl. *oczywiście* ‘obviously’, *naturalnie* ‘naturally’), markers of concession (e.g., Eng. *in fact*; Pl. *tak naprawdę* ‘in fact’), and items where evidential meaning would clearly predominate over epistemic (e.g., Eng. *apparently, reportedly, I infer, it is apparent*; Pl. *najwidoczniej, widocznie* ‘apparently’, *podobno* ‘reportedly’ were omitted from the list; see Section 2.2.4 for the relationship between evidentiality and epistemic modality). However, evidential-epistemic units which combine epistemic evaluation with information about the source of knowledge (e.g., Eng. *allegedly*; Pl. *jakoby* ‘purportedly’) were included in the list (see Wiemer, 2006). A more detailed discussion of epistemic markers in English and in Polish can be found in Section 2.3 of the previous chapter.

The search words in Table 3.1 are arranged according to the category and further grouped on the basis of the modal value they convey. The first set comprises modal and quasi-modal verbs and strong epistemic uses of the future tense in Polish (high epistemic value). Because the epistemic use of the future tense in Polish closely resembles English epistemic *will*, it is included with modal verbs expressing epistemic evaluation (*móc, mieć, powinien, and musieć*), which are then compared with data for the English modals. The set of (quasi-)modals is followed by modal modifiers, two sets of adjectives with clausal complements (one with extraposed subjects and the other following copulas with first-person subjects), two sets of nouns with clausal complements (one used in existential structures and the other following verb *have* with first-person subjects), and two sets of epistemic lexical verbs (one used in passive and impersonal structures and the other with first-person subjects). The last two sets comprise also verbs *seem/ appear* and *wydaje się/ zdaje się* — without the direct object and with first person pronoun in the object position.

The search results were saved as concordance lists and manually filtered to remove accidental records, direct quotations, and examples. In some cases more than one search had to be run to find different forms of one item; in others the search parameters had to be very general to avoid omissions, so the manual control stage was essential. Next, the co-text of each hit word was expanded to establish whether the item indeed functioned as an epistemic modality marker on that particular occasion. Further comparisons and discussion will be limited to these epistemic records.

With regard to typographic conventions, all examples are given in italics, additional emphasis in examples marked by underlining, and English translations of Polish words and examples enclosed in single quotes. Grammatical information, if necessary, is enclosed within an example in square brackets, with details of inflection given in superscript.

4. Markers of (un)certainty in English and Polish linguistics articles

This chapter presents the results of an analysis conducted into the linguistic markers of certainty and doubt in English and Polish linguistics articles. The complete list of markers used as search words is given in Table 3.1 in Chapter 3; in the sections that follow, reference is made only to those items which were actually attested in the analysed corpus. The chapter is divided into three main sections corresponding to three modal values: high, middle and low. Each section is further subdivided into English and Polish, and concluded with a short discussion.

4.1 High-value markers

4.1.1 English

In English linguistics articles (ELA), high-value markers comprised modal and quasi-modal verbs, a sizeable group of modal modifiers, a small set of modal adjectives with extraposed subjects or following a copula with 1st person subject, and two nouns following a copula after existential *there* or verb *have* with 1st person subject. As shown in Table 4.1, of the 2,277 occurrences of high-value epistemic markers, almost 80% were modal and quasi-modal verbs, followed far behind by modal modifiers, which comprised almost 20% of the findings. Epistemic expressions with adjectives and nouns were only sporadically found.

Table 4.1 High-value epistemic markers in ELA: An overview of categories

high-value modality marker	epistemic records	normalized to 1 mln words
modal and quasi-modal verbs	1,801 (79%)	858
modal modifiers	439 (20%)	209
adjectives	20	10
nouns	17	8
all	2,277	1,085

With regard to modal and quasi-modal verbs, about 22% of all the records were identified as epistemic. Fig. 4.1 shows that predictability *will* (see Section 2.3.1 in Chapter 2) heavily outnumbered the other (quasi-)modals and accounted for over 70% of the findings for this group of markers. This figure is compatible with Keck and Biber's (2004) results for written university registers, where *will* was by far the most common modal verb used. *Must*, the next most frequent high-value modal verb in the corpus, was found in 18% of the cases, followed by *can't* with 6% of the modal verb records. It may be interesting to note that only 19% of the uses of *must*, the strongest modal verb in this group of markers, were identified as epistemic. This result contrasts with almost 33% of epistemic uses of this modal verb reported by Collins (2009: 34) from the *International Corpus of English* and 31% reported by Coates (1983) from 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 were found to comprise 21% of *must* records in this component of the T2K-SWAL Corpus.

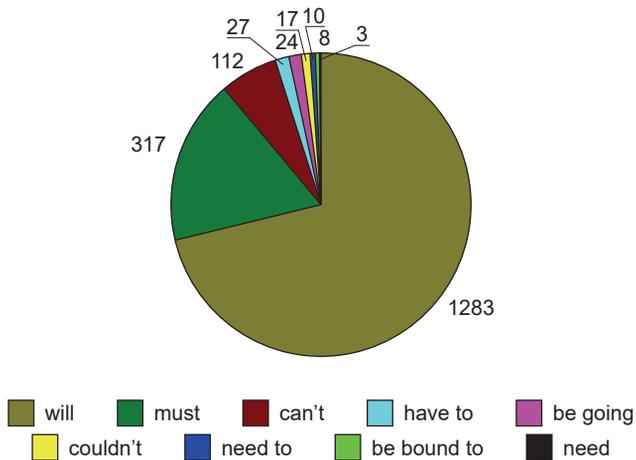


Fig. 4.1 Modal and quasi-modal verbs as high-value epistemic markers in ELA

Among the syntactic features of high-value epistemic modal verbs attested in ELA, very well marked is their concurrence with inanimate subject, which, together with occurrences in existential *there*-sentences, accounted for 85% of the cases (Fig. 4.2). Also worth noting is the association of epistemic modals with the verb *be*, noted in 34% of the records. Both observations tally with the findings obtained by Coates (1983), who reports a strong association of epistemic modal meanings with stative verbs and inanimate subjects in both spoken and written texts. In the vast majority of cases (97%), the time reference of the main predication was found to be non-past.

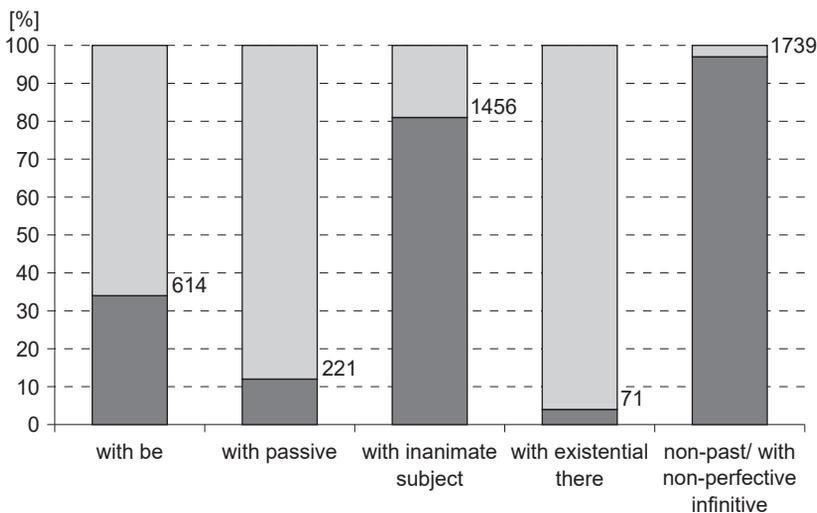


Fig. 4.2 Selected syntactic features of high-value epistemic modal verbs in ELA

Data for particular modal and quasi-modal verbs are summarised in Table 4.2. The table shows that the association with 3rd person inanimate subject was particularly strong for *can't*, *will*, *have to*, and *must* (1-3)²⁶, that is for the most frequently attested verbs. Existential *there* was found to occur more frequently with *must*, the strongest epistemic modal (4), than with the other verbs discussed in this subsection. The correlation with verb *be* was found to be strongest for *can't*, *have to*, and *be bound to*, all of which occurred with *be* in more than 60% of the records (5-7). A well-marked affinity between the modal and stative verbs was also observed for *must*, which concurred with verbs *be* and *have* in 53% of the cases. The highest proportion of the passive voice was recorded for the relatively rare *couldn't*, which was found to com-

²⁶ Numbers in parentheses refer to examples.

bine with passive infinitives in 24% of the records, that is twice as often as the average for high-value epistemic modals (see Fig. 4.2). In some cases, verbs *will*, *must*, *can't*, and *couldn't* were accompanied by emphasisers; the frequency of these amplified uses ranged from 1% for *will*, through 4-5% for *must* and *can't*, to 12% for *couldn't* (8-11).

Table 4.2 High-value epistemic markers in ELA: Modal and quasi-modal verbs

modality marker	all records	epistemic uses	
<i>be bound to</i>	10 (5)	8 (4)	
		present tense with verb <i>be</i>	8 5
<i>be going to</i>	58 (28)	24 (11)	
		<i>not be going to</i> present tense	5 23
		past tense	1
		with passive	4
		with verb <i>be</i>	10
<i>can't</i>	1,111 (529)	112 (53)	
		<i>can't</i>	5
		<i>cannot</i>	106
		with <i>nor</i>	1
		with progressive infinitive	3
		with perfective infinitive	4
		with passive	8
		with 3 rd person inanimate subject	100
		with <i>there</i> as subject	3
		with verb <i>be</i>	72
		with <i>possibly</i>	6
<i>couldn't</i>	137 (65)	17 (8)	
		<i>couldn't</i>	3
		<i>could not</i>	13
		with <i>nor</i>	1
		with progressive infinitive	1
		with perfective infinitive	7
		with passive	4
		with 3 rd person inanimate subject	9
		with verb <i>be</i>	2
		with verb <i>have</i>	2
with <i>possibly</i>	2		

<i>have to</i>	519 (247)	14 [without negation] (7)	
		<i>have got to</i>	0
		present tense	9
		past tense	5
		with progressive infinitive	1
		with perfective infinitive	1
		with passive	1
		with 3 rd person inanimate subject	10
		with <i>there</i> as subject	3
		with verb <i>be</i>	9
<i>must</i>	1,713 (816)	317 [without negation] (151)	
		with progressive infinitive	8
		with perfective infinitive	33
		with passive	39
		with 3 rd person inanimate subject	251
		with <i>there</i> as subject	31
		with verb <i>be</i>	154
		with verb <i>have</i>	14
		<i>must be due to</i>	5
		<i>must be the case</i>	5
		with emphasisers (<i>surely</i> etc.)	14
		with <i>therefore</i>	9
<i>need</i> (modal)	195 (78)	3 [+65 concurring with negation] (1)	
		with perfective infinitive	2
		with verb <i>be</i>	1
<i>need to</i> (quasi-modal)	510 (243)	10 [+1 concurring with negation] (5)	
		with passive	2
		with verb <i>be</i>	3
<i>will</i>	3,950 (1,881)	1,283 (611)	
		with negation	126
		with progressive infinitive	6
		with perfective infinitive	9
		with passive	162
		with 3 rd person inanimate subject	1,073
		with <i>there</i> as subject	34
		with verb <i>be</i>	349
		with verb <i>have</i>	83
		with verb <i>allow</i>	14
		with verb <i>depend</i>	17
		with verb <i>require</i>	14
		with emphasisers (<i>of course</i> , etc.)	16
		with downtoners (<i>perhaps</i> , etc.)	9
		with <i>always</i>	27

Figures in parentheses are normalised to 1 mln words.

- (1) *Objective uncertainty implies subjective uncertainty under the reasonable assumption that what is objectively not yet determined cannot already be known.* (LP2005-3; Main Body 1, at 14% of text)
- (2) *The register's forms being extractable from the sum total of all possible texts in such a context, a register will consist of particular register shibboleths, at whatever analytic plane of language structure.* (LC2003-7; Main Body 2; at 51% of text)
- (3) *The first step must have been that a construction with *na* + nominative, presumably of a full NP, became possible.* (LS2001-4; Main Body 1, at 50% of text)
- (4) *There must be some other reason why 'naught' resists negative concord.* (LS2002-5; Main Body 1, at 44% of text)
- (5) *This link between Q and WH cannot be selection because selection is blocked by an intervening Topic-phrase.* (L2003-2; Main Body 1, at 38% of text)
- (6) *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; Main Body 1, at 27% of text)
- (7) *In this way, it is bound to be the case that different receivers will derive different effects and respond differently.* (JP2006-5; Main Body 1, at 30% of text)

With regard to the distribution of epistemic modals and quasi-modals in different parts of the article, Table 4.3 shows that the data for Introduction and Conclusion sections on the one hand (columns 3 and 12) and the figures for Main Body occurrences falling within the first and second half of the article on the other (from now on referred to as Main Body 1 and Main Body 2; columns 15 and 16) are indeed very similar. Observable differences are in fact limited to the items that were comparatively rare in the corpus and so perhaps less informative of the general pattern of epistemic valuation in text.

The distribution of high-value epistemic modals in different portions of articles is summarised in Fig. 4.3, which shows that although on the whole Conclusion and Main Body 2 were found to contain more epistemic markers than Introduction and Main Body 1 respectively, the differences are in fact of the order of two percent at most. Worth mentioning is perhaps the fact that high-value modal verbs with emphasisers tended to occur in the second part of the articles, where 64% of such records were found (8-11). This may suggest that such strengthened forms of high-value markers are associated with portions of text where the authors discuss their own findings and take a stance on their validity.

Table 4.3 Distribution of high-value epistemic modality markers in ELA: Modal and quasi-modal verbs

1	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
<i>be bound to</i>		1						3	4	7			8	3	4	4	
<i>be going to</i>		2	1				1	3	13	18	4		24	4	14	18	
<i>can't</i>		4			2			44	56	102	4	2	112	46	56	60	
<i>couldn't</i>								8	5	13	4		17	8	5	9	
<i>have to</i>		2						12	12	24	1		27	12	12	13	
<i>must</i>	1	19	8	3	2	1	1	128	136	279	16	2	317	141	138	154	
<i>need</i>									3	3			3		3	3	
<i>need to</i>		1						4	3	7	1	1	10	4	3	4	
<i>will</i>	3	81	37	12	17	19	23	474	505	1,087	95	17	1,283	540	547	642	
all	4	110 6%	46	15	21	20	25	676	737	1,540	125 7%	22	1,801	758 42%	782 43%	907	

A – Abstract; I – Introduction; MB – Main Body; B – Background; M – Methods; R – Results; D – Discussion; C – Conclusion; X – Appendix and Acknowledgements; column 8 gives figures for papers where Results and Discussion sections were combined; columns 9 and 10 give figures for papers which lack clear division into Methods, Results and Discussion sections (<50% indicates Main Body occurrences in the first half of the papers, >50% indicates Main Body occurrences in the second half of the papers).

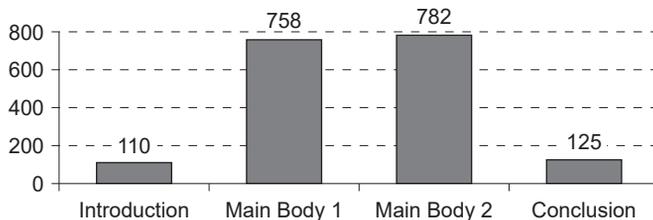


Fig. 4.3 High-value epistemic modal and quasi-modal verbs in article sections (ELA)

- (8) *In all of the above cases, the former and the latter have the same truth values, conclusively proving that the speaker cannot possibly intend to deny one and assert the other.* (JP2005-8; Main Body 2, at 85% of text)
- (9) *It must surely be a matter of some consequence if Whorf's assertions about Hopi can be shown to be incorrect (or misleading, misguided, etc.).* (LS2003-4; Main Body 2, at 80% of text)
- (10) *If implicit speech acts are so common, then when are performative verbs used? Clearly, they will be used when a speaker wants to avoid ambiguity.* (JP2005-3; Conclusion, at 95% of text)

- (11) *Speakers use this information in the construction of 'hyperliteral' spaces that couldn't possibly be grounded in the real world.* (JP2005-5; Conclusion, at 99% of text)

The second most frequent category of high-value epistemic markers, modal modifiers, was recorded four times less frequently than (quasi-)modals. Fig. 4.4 shows that of the 439 occurrences, more than half involved *certainly*, followed by *surely* (19%), *no doubt* (11%), and *by no means* (8%). None of the other items accounted for more than 4% of the findings for this group of markers. Five of the modal modifiers used as search words (*for certain*, *incontestably*, *indisputably*, *on no account*, and *unarguably*) were not attested in ELA.

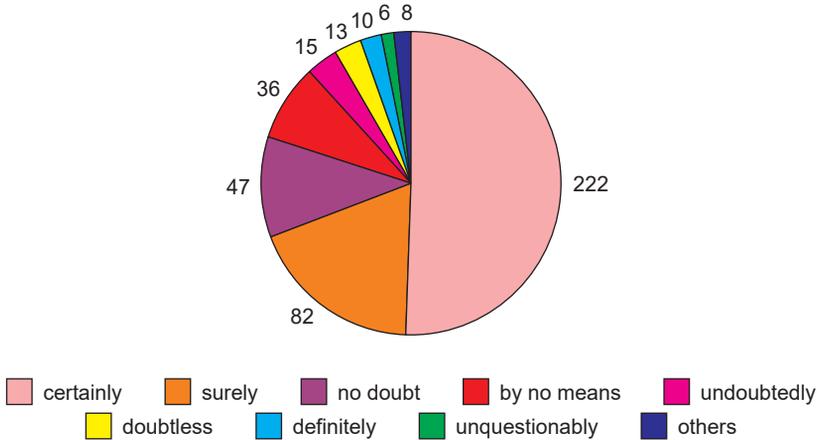


Fig. 4.4 Modal modifiers as high-value epistemic markers in ELA

More than two thirds of the recorded modal modifiers (69%) occurred at the medial position, 9% were found at the premedial position, and 20% initially (Fig. 4.5). In 42% of the cases, the main verb in the sentence was *be*. More than two thirds of the modal modifiers came from present simple tense clauses; only 8% of the findings were associated with the past tense.

The data for individual modifiers presented in Table 4.4 show that although the four most frequent markers favoured the medial position (12, 13), *certainly*, *surely* and *no doubt* were also frequently fronted (14, 15) or sometimes used in the premedial position (19, 21). As noted by Hoye (1997: 149-150, 243), the use of a modal modifier in the preauxiliary position tends to objectify modality, while moving it to the initial position may thematise the modal meaning. The initial-end position, comparatively rare in ELA, is illustrated in Example (16).

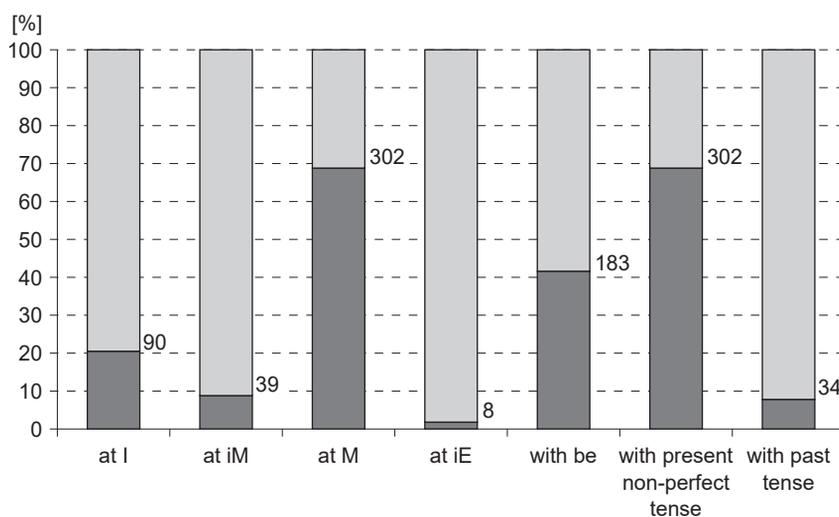


Fig. 4.5 Selected syntactic features of high-value modal modifiers in ELA

Table 4.4 High-value epistemic markers in ELA: Modal modifiers

modality marker	epistemic records	sentence position	associations
<i>by no means</i>	36 (17)	I 1	with verb <i>be</i> 23
		iM 1	with <i>should</i> 1
		M 33	with present non-perfect tense 33
		iE 1	with past tense 1
<i>certainly</i>	222 (106)	I 45	with negation 36
		iM 27	with verb <i>be</i> 76
		M 148	with verb <i>have</i> 8
		iE 2	with <i>can</i> 7
			with <i>could</i> 1
			with <i>may/ might</i> 8
			with <i>must</i> 2
			with <i>should/ ought to</i> 4
			with <i>will</i> 9
			with <i>would</i> 11
			with <i>possible</i> 5
			with <i>true</i> 6
			with present non-perfect tense 152
with past tense 17			
<i>definitely</i>	10 (5)	iM 1	with negation 3
		M 9	with verb <i>be</i> 7
			with present non-perfect tense 10

<i>doubtless</i>	13 (6)	I	6	with verb <i>be</i>	7
		iM	1	with <i>could</i>	1
		M	6	with <i>will</i>	2
				with <i>would</i>	1
				with present non-perfect tense	7
				with past tense	2
<i>for sure</i>	3 (1)	iE	3	with present non-perfect tense	2
				with past tense	1
<i>incontrovertibly</i>	1	M	1	with past tense	1
<i>indubitably</i>	1	M	1	with present non-perfect tense	1
<i>no doubt</i>	47 (22)	I	20	with negation	1
				iM	1
		M	25	with <i>can</i>	3
				iE	1
				with <i>must</i>	1
				with <i>will</i>	1
				with <i>would</i>	7
				with present non-perfect tense	21
				with past tense	9
<i>surely</i>	82 (39)	I	15	with negation	14
				iM	8
		M	59	with <i>can</i>	5
				with <i>must</i>	5
				with <i>should</i>	1
				with <i>will</i>	7
				with <i>would</i>	5
				with present non-perfect tense	58
				with past tense	1
		<i>undeniably</i>	2 (1)	M	2
<i>undoubtedly</i>	15 (7)	I	2	with verb <i>be</i>	6
				M	13
				with <i>will</i>	1
				with <i>would</i>	2
				with present non-perfect tense	10
		with past tense	2		
<i>unquestionably</i>	6 (3)	M	5	with verb <i>be</i>	4
		iE	1	with present non-perfect tense	5
<i>without doubt</i>	1	I	1	with present non-perfect tense	1

Figures in parentheses are normalised to 1 mln words.

In almost 20% of the findings, attraction was observed between the more common epistemic modifiers and modal verbs (epistemic and non-epistemic), such as *would*, *will*, *can*, *must*, *should*, and *may* (17-21). These collocations close-

ly match the modal-adverb patterns of concurrence identified by Hoyer (1997), except for *may*, which was found to form non-harmonic combinations with *certainly* (22). In such cases, as Hoyer observes, the adverb does not complement or emphasise the meaning of the modal verb, but functions as a meta-comment of the “it-is-certainly-the-case-that-there-is-such-a-possibility” type, which scopes over the modalised utterance and implies objectivity of judgement.

- (12) *Lest the source of this quotation give the wrong impression, it is important to stress that the use of sud'ba is by no means restricted to literary or poetical contexts.* (LS2003-4; Main Body 2, at 63% of text)
- (13) *This process is surely one of exegesis, or examination of an arguer's professed views to try to determine more precisely what they are.* (JP2006-3; Main Body 2, at 62% of text)
- (14) *Certainly, the function of well is distinct from that of you know, like, or I mean, which occur very infrequently in turn-initial position.* (JP2003-1; Results and Discussion, at 88% of text)
- (15) *No doubt Mill's views on the educational value of poetry changed as he got older, but it is still worth remembering the scathing attack he launched upon an essentially Arnoldian literary education.* (LC2006-3; Main Body 1, at 27% of text)
- (16) *It's extremely suggestive, for sure, and relatively neglected in cognitive science, that sometimes when we remember experiences in the distant personal past . . . we can only do so . . . in the presence of relevant external representations.* (LS2004-6, Main Body 1, at 45% of text)
- (17) *Whereas cognitive psychology would no doubt be tempted to seize upon “I just had a thought” as evidence of an internal state, in this instance it manifestly is not.* (JP2003-6; Main Body 1, at 27% of text)
- (18) *For given this understanding of how the interpreter goes about her business, her default assumption . . . will surely have to be that something is being communicated non-linguistically about the proximity, predictability or desirability of rain.* (LC2005-7; Main Body 2, at 89% of text)
- (19) *But if the idea of the sentence margins is taken literally, as it surely must be if the model is to receive empirical support, then (4)c also fails to apply to verb-initial or verb-final languages.* (L2006-6; Main Body 2, at 57% of text)
- (20) *Even if we restrict “polysemy accounts” as she does to those developed within Cognitive Linguistics, “mental space” theory can certainly provide an account of metarepresentation.* (LS2003-8; Conclusion, at 96% of text)
- (21) *Thus these phenomena certainly should not be considered peripheral since they have an important bearing on theories of clause structure in general.* (L2001-2; Conclusion, at 99% of text)

- (22) *Appeal to constructions, then, may certainly reduce the need to postulate extensive polysemy at the level of words.* (LS2003-7; Main Body 2, at 84% of text)

Much like in the case of modal and quasi-modal verbs, there was little variation in the distribution of modal modifiers in article sections. As shown in Table 4.5, among the more common items, *by no means* tended to occur more frequently in Introduction than in Conclusion (23), and both *surely* and *undoubtedly* were more frequent in Main Body 2 than in Main Body 1 (24), but the pattern for *certainly*, the most frequent item, and *no doubt* was virtually even.

Table 4.5 Distribution of high-value epistemic modality markers in ELA: Modal modifiers

	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B		M		R and D		<50%	>50%							
			4	5	6	7	8										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>by no means</i>		8						13	14	27	1		36	13	14	15	
<i>certainly</i>		19	7	2	6	4	12	74	75	180	23		222	89	91	114	
<i>definitely</i>				1			1	4	1	7	3		10	5	2	5	
<i>doubtless</i>		2						6	3	9	2		13	6	3	5	
<i>for sure</i>								2	1	3			3	2	1	1	
<i>incontrovertibly</i>								1		1			1	1	0	0	
<i>indubitably</i>									1	1			1	0	1	1	
<i>no doubt</i>		7	1		2	1	4	12	14	34	6		47	15	19	25	
<i>surely</i>		6	2			1	1	26	42	72	4		82	28	44	48	
<i>undeniably</i>		1						1		1			2	1	0	0	
<i>undoubtedly</i>		1	1				1	2	7	11	2	1	15	3	8	10	
<i>unquestionably</i>								2	4	6			6	2	4	4	
<i>without doubt</i>	1												1	0	0	0	
all	1	44 10%	11	3	8	6	19	143	162	352	41	1	439	165 38%	187 43%	228	

- (23) *In fact, I will argue that metalinguistic update is by no means pathological or exceptional, but part of the normal update potential of most vague predicates.* (LP2002-1; Introduction, at 4% of text)
- (24) *They undoubtedly have the illocution of an expressive.* (LS2006-1; Main Body 2, at 80% of text)

Figure 4.6 summarises the distribution of modal modifiers in the four segments of text. As can be seen from the diagram, the difference between Introduction and Conclusion sections is negligible; the difference between Main Body 1 and Main Body 2 is more noticeable but still small and reaches 5% in favour of the latter. The distribution was also calculated for initial sentence position of modifiers to see whether the possible thematisation of modal meanings was reflected in their placement in the text. No clear association was observed between fronting and text segment. Figures for Introduction and Conclusion sections were found to be similar, with initial position slightly more frequent in Introduction (Fig. 4.7); the difference between Main Body 1 and Main Body 2 was also small, with a slight preference for the latter. In terms of their contribution to individual text segments, fronted modifiers had the biggest share in Introduction (25% of the findings for this section).

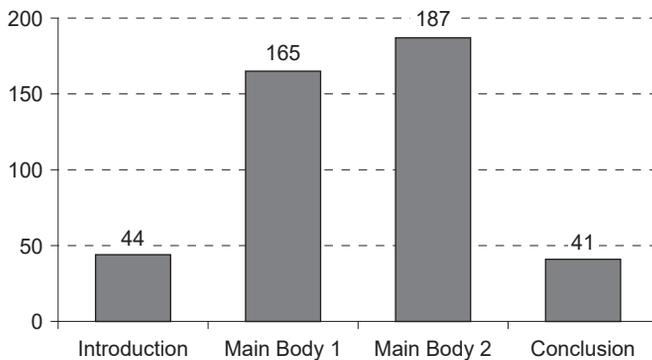


Fig. 4.6 High-value modal modifiers in article sections (ELA)

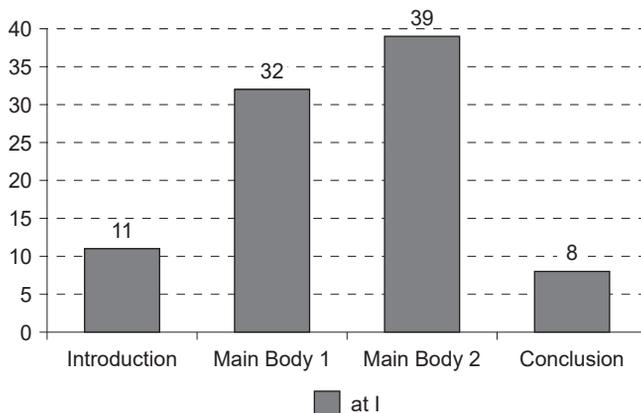


Fig. 4.7 High-value modal modifiers at I in article sections (ELA)

Phrases with epistemic adjectives and nouns proved to be very rare in ELA, together accounting for less than 2% of high-value markers. As can be seen in Fig. 4.8 and 4.9, there was no clear preference for objective or subjective orientation in the case of adjectives (in fact the proportion was even, one use of *certain* being subjective, as in 25), but epistemic nouns received objective orientation more frequently, in 82% of the (few) records (26). With regard to *that*-clauses that follow the modal markers, of the 37 examples 20 were in the present tense, and only 4 had a past simple verb form.

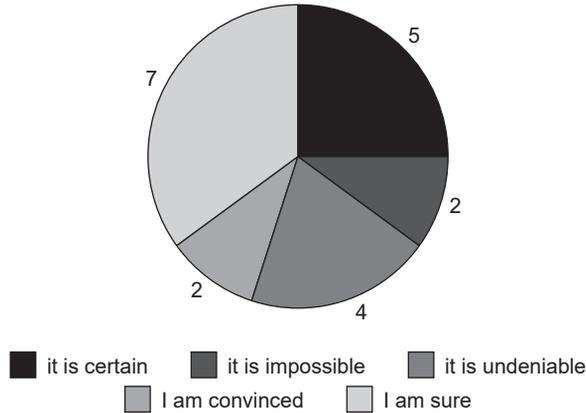


Fig. 4.8 Adjectives as high-value epistemic markers in ELA

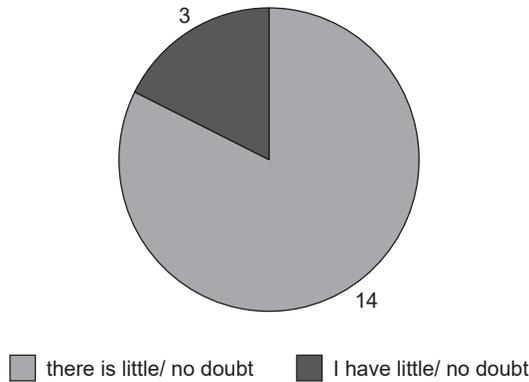


Fig. 4.9 Nouns as high-value epistemic markers in ELA

(25) *But it seems to me certain that without the concept of indexical order, in particular, there just can be no scientifically useful understanding of how both a micro-sociological order and a macro-sociological order are “articulated.”* (LC2003-7; Conclusion, at 99% of text)

- (26) *There is no doubt that the apodosis constitutes the main clause and expresses the principal illocutionary force.* (LS2006-1, Main Body 2, at 62% of text)

More specific data concerning the use of particular items in the corpus studied are presented in Table 4.6. Worth noting are perhaps cases where a high-value adjective or noun occurred within the scope of an element of a lower epistemic status, as in (27) and (28), or with a downtoner (29). Such combinations, which reduce the strength of the modal marker, were observed in 22% of the adjective and noun records.

Table 4.6 High-value epistemic markers in ELA: Adjectives and nouns

modality marker	epistemic records	associations	
<i>certain</i> (<i>It is A that</i>)	5 (2)	with <i>it is</i>	2
		with <i>it seems</i>	3
<i>impossible</i> (<i>It is A that</i>)	2 (1)	with <i>it is</i>	1
		with <i>it seems</i>	1
<i>undeniable</i> (<i>It is A that</i>)	4 (2)	with <i>it is</i>	3
		with <i>it seems</i>	1
<i>convinced</i> (<i>I am/ We are A that</i>)	2 (1)	with <i>I am</i>	2
		with <i>fairly well</i>	1
<i>sure</i> (<i>I am/ We are A that</i>)	7 (3)	with <i>I am</i>	3
		with <i>we can be</i>	4
		with <i>pretty</i>	1
<i>little doubt</i> (<i>There is N that</i>)	7 (3)	with <i>there is</i>	5
		with <i>there can be</i>	1
		with <i>there seems</i>	1
<i>no doubt</i> (<i>There is N that</i>)	7 (4)	with <i>there is</i>	6
		with <i>there can surely be</i>	1
<i>little doubt</i> (<i>I have/ We have N that</i>)	1	with <i>I have</i>	1
<i>no doubt</i> (<i>I have/ We have N that</i>)	2	with <i>I have</i>	1
		with <i>we have</i>	1

Figures in parentheses are normalised to 1 mln words.

- (27) *It seems undeniable that the semantic value of [NP Twain] as [NP Twain] occurs in unembedded [S1 . . .] is Twain.* (LP2002-2; Main Body 1, at 24% of text)
- (28) *There seems little doubt that Hi and Thanks fulfil the criteria of idiomaticity, brevity, and speaker's emotive reaction.* (LS2006-1; Main Body 2, at 86% of text)

(29) *I am fairly well convinced that Cocteau was on to something, whether or not he had something definite in mind.* (LS2004-3; Main Body 2, at 79% of text)

In terms of the distribution in the article sections, the data are too scant to reveal any recognisable pattern or regularity. Table 4.7 presents the results of the analysis for individual items. The total figures for adjectives and nouns may indicate a slight preference for Main Body 2 (confirmed also by partial results for adjectives and nouns), but generally the picture is very inconclusive. It may be interesting to note, though, that the records with downtoners (*fairly well, pretty*) and copula *seem* tended to cluster in the last quarter of the article, especially in the Main Body 2 at 75% of the text or later.

Table 4.7 Distribution of high-value epistemic modality markers in ELA: Adjectives and nouns

1	I	MB							Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
		B	M	R and D		<50%	>50%							
				R	D									
				2	3			4						
<i>certain</i> (It is A that)							2	2	4	1	5	2	2	3
<i>impossible</i> (It is A that)								2	2		2	0	2	2
<i>undeniable</i> (It is A that)	1						1	1	2	1	4	1	1	2
<i>convinced</i> (I am A that)								2	2		2	0	2	2
<i>sure</i> (I am A that)							3	3	6	1	7	3	3	4
all adjectives	1						6	10	16	3	20	6	10	13
<i>little doubt</i> (there is N that)	2	1					2	2	5		7	3	2	2
<i>no doubt</i> (there is N that)	1					1	1	3	5	1	7	1	4	5
<i>little doubt</i> (I have N that)							1		1		1	1	0	0
<i>no doubt</i> (I have N that)								1	1	1	2	0	1	2
all nouns	3	1				1	4	6	12	2	17	5	7	9
Total	4	1				1	10	16	28	5	37	11	17	22

If we look at the distribution of objective and subjective orientation in article sections, the former seems to be preferred in Introduction and the latter in Conclusion (Fig. 4.10), but in view of the very few examples actually attested in the corpus, it would be too rash to speak of tendencies here.

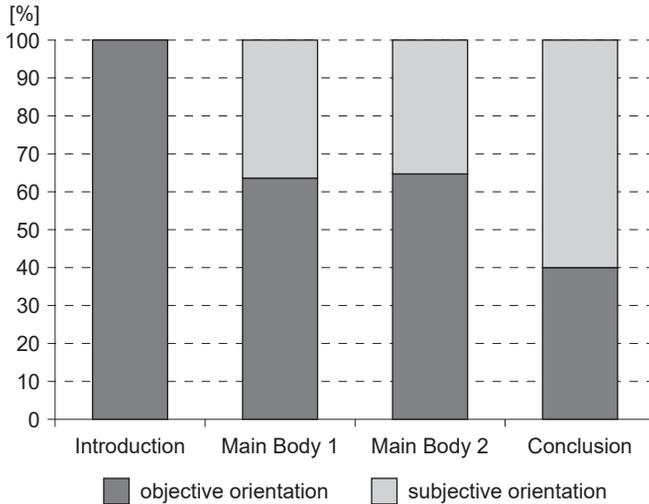


Fig. 4.10 Objective and subjective orientation in article sections: High-value modal adjectives and nouns (ELA)

4.1.2 Polish

In Polish linguistics articles (PLA), the group of high-value modifiers included two modal verbs, future forms of verb *być* ‘be’ and the complex future tense (with *być* as an auxiliary verb), a modest set of modal modifiers, two adjectives followed by finite complement clauses — one with an extraposed subject and the other following a copula with 1st person subject — and one noun with a clausal complement. As can be seen in Table 4.8, high modal values were most often conveyed through modal verbs and future forms,²⁷ which together accounted for 50% of the findings. Frequent were also modal modifiers, making up 44% of the records. Expressions with nouns were rare (5%) and expressions with epistemic adjectives — almost absent from the corpus.

²⁷ Here analysed together because of the resemblance between the epistemic use of English modal verb *will* (predictability *will*) and Polish complex future forms used to convey certainty (see Section 2.3.2 in the previous chapter).

Table 4.8 High-value epistemic markers in PLA: An overview of categories

high-value modality marker	epistemic records	normalized to 1 mln words
modal verbs and future forms	166 (50%)	196
modal modifiers	149 (44%)	175
adjectives	2	2
nouns	18	21
all	335	395

About 26% of all the modal verb and future tense records were classified as epistemic. As shown in Fig. 4.11, the most frequent exponent of modal meaning in this group of markers was the future tense, used in 60% of the cases, followed by *musieć* 'must' with 24% of the findings, and *nie móc* 'can't', with the remaining 16%.

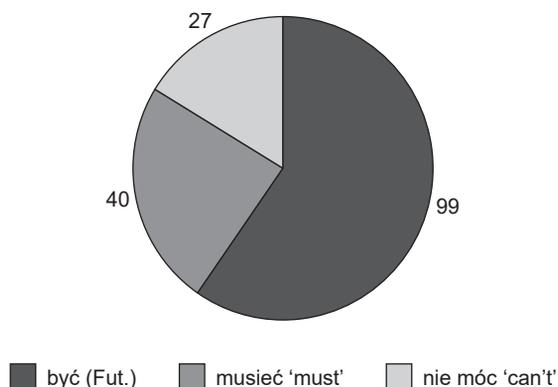


Fig. 4.11 Modal verbs and forms of the future as high-value epistemic markers in PLA

With regard to the syntactic features of this category of markers, some of which are presented in Fig. 4.12, perhaps what is most noticeable is the association with inanimate subject, which, together with occurrences in subjectless structures, accounted for 90% of the findings. Also frequent was the concurrence of epistemic markers with verb *być* 'be', observed in 36% of the records. Both figures are compatible with Ligara's (1997) set of epistemic parameters for Polish modal verbs, which predict epistemic meaning in the presence of 3rd person inanimate subject and a stative verb. Non-past indicative uses accounted for 79% of the findings.

Table 4.9 summarises data for individual verbs. The association with 3rd person inanimate subject, well-marked for all the verbs considered, was particularly strong in the case of *musieć* 'must', the strongest high-value modal

verb, as shown by 98% of the records (30). Worth noting are also hypothetical forms of *musieć*, attested in 17% of the data for this verb (31), where the epistemic force of the modal is qualified. Example (32) illustrates the hypothetical use of *nie móc* ‘can’t’. *Być* ‘be’ as the main verb was most frequently recorded in the epistemic uses of the future tense (33), where it accounted for 41% of the findings, but it was also found to co-occur readily with *nie móc*, as shown by the 33% of the data for this verb (34). There is also a well-marked association between *musieć* and past tense: although past forms constitute only 15% of the records for this category of markers, they account for as much as 45% of *musieć* tokens (35).

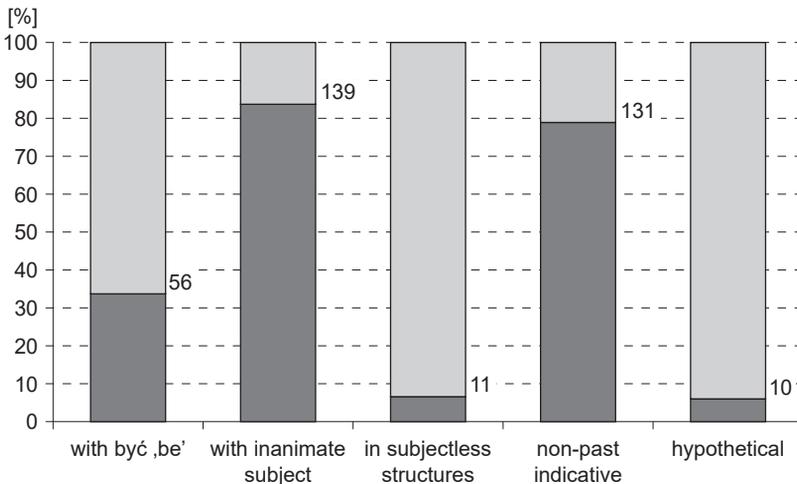


Fig. 4.12 Selected syntactic features of high-value epistemic modal verbs and future forms in PLA

Table 4.9 High-value epistemic markers in PLA: Modal verbs and forms of the future

modality marker	all records	epistemic uses	
<i>być</i> (Fut.)	296 (348)	99 (116)	
		<i>będziemy</i> (1 pl)	3
		<i>będzie</i> (3 sing)	66
		<i>będą</i> (3 pl)	30
		as main verb 'be'	41
		as auxiliary	58
		with negation	8
		with passive	8
		with inanimate subject	79
subjectless structures	8		

<i>musieć</i> 'must'	283 (333)	40 [without negation] (47)	
		3 sing (Pr, Past, Hyp.)	31
		3 pl (Pr, Past, Hyp.)	9
		present tense	15
		past tense	18
		hypothetical mood	7
		with passive	3
		with verb <i>być</i> 'be'	6 (+3 related)
		with <i>dokonać się</i> 'take place'	3 (+3 related)
		with downtoners (<i>chyba</i> 'probably' etc)	3
with inanimate subject	39		
<i>nie móc</i> 'can't'	129 (152)	27 (32)	
		3 sing (Pr, Past, Hyp.)	20
		3 pl (Pr, Past, Hyp.)	7
		present tense	17
		past tense	7
		hypothetical mood	3
		with passive	1
		with negated infinitive	5
		with verb <i>być</i> 'be'	9
		with inanimate subject	21
subjectless structures	3		

Figures in parentheses are normalised to 1 mln words.

- (30) *Informacja o tym, jaki przypadek inherentny przypisywany jest przez dany czasownik bądź przyimek, musi [MUSIEĆ^{3SING PRES}] być zawarta w słowniku mentalnym.* (PORJ2003-1; Main Body 1, at 39% of text) 'Information about what inherent case is assigned by a particular verb or preposition must be included in the mental lexicon.'
- (31) *Jednak tego rodzaju zmianom musiałyby [MUSIEĆ^{3PL NON-MASC-PERSONAL HYP}] towarzyszyć [ACTIVE INF] trudności ['difficulties' subject] z identyfikacją spółgłosek l i ł.* (ABAS2005-3; Main Body 2, at 74% of text) 'However, changes of this kind would have to be accompanied by difficulties in discriminating between consonants l and ł.'
- (32) *Gdyby nawet w prasłowiańskim istniał temat *tos, to s przed końcówkami zaczynającymi się od spółgłoski (g, m) nie mogłoby [NIE MÓC^{3SING NEUT HYP}] zaniknąć.* (SFPS2005-8; Main Body 1, at 36% of text) 'Even if the stem *tos had existed in Proto-Slavic, s before endings beginning with the consonant (g, m) could not have disappeared'
- (33) *Najlepszymi kontekstami do tego, by stwierdzić ewentualną synonimię wysoce i wysoko, będą [BYĆ^{3PL FUT}] te, w których mogą pojawić się oba przysłówki.* (PORJ2005-8; Main Body 2, at 69% of text) 'The best contexts to

confirm the possible synonymy of *wysoce* and *wysoko* will be those in which both adverbs can appear:

- (34) *Podobnie teksty teologiczne . . . nie mogą [NIE MÓC^{3PL.PRES}] być [‘be’^{INF}] spekulacjami czysto intelektualnymi: ich tworzenie . . . to w istocie kontemplacja rzeczywistości opisywanej.* (EL2001-5; Main Body 1, at 43% of text) ‘Similarly, theological texts . . . cannot be purely intellectual speculations; their creation . . . is in fact contemplation of the described reality’
- (35) *Liczne skupisko nazw terenowych koło Szczecina . . . musiało [MUSIEĆ^{3SING NEUT PAST}] pierwotnie mieć związek z wcześniejszą nazwą miejscową lub rzeczną.* (ON2003-4; Main Body 1, at 47% of text) ‘The rich cluster of topographic names near Szczecin . . . must initially have been related to an earlier toponym or a river name’

With regard to the distribution of modal verbs and future forms across the article sections, Fig. 4.13 demonstrates that the number of Main Body occurrences falling within the first half of the texts was found to be nearly the same as the number of Main Body records coming from the second half of the articles (Main Body 1 and Main Body 2 respectively). As shown in Table 4.10, this tendency was stable for all the markers in this category. When it comes to Introduction and Conclusion sections, the data are obviously too few to give any clear picture, but on the whole more high-value markers were found in the former (as in 36 and 37). Still, partial results turned out to be less consistent, with a reversed situation observed for *nie móc* ‘can’t’ (38).

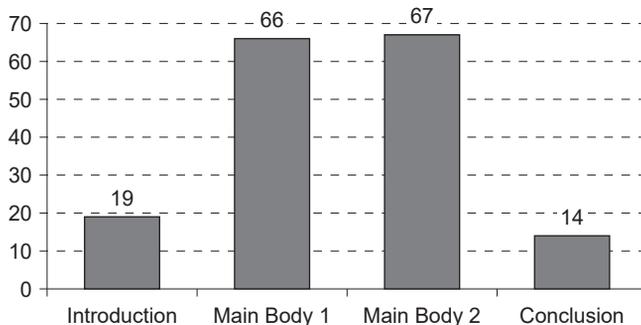


Fig. 4.13 High-value epistemic modal verbs and forms of the future in article sections (PLA)

Table 4.10 Distribution of high-value epistemic modality markers in PLA: Modal verbs and forms of the future

1	I		MB							Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
			B	M	R and D		<50%	>50%							
					R	D									
2	3	4	5	6	7	8	9	10	11	12	13	14	15		
<i>być</i> (Fut.)	12	2		3	2	2	34	35	78	9	99	39	39	48	
<i>musieć</i> ‘must’	5				1	2	16	15	34	1	40	16	18	19	
<i>nie móc</i> ‘can’t’	2						11	10	21	4	27	11	10	15	
all	19 11%	2		3	3	4	61	60	133	14 8%	166	66 40%	67 40%	81	

- (36) *Przy takiej regulacji właściwymi czasownikami ruchu nie będą* [BYĆ^{3PL FUT}] *czasowniki spacerować, tańczyć, błądzić, którym brak znaczenia kierunku.* (PORJ2005-12; Introduction, at 5% of text) ‘Under this principle, proper verbs of movement will not include verbs walk, dance, and wander, which lack the sense of direction’
- (37) *Należy więc przyjąć, że wieś musiała* [MUSIEĆ^{3SING FEM PAST}] *powstać najprawdopodobniej około połowy XIX w.* (ON2002-7; Introduction, at 11% of text) ‘One should then assume that the village must have originated most probably around the middle of the 19th century’
- (38) *Z drugiej jednak strony . . . interpretacja germańska tak czy inaczej nie mogłaby* [NIE MÓC^{3SING FEM HYP}] *uchodzić za maksymalnie prawdopodobną.* (ON2003-5; Conclusion, at 92% of text) ‘On the other hand . . . the Germanic interpretation could not pass as the maximally probable one anyway’

What is perhaps worth a comment is the distribution of hypothetical forms of *musieć* and *nie móc* in the article sections. Of the 10 examples attested in the corpus, eight appeared in Main Body 2 or in Conclusion, and seven were found at 70% of the text or further. Few as the data are, they may suggest that the qualified forms of strong modal forms find better application in those parts of the article where the authors draw conclusions from their own research rather than rely on what has already been accepted as facts by the community of experts.

The second most frequent category of high-value modality markers in PLA were modal modifiers, which accounted for 44% of the records. As shown in Fig. 4.14, only five types were actually attested in the corpus, of which the most frequent were *niewątpliwie* ‘undoubtedly’ and *z pewnością* ‘with certainty’, with 37% and 34% of the results respectively, followed by *bez wątpienia*

'without doubt' (18%), *na pewno* 'for sure' (10%), and one epistemic record of *w żadnym razie* 'on no account'.

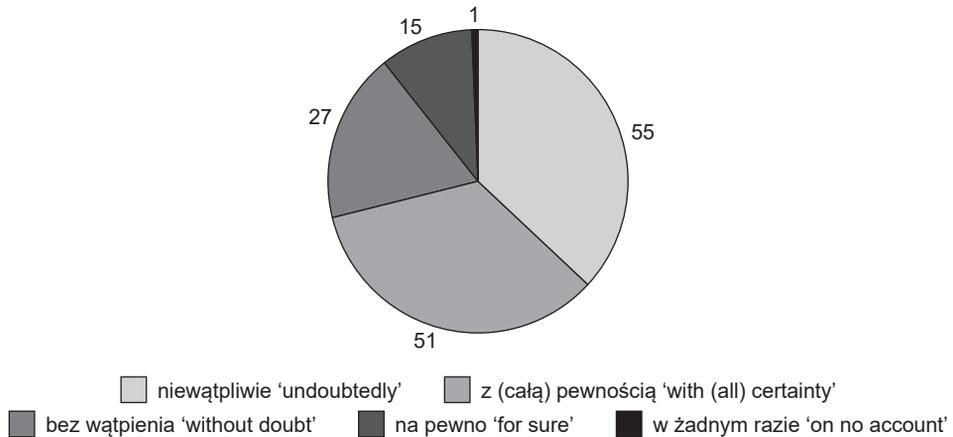


Fig. 4.14 Modal modifiers as high-value epistemic markers in PLA

Fig. 4.15 shows that in 38% of the cases the modal modifier was used in the thematic position, as in (39) and (40) below. Well marked was also the association with verb *być* 'be', observed in nearly 40% of the records. Almost three quarters of the modifiers occurred in present tense clauses; 17% were found in clauses where the main verb was in the past tense.

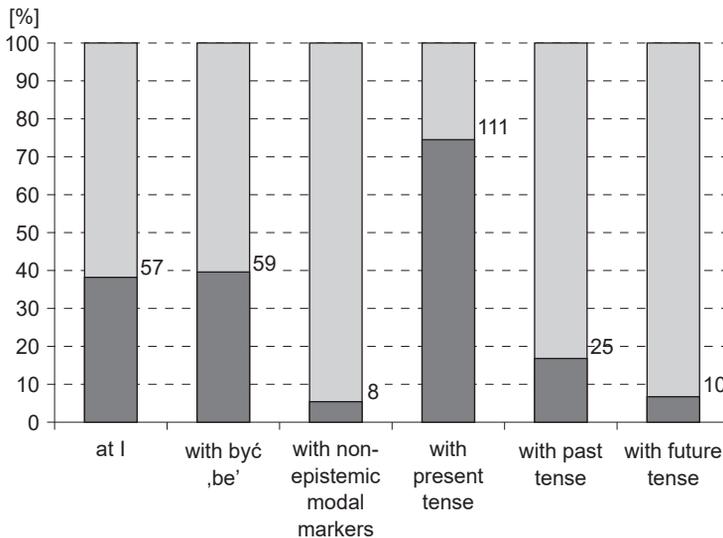


Fig. 4.15 Selected syntactic features of high-value modal modifiers in PLA

- (39) *Bez wątpienia zasadne jest [BYĆ ‘be’^{3SING PRES}] również mówienie o konstruowaniu schematu składających się na ów dyskurs wypowiedzi.* (BPTJ 2002-6; Conclusion, at 88% of text) ‘Without doubt it is also justified to talk about the construction of a schema of utterances which constitute this discourse’
- (40) *Niewątpliwie jednak negatywne cechy w obrazie “typowego” Rosjanina dominują.* (EL2002-3; Main Body 1, at 25% of text) ‘Undoubtedly still negative features in the picture of a “typical” Russian man predominate.’

Table 4.11 presents the data for individual modal items. For the most frequent epistemic modifiers, there were instances of co-occurrence with non-epistemic modality markers, as in (41) and (42), fairly frequent in the case of *z pewnością* ‘with certainty’. In one case a high-value modal modifier was recorded with an approximator (43).

Table 4.11 High-value epistemic markers in PLA: Modal modifiers

modality marker	epistemic records	sentence position	associations	
<i>bez wątpienia</i> ‘without doubt’	27 (32)	I 10	with negation with verb <i>być</i> ‘be’ with verb <i>mieć</i> ‘have’ with verb <i>wystąpić</i> ‘occur’	1 12 3 3
<i>na pewno</i> ‘for sure’	15 (18)	I 6	with negation with verb <i>być</i> ‘be’ with <i>niemal</i> ‘nearly’	4 10 1
<i>niewątpliwie</i> ‘undoubtedly’	55 (65)	I 21 E 1	with verb <i>być</i> ‘be’ with verb <i>mieć</i> ‘have’ with verb <i>stanowić</i> ‘constitute’ with verb <i>istnieć</i> ‘exist’ with non-inflectional verb <i>można</i> ‘one can’	18 6 3 1 1
<i>w żadnym razie</i> ‘on no account’	1 (1)	I 1	with negation with verb <i>be</i>	1 1
<i>z całą pewnością</i> ‘with (all) certainty’	51 (60)	I 19	<i>z całą pewnością</i> with negation with verb <i>być</i> ‘be’ with verb <i>mieć</i> ‘have’ with non-epistemic modal verbs: <i>mieć</i> ‘is to’, <i>móc</i> ‘can’, <i>musieć</i> ‘must’, <i>należy</i> ‘one should’ with non-inflectional verb <i>można</i> ‘one can’ with hypothetical mood	5 10 18 3 7 1 3

Figures in parentheses are normalised to 1 mln words.

- (41) *Za mniej prestiżowe należy z pewnością uznać języki słowiańskie, wśród których najliczniejszą populację reprezentuje polski.* (PORJ2005-15; Main Body 1, at 20% of text) ‘As less prestigious one should with certainty consider Slavic languages, among which the one with the largest population of speakers is Polish’
- (42) *Z pewnością można twierdzić, iż naszą wiedzę dotyczącą kształtu danego obiektu formuje wyobrażenie wizualne (lub cała seria wyobrażeń presuponujących różną orientację i stopień uszczegółowienia).* (SFPS2004-8; Introduction, at 23% of text) ‘With certainty one can claim that our knowledge of the shape of a given object is formed by the visual image (or a whole series of images which presuppose different orientation and degree of elaboration.’
- (43) *Jeśli w przetwarzanym tekście znajdziemy słowo brać, to niemal na pewno jest to forma bezokolicznikowa leksemu BRAC.* (BPTJ2002-12; Conclusion, at 88% of text) ‘If in the processed text we find the word brać, it is nearly for sure the infinitive form of the lexeme BRAC’
- (44) *Na pewno jest znanych w Polsce jeszcze więcej oryginalnych nazw węgierskich potraw, tych nazw nie zawierają jednak słowniki.* (PORJ2006-7; Main Body 2, at 79% of text) ‘For sure a greater number of original names of Hungarian dishes are known in Poland, still those names are not included in the dictionaries’
- (45) *Zasadniczą funkcją przedstawionych tu metafor, zwrotów porównawczych i frazeologicznych było niewątpliwie wartościowanie.* (JK2003-13; Main Body 2, at 78% of text) ‘The major function of the metaphors, comparisons and idiomatic phrases presented here was undoubtedly valuation’

As far as the distribution in different parts of the article is concerned, Fig. 4.16 demonstrates that there was no difference in the number of modal modifiers used in the Introduction and Conclusion sections. However, the figures for Main Body 1 and Main Body 2 show a difference of 12% in favour of the latter (44 and 45). As shown in Table 4.12, this tendency is stable in all the high-value epistemic modifiers found in the corpus, except for the single instance of *w żadnym razie* ‘on no account’. No relation was discovered between the initial sentence position of the modifiers and the article section in which they appeared.

Epistemic adjectival constructions were very rare in the Polish part of the corpus, with only two examples found: one with objective and the other with subjective orientation (46 and 47 respectively). With regard to nouns, there was only one structure in use, of objective orientation, but this turned out to be relatively frequent, accounting for more than 5% of the high-value epistemic markers attested (Table. 4.13).

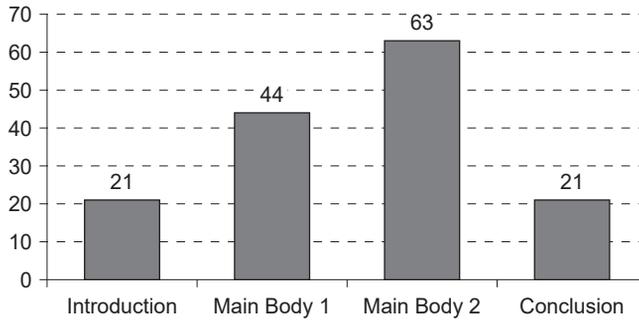


Fig. 4.16 High-value modal modifiers in article sections (PLA)

Table 4.12 Distribution of high-value epistemic modality markers in PLA: Modal modifiers

1	I	MB							Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
		B	M	R and D		<50%	>50%							
				R	D									
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<i>bez wątpienia</i> 'without doubt'	5			1			6	12	19	3	27	7	12	15
<i>na pewno</i> 'for sure'	2					1	4	6	11	2	15	4	7	9
<i>niewątpliwie</i> 'undoubtedly'	6		1			2	17	19	39	10	55	18	21	31
<i>w żadnym razie</i> 'on no account'							1		1		1	1		
<i>z pewnością</i> 'with certainty'	8	1	1		1	4	12	18	37	6	51	14	23	29
all	21	1	2	1	1	7	40	55	107	21	149	44	63	84

Table 4.13 High-value epistemic markers in PLA: Adjectives and nouns

modality marker	epistemic records
<i>pewne</i> [PEWNY ^{NEUT}] 'certain' <i>Jest A, że</i> 'It is A that'	1 (1)
<i>przekonany</i> 'convinced' <i>Jestem A, że</i> 'I am A that'	1 (1)
<i>wątpiwości</i> [WĄTPLIWOŚĆ ^{GEN}] 'doubt' <i>Nie ulega N, że</i> 'there is no N that'	18 (21)

Figures in parentheses are normalised to 1 mln words.

The distribution of epistemic adjectives and nouns in the articles is presented in Table 4.14. *Nie ulega wątpiwości, że* 'there is no doubt that', illustrat-

ed in (48) and (49) below, was more frequently recorded in Main Body 1 than in Main Body 2, but — as with adjectives and nouns in the English part of the corpus — the Polish data are too scant to be informative.

Table 4.14 Distribution of high-value epistemic modality markers in PLA: Adjectives and nouns

1	MB								Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
	I		R and D											
	B	M	R	D	<50%	>50%								
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<i>pewne</i> 'certain' (<i>Jest A, że</i> 'It is A that')						1		1		1	1			
<i>przekonany</i> 'convinced' (<i>Jestem A, że</i> 'I am A that')									1	1			1	
<i>wątpliwości</i> 'doubt' (<i>Nie ulega N, że</i> 'there is no N that')	2					9	4	13	3	18	9	4	7	
Total	2					10	4	14	4	20	10	4	8	

- (46) *Pewne natomiast jest to, że odgórne próby czynione przez nieliczną proporcjonalnie grupę wyznawczyń feminizmu będą sobie z trudem torować drogę, przewyciężając przywiązanie do tradycji.* (PORJ2006-11, Main Body 1; at 48% of text) 'however, it is certain that the top-down attempts by a relatively small group of female feminism followers will clear a way for themselves with difficulty, overcoming the attachment to tradition'
- (47) *Przekonany jestem, że dla sprawności (ale i dla jakości) dyskursu publicznego jest sprawą społecznie doniosłą samouświadamianie sobie pełni tych znaczeń, konotacji, ocen i odniesień.* (EL2002-1; Conclusion, at 91% of text) 'I am convinced that for the efficiency (and for the quality) of the public discourse it is a matter of social importance to become aware of the full extent of those meanings, connotations, valuations and references'
- (48) *Nie ulega więc wątpliwości, że relacja ta powinna być rozpatrywana w wielu kontekstach.* (JK2003-6, Main Body 1, at 32% of text) 'There is no doubt then that this relation should be analysed in many contexts'
- (49) *Nie ulega wątpliwości, że takiej gamy wad i przywar nie znajdziemy w przysłowiach dotyczących mężczyzn.* (SFPS2004-4; Main Body 1, at 25% of text) 'There is no doubt that one will not find such a wide range of flaws and faults in proverbs which refer to men.'

4.1.3 Discussion

There is an important caveat to the results presented in the previous sections which should be made before any appraisal of the findings is attempted. The two corpora of linguistics articles which served as the basis for this analysis, while equal in the number of texts, differ considerably in size. In terms of the number of running words, the English material outnumbers the Polish batch of texts by almost 2.5 to 1. A difference of this extent cannot be accounted for solely by the distinction between analytic and inflecting languages; rather it points to the fact that Polish linguistics articles tend to be markedly shorter than English articles published internationally — perhaps partly as a result of word limits imposed by Polish publishers. The discussion which follows will rely on data normalised to one million words, but figures for distribution of items across article sections are not insensitive to the length of texts. Therefore the results should be interpreted as signals of possible tendencies rather than a conclusive picture of the situation.

A cursory comparison of English and Polish sets of texts in terms of high-value epistemic meanings reveals that high-value modality markers occur much more frequently in English linguistics articles, the difference being of the order of 2.7 to 1. With regard to the categories of epistemic markers used to express high levels of commitment or certainty, in both corpora modal verbs were the most common markers (with predictability *will* in English and corresponding forms of the future tense in Polish), and the second most frequent category were modal modifiers (Fig. 4.17). Constructions with epistemic adjectives and nouns played a marginal role in both corpora under analysis. However, if English modal verbs accounted for nearly 80% of the high-value markers, their Polish counterparts comprised only half of the results, so that the proportion between the modal verbs and modal modifiers in Polish was more even than in the case of English. Generally, the greatest disproportion between the English and Polish results consisted in the use of modal verbs, the figures for modal modifiers and phrases with adjectives and nouns being comparable (Fig. 4.18).

In terms of realisation of modal meanings, in both corpora there was a marked preference for implicit epistemic evaluation (98% and 94% in English and Polish texts respectively), as expected from the high frequency of modal verbs and modifiers in the two sets of articles. With regard to orientation, subjective expressions prevailed in ELA, accounting for almost 80% of the findings, while in PLA, where the ratio of modal modifiers was higher and where

the majority of expressions with adjectives and nouns were used objectively, the proportion was even.

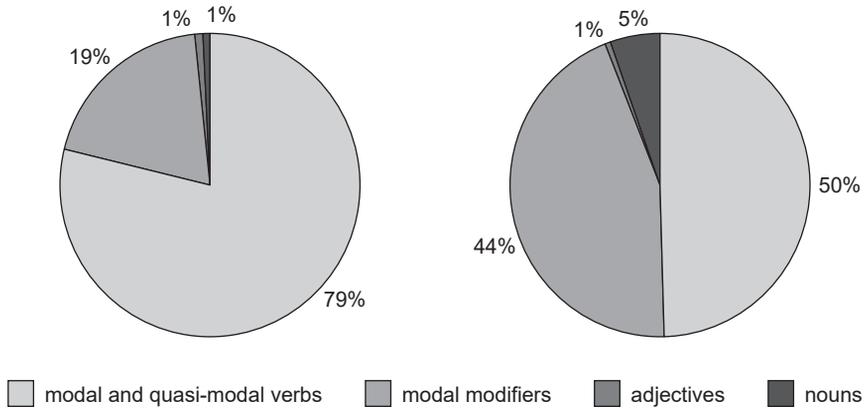


Fig. 4.17 Categories of high-value epistemic markers in ELA (left) and PLA (right)

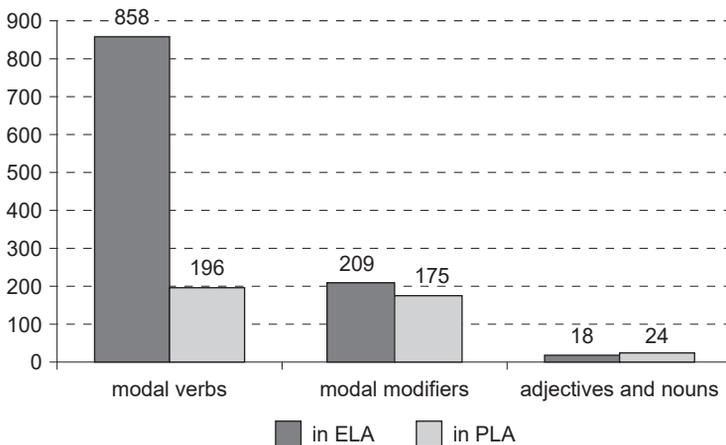


Fig. 4.18 High-value modal verbs, modal modifiers, and modal adjectives and nouns in ELA and PLA (Figures normalised to 1 mln words.)

The dynamics of distribution of high-value modality markers in the structure of the article appears to be similar in English and Polish sets of texts. English and Polish authors were found to use high-value markers with a similar frequency in the Introduction and Conclusion sections. As shown in Fig. 4.19, similar were also the results for Main Body 1 and Main Body 2, although there was a slight bias towards the latter, somewhat more noticeable in the case of Polish.

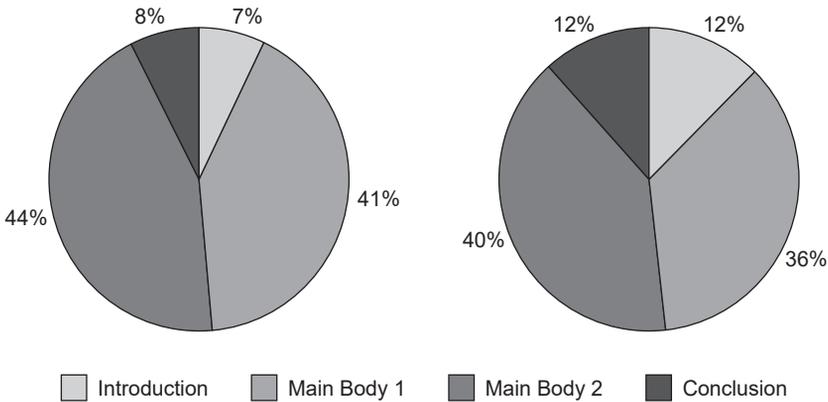


Fig. 4.19 Distribution of high-value modality markers in article sections in ELA (left) and PLA (right)

Table 4.15 Distribution of high-value epistemic modality markers by categories in ELA and PLA

	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
(quasi-) modal vbs	2	52	22	7	10	10	12	322	351	734	60	10	858	361	373	433	
modal modifiers		21	5	1	4	3	9	68	77	168	20	1	209	78	89	109	
adjectives and nouns		2	<1				<1	5	8	13	2		18	5	8	10	
all in ELA	2	75	28	8	14	13	21	395	436	915	82	11	1085	444	470	552	
modal vbs and future		22	2		4	4	5	72	71	158	16		196	78	80	96	
modal modifiers		25	1	2	1	1	8	47	65	125	25		175	51	74	99	
adjectives and nouns		2						12	5	17	5		24	12	5	10	
all in PLA		49	3	2	5	5	13	131	141	300	46		395	141	159	205	

Figures are normalised to 1 mln words.

As shown in Table 4.15, the slight preference for Main Body 2 over Main Body 1 was observed in all categories of high-value markers in the English part of the corpus and in the two most frequent categories in Polish (except adjectives and nouns). A comparison of the frequency of markers in English and

Polish texts by text segment shows that although Polish authors used consistently fewer high-value markers in all article sections than their Anglophone colleagues, the extent of the difference varied across segments from 1.5 to 1 in the Introduction and 1.8 to 1 in the Conclusion to 3 to 1 in Main Body 1 and Main Body 2.

High-value epistemic markers were used to express certainty that something was not the case in 16% of the ELA and PLA results. In English negative certainty was in 71% of the cases realized by means of modal verbs, in particular by means of *will* and *can't*, as in (50) and (51). Among epistemic modifiers concurring with negation, the most frequent was *certainly* (52). In Polish negative certainty was most often conveyed by modal verbs too, as shown by 66% of the data (53 and 54). Among epistemic modifiers the most frequent marker was *z pewnością* 'with certainty' (55).

- (50) *So, while the Papago algorithm . . . comes very close to describing the facts seen in section 3.2, the fact that it makes crucial reference to stressed/ accented vowels means that it will not work for Saramaccan.* (L2004-4; Main Body 2, at 70% of text)
- (51) *Given the Head Movement Constraint, the auxiliary was cannot have originated in the relative clause.* (LP2001-4; Main Body 2, at 58% of text)
- (52) *While I am sure that one could formulate an analysis under this model which accounts for the observation, it certainly does not immediately follow from the basic architecture.* (LP2002-8; Conclusion, at 96% of text)
- (53) *Użytkownik języka polskiego wie lub czuje, że nazwanie kobiety samicą nie może być neutralne.* (JK2003-1; Introduction, at 6% of text) 'A user of Polish knows or feels that calling a woman a female cannot be neutral.'
- (54) *Jeśli mamy tu do czynienia z jakimkolwiek wykonawcą czynności, nie będzie to czynność, o której się w zdaniu orzeka . . ., lecz czynność tematyzowana, o której się orzeka, że stała się powodem czegoś.* (BPTJ2001-2; Main Body 1, at 42% of text) 'If we have any agent here, it will not refer to the activity in the predicate . . . but to the thematised activity, which is stated to have caused something.'
- (55) *Antroponim Król z pewnością nie pochodzi od nazwy godności, lecz powstał jako przezwisko w określonych okolicznościach.* (ON2004-6; Main Body 1, at 48% of text) 'The antroponym Król with certainty did not originate in the royal title, but emerged as a nickname in certain circumstances.'

While the overall proportion of negative certainty was similar in both corpora, some differences were noted with respect to the distribution of its markers in the article sections. In ELA negative certainty was more frequent in the

second half of the article, with 36% of the markers found in Main Body 1 and 47% in Main Body 2, as shown in Table 4.16. By contrast, in PLA negative certainty was more frequently expressed in the first half of the article, with 42% of the markers located in Main Body 1 and 37% in Main Body 2. Thus in the case of English it seems more common in interpretive rather than descriptive sections of the text.

Table 4.16 Distribution of negative certainty in ELA and PLA

	I	Total for MB	C	X	Total	MB1	MB2	MB2 + C
1	2	3	4	5	6	7	8	9
negative certainty in ELA	12	144	16	2	174	63	81	97
negative certainty in PLA	6	49	7		62	26	23	30

Figures are normalised to 1 mln words.

In some cases high-value markers were thematised or occurred in combinations with emphasisers. Such amplified uses were noted in 6% of the English data and in 17% of the Polish records, with English examples being slightly more frequent in the second half of the articles. Qualifying the strength of the markers with the hypothetical mood or downtoners/ approximators was rarer in both corpora, but more frequent in Polish than in English, accounting for 3% and 1% of the records respectively. In Polish the main device for emphasis was fronting of the epistemic modifier (56, 57); in English fronting was also most frequent (58), but emphatic adverbs used with epistemic modal verbs were attested as well (59). With regard to downtoning, Polish authors were found to rely chiefly on the hypothetical mood (60), while English writers used hypothetical forms and downtoners with a similar frequency (61, 62). In Polish articles, qualified uses of high-value epistemic markers tended to occur more frequently in the second rather than in the first half of the text.

- (56) *Niewątpliwie miało to związek z ingerencjami cenzury zarówno w okresie zaborów, jak po roku 1945.* (EL2002-3; Main Body 2, at 53% of text) 'Undoubtedly it was connected with the interventions of censorship both in the time of partitions and after 1945.'
- (57) *Bez wątpienia właśnie Mieczysław Szymczak był propagatorem takiej postawy wobec języka.* (PORJ2005-10; Main Body 1, at 49% of text) 'Without doubt Mieczysław Szymczak was a promoter of this kind of attitude to language.'
- (58) *Surely, however, there is no reason to suppose this is true of thought.* (LP2004-2; Main Body 2, at 85% of the text)

- (59) *The speaker of such contexts will of course believe that (II) is false and so she won't be in a position to acceptably utter (II).* (LP2005-6; Main Body 2, at 87% of text)
- (60) *Wątpliwość wzbudza jednak asybilacja, która w tym ujęciu musiałaby nastąpić po pewnym czasie od epoki zaniku jerów słabych.* (ON2004-2; Main Body 2, at 54% of text). 'However, doubts concern assibilation, which on this approach would have to have occurred some time after weak yers had disappeared.'
- (61) *Graham could not mean that Zhuangzi is introducing the word 'dream' when he tells his readers that the night before he dreamt he was a butterfly.* (LS2004-4; Main Body 1, at 26% of text)
- (62) *The semantics for "too" will presumably say that it means something like "in addition to x", with the x being anaphoric to something made salient by the prior context.* (LP2002-13; Conclusion, at 96% of text)

To sum up the discussion so far, the main points of difference between the studied corpora in terms of high-value epistemic meanings were found to be:

- the number of markers, with ELA outnumbering PLA by 2.7:1;
- the ratio of modal verbs — 80% in ELA and 50% in PLA;
- the prevalence of subjective orientation in ELA (80%) and even proportion of subjective and objective orientation in PLA; and
- amplified uses of high-value markers — more frequent in PLA than in ELA; Less pronounced differences were observed in:
 - the distribution of negative certainty — more frequent in the second half of the article in ELA and in the first half of the article in PLA;
 - the distribution of amplified uses of high-value markers — in ELA slightly more frequent in the second half of the article;
 - qualified uses of high-value markers — more frequent in PLA than in ELA; and
 - the distribution of qualified uses of high-value markers — in PLA more frequent in the second half of the article.

The similarities involved:

- the realisation — implicit in the vast majority of cases;
- the dynamics of distribution across article sections, with high-value markers used with approximately the same frequency in Introduction and Conclusion and with Main Body 2 comprising somewhat more markers than Main Body 1;
- negative certainty — expressed in 16% of cases in both corpora; and
- the proportion between amplified and qualified uses of high-value markers, with the former outnumbering the latter in both corpora.

4.2 Middle-value markers

4.2.1 English

Middle-value modality markers found in ELA comprised a large and diverse group of lexical verbs, modal modifiers, a set of modal and quasi-modal verbs, a small set of epistemic adjectives with extraposed subjects and very rare instances of nouns following a copula after existential *there* or verb *have* with 1st person subject. As shown in Table 4.17, lexical verbs were by far most numerous, accounting for nearly half of the middle-value findings. Modal modifiers and (quasi-)modal verbs were attested with a similar frequency (about 25% of middle-value records), with epistemic modifiers only slightly more common than (quasi-)modals. Only 4% of the findings involved epistemic adjectives; in comparison to the other markers, the role of nouns was marginal.

Table 4.17 Middle-value epistemic markers in ELA: An overview of categories

middle-value modality marker	epistemic records	normalized to 1 mln words
modal and quasi-modal verbs	467 (24%)	222
modal modifiers	486 (25%)	231
adjectives	78	37
nouns	5	2
lexical verbs	898 (47%)	428
all	1,934	920

Of the modal and quasi-modal verbs, in terms of frequency the third group of middle-value markers found in ELA, only 9% were classified as epistemic. Compared to high-value epistemic modal verbs, middle-value modals turned out to be almost four times less common. As can be seen in Fig. 4.20, epistemic *should* dominated the findings for this group of markers and accounted for 78% of the records, followed far behind by predictability *would* (see Section 2.3.1 in Chapter 2), which comprised 10% of the records, quasi-modal *be supposed to* (somewhat over 7%), and epistemic *ought to* (slightly above 4%). It would be interesting to note that in the present corpus *should* and *ought to* were much more frequently attested in the epistemic meaning than in more general corpora. In ELA 25% of *should* and 28% of *ought to* records were identified as epistemic. By contrast, Coates' (1983: 58, 70) data from the Lancaster corpus indicate that both modal verbs are used epistemically in about 12% of

the cases. Similar findings for *should* are reported from the *International Corpus of English* by Collins (2009: 45), but the figures for epistemic *ought to* from this source are still lower (3% of all records for this modal verb).

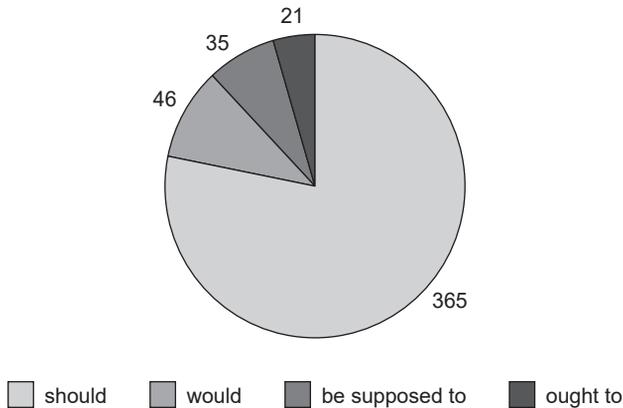


Fig. 4.20 Modal and quasi-modal verbs as middle-value epistemic markers in ELA

With regard to the syntactic features of middle-value epistemic (quasi-) modals, Fig. 4.21 shows that they were found to occur typically with inanimate subjects, which, together with existential *there*-sentences, accounted for 90% of their syntactic contexts. Also well marked was their association with the verb *be*, observed in 46% of the cases. These findings are in line with Coates' (1983) observations concerning epistemic *should* and *ought to*, which tend to concur with inanimate subjects and non-agentive verbs in both written and spoken corpora she analysed. The time reference of the main predication was non-past in 87% of the records.

Information concerning the use of particular (quasi-)modals in ELA is presented in Table 4.18. As can be seen from the table, the association with 3rd person inanimate subject was strongest for *ought to*, *be supposed to*, and *should* (ranging from 88% for *should* to 100% for *ought to*), as in (63-65). *Should* and *ought to* were also more frequently associated with verb *be* than the other verbs (66-67), and the affinity between *should*, the most frequently attested modal verb in this group of markers, and stative verbs was observed in almost 60% of the records. Combinations with the passive voice were limited to *would* and *should* (13% and 6% of the records respectively). In 11% of the cases, *would* was used in combinations with middle-value modal modifiers (68).

Table 4.18 Middle-value epistemic markers in ELA: Modal and quasi-modal verbs

modality marker	all records	epistemic uses
<i>be supposed to</i>	63 (30)	35 (17)
		with progressive infinitive 4
		present tense 32
		past tense 2
		with 3 rd person inanimate subject 34
		with verb <i>be</i> 13
with <i>could</i> 1		
<i>ought to</i>	75 (36)	21 (10)
		with 3 rd person inanimate subject 21
		with verb <i>be</i> 11
		with verb <i>occur</i> 2
<i>should</i>	1,445 (688)	365 (174)
		with negation 33
		with progressive infinitive 1
		with perfective infinitive 11
		with passive 22
		with 3 rd person inanimate subject 321
		with <i>there</i> as subject 13
		with verb <i>be</i> 174
		with verb <i>have</i> 17
		with <i>exist/ take place/ occur</i> 11
		with <i>be able to</i> 14
		<i>should be clear</i> 24
		<i>should be possible</i> 23
		<i>should be true</i> 6
		<i>should not be surprising</i> 4
with <i>presumably</i> 1		
associations with <i>rather</i> 5		
<i>would</i>	3,501 (1,667)	46 (22)
		with negation 7
		with perfective infinitive 11
		with passive 6
		with 3 rd person inanimate subject 29
		with <i>there</i> as subject 2
		with verb <i>be</i> 16
		with verb <i>have</i> 2
		with <i>likely, probably, presumably</i> 5

Figures in parentheses are normalised to 1 mln words.

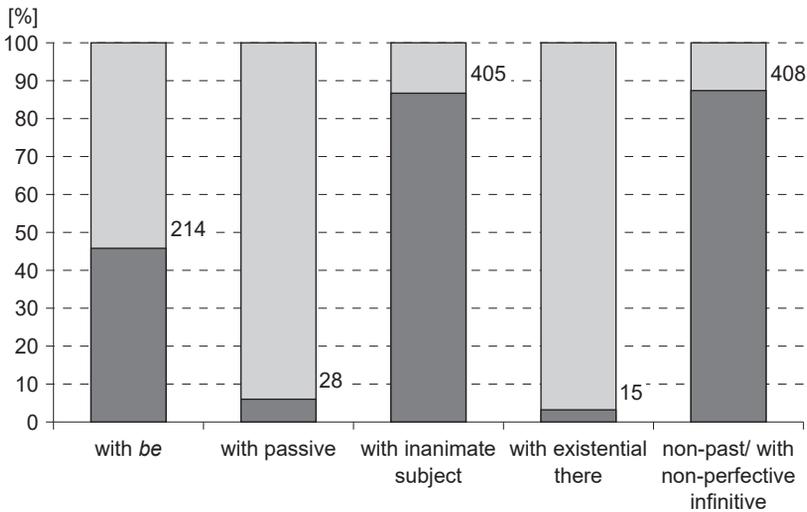


Fig. 4.21 Selected syntactic features of middle-value epistemic modal verbs in ELA

- (63) *Still, given what we've said about the way the principle of relevance applies to utterances containing and, it ought to follow that the conjunction has effects which do not arise when each conjunct is taken individually.* (L2005-7; Main Body 2, at 56% of text)
- (64) *Although order at PF is supposed to be irrelevant to the syntax (e.g., Chomsky, 1995: 334), the pre-Spell-Out part of the computation (the 'overt syntax') is in fact wholly driven by the need to engineer well-formed PF representations.* (L2006-5; Main Body 1, at 37% of text)
- (65) *This fluid, dynamic conceptualization of context should prove empowering for translators and scholars of translation, as well as more responsive to the political and cultural realities of what is proving to be one of the most conflictual phases of world history.* (JP2006-4; Conclusion, at 100% of text)
- (66) *However, under this analysis, the productive surface reflex of antepenultimate accent is a high tone spread across both the antepenultimate and penultimate syllable, implying words of the form (CV)CV' CVCV should be rare, which they are.* (L2004-4; Main Body 1, at 40% of text)
- (67) *Because the enough construction has non-trivial descriptive entailments, it ought to be embeddable, and the perfect acceptability of (ic) bears out this prediction.* (LP2002-1; Main Body 2, at 82% of text)
- (68) *It seems that these speakers may have decided at some point to use Standard English . . . Having made such a decision, they would probably have negative associations with AAVE features, and such features would probably be very salient for them.* (L2005-11; Main Body 2, at 72% of text)

An analysis of the distribution of epistemic modals and quasi-modals in different parts of articles shows that they were more likely to appear in the second half of the text (Table 4.19). This tendency is particularly well marked in the case of *should* (and indeed depends on the figures for this verb), the most frequent modal in this group of markers, which was found to occur twice as often in Conclusion than in Introduction and which was used more often in Main Body 2 than in Main Body 1. Data for *would*, the second most frequent marker in this category, and *ought to* do not contradict this tendency, but the findings for *be supposed to* are in fact reversed. This might perhaps be attributed to the fact that *be supposed to*, while marking epistemic commitment in a way similar to *should* and *ought to*, also carries information about the source of knowledge (hearsay, other research rather than the author's reasoning based on inference). This may make it a more useful tool for outlining various research perspectives, introducing theoretical concepts or discussing possible approaches to a problem addressed, which usually takes place at the beginning of an article, as in (69) and (70).

Table 4.19 Distribution of middle-value epistemic modality markers in ELA: Modal and quasi-modal verbs

	A	I	MB								Total for MB	C	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%								
					R	D										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
<i>be supposed to</i>		3					1	17	13	31	1	35	17	14	15	
<i>ought to</i>		1						8	8	16	4	21	8	8	12	
<i>should</i>	6	14	7	7	6	9	15	117	152	313	32	365	137	176	208	
<i>would</i>		2	8	2	2	3	9	8	9	41	3	46	20	21	24	
all	6	20 4%	15	9	8	12	25	150	182	401	40 >8%	467	182 39%	219 47%	259	

- (69) *In philosophy, it is common to regard the logical representation of sentences as showing us something about the meaning of those sentences, and differences of logical representation are supposed to show us facts, sometimes non-obvious facts, about differences of meaning between seemingly similar expressions and sentences.* (LS2004-3; Introduction, at 2% of text)
- (70) *They certainly do not “flow,” as cultures, commodities, and knowledge are supposed to do according to the dominant, neo-liberal paradigm of globalization.* (LC2005-6; Introduction, at 4% of text)

Figure 4.22 summarises the distribution of middle-value epistemic (quasi-) modals in different parts of articles. Twice as many markers of this category were attested in Conclusion than in Introduction and the difference between Main Body 1 and Main Body 2 occurrences was of the order of 8%.

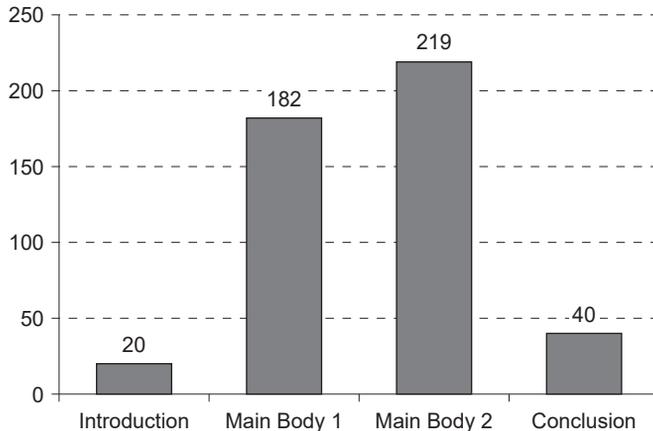


Fig. 4.22 Middle-value epistemic modal and quasi-modal verbs in article sections (ELA)

Epistemic modifiers, in the order of frequency the second group of middle-value markers found in ELA, were only slightly more common than (quasi-)modal verbs and accounted for 25% of the records. Although compared to high-value modifiers this group was smaller in terms of the number of types, middle-value modifiers were more frequently used in texts. Fig. 4.23 shows that among the 486 occurrences, most common were *presumably*, which accounted for 36% of the findings, and *probably* with 33% of the records. These two were followed by *arguably* (17%), *(most) likely* (11%), and *supposedly* (3%), and only two rare instances of *in all likelihood*.

An overview of the syntactic characteristics of middle-value modifiers (Fig. 4.24) shows that their distribution in a sentence was similar to that of high-value epistemic modifiers. Over two thirds of the markers occurred at the medial position, about 5% at the premedial position, and 19% initially. *Be* was found to be the main verb in 42% of the records, which is exactly the proportion established for high-value modifiers. The concurrence with the past tense was similar too: 8% for both high- and middle-value epistemic adverbs.

Table 4.20 presents data for particular modifiers. The figures for sentence position show that the extent of preference for the middle position varied from 82% for *probably*, through 70% and 60% for *likely* and *arguably*, to 58% for *presumably* (71-74). Indeed, the two most frequent markers were found

to be very different in this respect, *presumably* occurring relatively frequently (in 28% of cases) at the initial, thematic position (75) and *probably* fronted in only 8% of the records (76). The third most frequent modifier, *arguably*, was — like *presumably* — comparatively frequently used at the initial position (77).

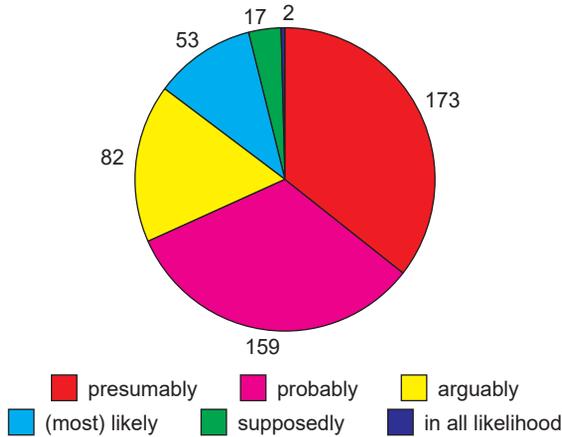


Fig. 4.23 Modal modifiers as middle-value epistemic markers in ELA

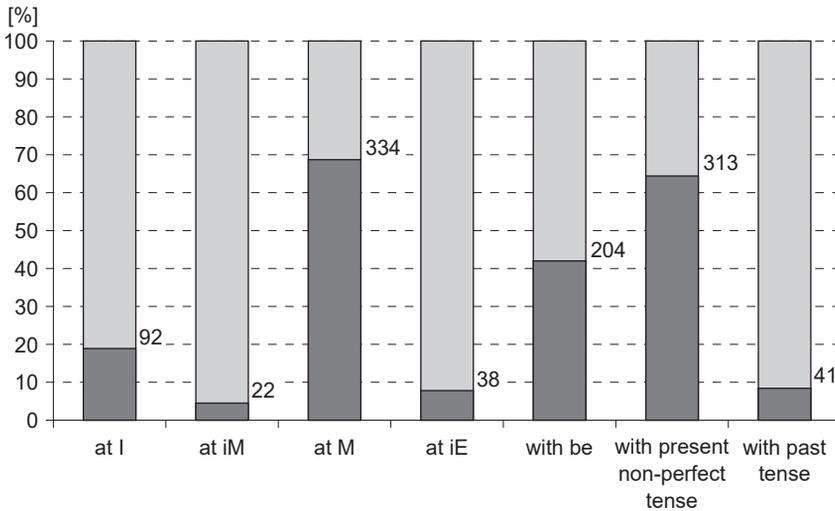


Fig. 4.24 Selected syntactic features of middle-value modal modifiers in ELA

In 23% of the records, middle-value epistemic modifiers were associated with modal verbs, such as *would*, *will*, *must*, *should* and *could*, many of which carried epistemic meaning (79, 81), were ambiguous between root and epis-

temic interpretation (80), or added hypotheticality (78). The attraction was particularly well-marked in the case of *likely* and *presumably* (78-80).

Table 4.20 Middle-value epistemic markers in ELA: Modal modifiers

modality marker	epistemic records	sentence position	associations
<i>arguably</i>	82 (39)	I 24	with negation 8
		iM 6	with verb <i>be</i> 40
		M 49	with verb <i>have</i> 1
		iE 3	with <i>can</i> 2
			with <i>cannot</i> 1
			with <i>could</i> 1
			with <i>may</i> 2
			with <i>should</i> 1
			with present non-perfect tense 64
			with past tense 6
<i>in all likelihood</i>	2 (1)	I 1	with verb <i>be</i> 1
		M 1	with <i>would</i> 1
			with present non-perfect tense 1
<i>(most) likely</i>	53 (25)	I 7	with negation 4
		iM 5	with verb <i>be</i> 21
		M 37	with verb <i>have</i> 4
		iE 4	with <i>must</i> 1
			with <i>will</i> 5
			with <i>would</i> 12
			with present non-perfect tense 25
			with past tense 9
			<i>more likely</i> 10
			<i>most likely</i> 24
	<i>very likely</i> 3		
<i>presumably</i>	173 (82)	I 48	with negation 13
		iM 6	with verb <i>be</i> 56
		M 100	with verb <i>have</i> 10
		iE 19	with <i>can</i> 1
			with <i>cannot</i> 2
			with <i>could</i> 2
			with <i>must/ have to</i> 10
			with <i>should</i> 2
			with <i>shall/ will</i> 11
			with <i>would</i> 24
			with present non-perfect tense 106
			with past tense 8

<i>probably</i>	159 (76)	I	12	with negation	14
		iM	5	with verb <i>be</i>	84
		M	130	with verb <i>have</i>	2
		iE	12	with <i>can</i>	3
				with <i>could</i>	2
				with <i>have to</i>	1
				with <i>should</i>	4
				with <i>shall/ will</i>	6
				with <i>would</i>	19
				with present non-perfect tense	102
		with past tense	16		
<i>supposedly</i>	17 (8)	M	17	with verb <i>be</i>	2
				with present non-perfect tense	15
				with past tense	2

Figures in parentheses are normalised to 1 mln words.

- (71) *Lacking these features of normal conversation, the incidence of nonnovel speech in SLIH is probably lower than natural dialog, depending on the items counted.* (LC2004-6; Main Body 2, at 81% of text)
- (72) *Because the vowel in CVV is produced with a lower tongue position than the vowel in CVC, the difference in energy between CVV and CVC is most likely greater than the difference would be if CVV and CVC were produced with the same vowel quality.* (L2002-3; Main Body 2, at 62% of text)
- (73) *Collaborative joking interaction is also arguably the most complex form of communication that we engage in routinely; this interaction is also the most 'situated' in its interpretation.* (JP2003-9; Introduction, at 8% of text)
- (74) *This liberality is presumably overcome in this case because there is a substitute for negative evidence, a principle of 'uniqueness' that governs verbal morphology.* (LP2001-4; Main Body 1, at 15% of text)
- (75) *Presumably this fricative-like noise makes the glide a fairly close perceptual and articulatory match for input /v/. (L2006-7; Main Body 1, at 26% of text)*
- (76) *Probably the most fundamental notion in VT, as it is in cognitive grammar (Lakoff, 1987), is the centrality of categorization in human linguistic processing.* (LS2002-7; Introduction, at 6% of text)
- (77) *Arguably, given its greater syntactic flexibility, it is easier to use but in real time speech to signal the other "hand" than on the other hand.* (JP2004-1; Main Body 2, at 92% of text)
- (78) *In the cases just described involving utterances of the single word 'rain,' for example, these resources would presumably have to include at least a few other common nouns...* (LC2005-7; Main Body 2, at 66% of text)
- (79) *The fact that the audience will (most likely) not at any point explicitly entertain the trivial proposition that the Gricean takes to be said by (7) in*

no way counts against the claim that it is said. (LP2002-3; Main Body 2, at 76% of text)

(80) *If for adverbials are to be consistently analysed, presumably the eventuality must also be represented with state predicates as in The door was open for a minute.* (LP2003-4; Main Body 2, at 75% of text)

(81) *As a function of x 's wealth, $rich(x)$ should probably be 0 unless the wealth exceeds some threshold, perhaps average wealth.* (LP2005-1; Main Body 2, at 60% of text)

With regard to the distribution of middle-value modifiers in article sections, the three most common adverbs tended to occur in Introduction more frequently than in Conclusion, as shown in Table 4.21. This tendency was strongest in the case of *arguably*, which was more than twice as frequently attested in Introduction than in the closing section of the article (73). The preference for Main Body 2 over Main Body 1 was also shared to a large extent, observed in all modifiers except *arguably*.

Table 4.21 Distribution of middle-value epistemic modality markers in ELA: Modal modifiers

	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>arguably</i>	1	12	2			1	6	31	24	64	5		82	33	31	36	
<i>in all likelihood</i>									1	1	1		2		1	2	
<i>(most) likely</i>		4	1		6		4	13	19	43	6		53	20	23	29	
<i>presumably</i>		11	5	1	5	4	3	52	83	153	7	2	173	63	90	97	
<i>probably</i>	2	16	5	1	2	4	19	50	50	131	10		159	58	73	83	
<i>supposedly</i>		1					3	5	6	14	2		17	5	9	11	
all	3	44 9%	13	2	13	9	35	151	183	406	31 6%	2	486	179 37%	227 47%	258	

Fig. 4.25 summarises the data for the distribution of middle-value modifiers in the four segments of text. 9% of the markers were found in Introduction, as contrasted with 6% used in Conclusion. The difference between Main Body 1 and Main Body 2 occurrences was found to be of the order of 10% in favour of the latter (37% and 47% respectively). As in the case of high-value modifiers, the share of fronted markers was calculated for individual sections to see whether thematisation of modal meaning was associated with any particular text segment. Like with the high-value adverbs, fronted modifiers had

the biggest share in Introduction (30% of the findings for this section), followed by Main Body 1 (23%), Conclusion (19%) and finally Main Body 2 (16% of records for this text segment).

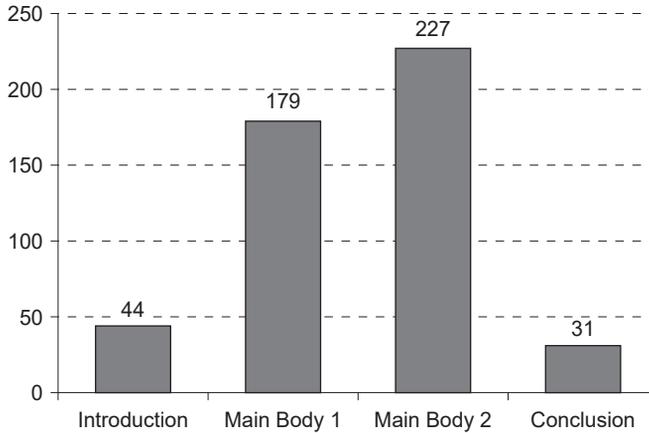


Fig. 4.25 Middle-value modal modifiers in article sections (ELA)

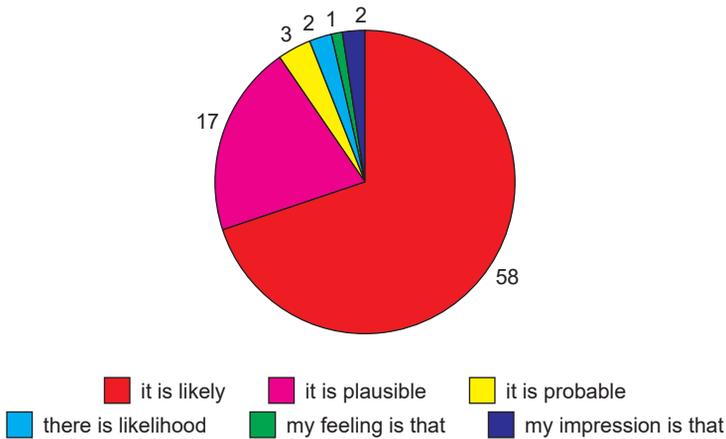


Fig. 4.26 Adjectives and nouns as middle-value epistemic markers in ELA

Phrases with epistemic adjectives and nouns accounted for only 4% of middle-value records, the vast majority of which involved adjectives (94%). As can be seen in Fig. 4.26, the most popular epistemic marker in this group was the adjective *likely*, attested in 70% of cases (82), followed by *plausible* with 20% of the findings (83). The dominant orientation was objective, as demonstrated by 96% of the records (82-84), subjective orientation limited to three instances (85). Only in 8% of the records was the main verb of *that*-clause used in the past tense.

- (82) *From a diachronic perspective, however, it is more likely that these expressions are relics of older and no longer extant meanings of tall, rather than metaphorical extensions from the modern, spatial meaning.* (LS2003-2; Main Body 2, at 92% of text)
- (83) *It is thus plausible that a difference in the distribution of vowel length contrasts explains the different weight status of CVC within the Hokan language family.* (L2002-3; Main Body 2, at 69% of text)
- (84) *If present trends continue, there is reasonable likelihood that written marks of punctuation will either decrease in number (“light” punctuation) or openly mark the cadences of informal speech (reflecting the author’s “inner voice”).* (LS2001-2; Conclusion, at 97% of text)
- (85) *My impression is that the ideas on which I have relied are by now all common knowledge – and thus I have provided only minimal references.* (LP2002-12; Introduction, at 5% of text)

Data for individual markers are presented in Table 4.22. There was a well-marked tendency for the adjectives to combine with epistemic copulas *seem* and *appear* (86-88), observed in more than 40% of the adjective records. Such combinations added tentativeness to the modalised statements, making them more cautious. 17% of the middle-value adjectives and nouns appeared with intensifying adverbs or adjectives (84, 87), which in some cases coincided with epistemic copulas (88).

Table 4.22 Middle-value epistemic markers in ELA: Adjectives and nouns

modality marker	epistemic records	associations	
<i>likely</i> (It is A that)	58 (28)	with <i>it is</i>	31
		with <i>it seems/ it appears</i>	25
		with intensifying adverbs	7
<i>plausible</i> (It is A that)	17 (8)	with <i>it is</i>	11
		with <i>it seems/ it appears</i>	6
		with intensifying adverbs	4
<i>probable</i> (It is A that)	3	with <i>it is</i>	2
		with <i>it seems</i>	1
		with intensifying adverbs	1
<i>likelihood</i> (There is N that)	2	with <i>there is</i>	2
		with intensifying adjectives	2
<i>feeling</i> (I/ We have N that)	1	with I/ we have	
		variation with <i>my N is that</i>	1
<i>impression</i> (I/ We have N that)	2	with I/ we have	
		variation with <i>my N is that</i>	2

Figures in parentheses are normalised to 1 mln words.

- (86) *It seems probable that the reason for the writer's not simply using the second RQ alone . . . lies in an additional function of many RQs-as-retorts: to be funny.* (JP2005-14; Main Body 2, at 60% of text)
- (87) *It is highly probable that =rlijarra and =rlija are historically analysable as *=rli+=jarra and *=rli+=pa.* (L2005-9; Main Body 1, at 32% of text)
- (88) *It seems highly likely that once they are suitably primed, speakers will be quite good at spotting the resultative constructions and distinguishing them from the circumstantials and the depictives.* (LP2004-2; Main Body 1, at 47% of text)

As can be seen in Table 4.23, more middle-value adjectives were attested in the second half of the main body of text than in Main Body 1, but these findings depended chiefly on the distribution of *likely*, the most frequent marker in this group. There was a tendency for middle-value adjectives introduced by copula *seem* to occur in the second half of the article, with over 40% of such combinations located in the last quarter of text.

Table 4.23 Distribution of middle-value epistemic modality markers in ELA: Adjectives and nouns

	I		MB							Total for MB	C	X	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C	
			B		M		R and D		<50%								>50%
							R	D									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
<i>likely</i> (It is A that)	4	2	3		2	5	13	21	46	7	1	58	18	28	35		
<i>plausible</i> (It is A that)			1			3	8	5	17			17	9	8	8		
<i>probable</i> (It is A that)	1					1	1		2			3	1	1	1		
all adjectives	5	2	4		2	9	22	26	65	7	1	78	28	37	44		
<i>likelihood</i> (there is N that)	1									1		2			1		
<i>feeling</i> (I have N that)							1		1			1	1				
<i>impression</i> (I have N that)	1						1		1			2	1				
all nouns	2						2		2	1		5	2		1		
Total	7	2	4		2	9	24	26	67	8	1	83	30 36%	37 44%	45		

The three subjectively oriented modal markers occurred in the first half of the article: one in Introduction and two in Main Body 1.

The most diverse and the most frequently attested group of middle-value markers in ELA were lexical verbs, which accounted for 47% of the findings. As shown in Fig. 4.27, of the nine verbs, the most frequent items were *think* (25% of the record for this category of markers), *seem* (22%) and *assume* (20%), followed by *believe* and *appear* (11% each), and *suppose* and *expect* (each with 4% of the data). *Imagine* and *presume* together accounted for 3% of the findings.

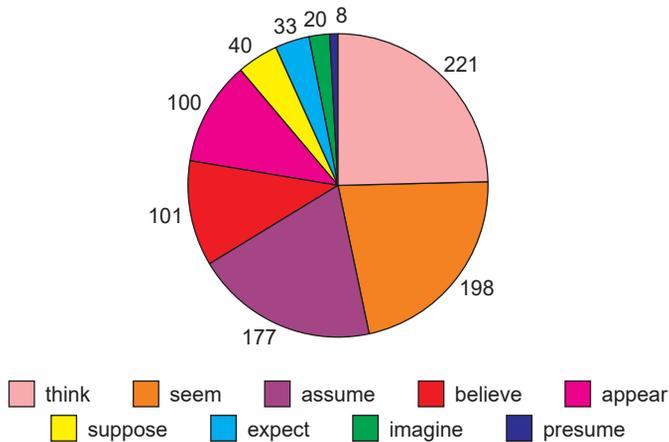


Fig. 4.27 Lexical verbs as middle-value epistemic markers in ELA

Information about the use of individual verbs is summarised in Table 4.24. As can be seen from the table, the structures taken into consideration involved: passive forms with anticipatory *it* (89), *to*-infinitives as adjective complementation with anticipatory *it* (90), existential structures (91), impersonal constructions with *one* as subject (92), and forms with 1st person subject (93-94). For *appear* and *seem*, the items searched were limited to structures with anticipatory *it* and *that*-clause, with and without 1st person pronoun in the object position (95-96).

The proportion between objective and subjective orientation was slightly tilted towards the latter, with 46% of the records identified as objective (89-92, 96). The subjective uses are illustrated in Examples (93-95) and (97). A closer look at the individual verbs, however, shows that some of them, such as *believe*, *think* and *assume*, were much more often used subjectively (in 92%, 81%, and 72% of their records respectively), and that *appear* and *seem* virtually specialised in objective orientation.

Table 4.24 Middle-value epistemic markers in ELA: Lexical verbs

verb	epistemic uses	
<i>assume</i>	177 (84)	
	<i>It is assumed that</i> type	11 (6%)
	with <i>is</i>	4
	with <i>can be</i>	5
	with <i>could/ might be</i>	2
	with <i>reasonably</i>	2
	with present non-perfect tense in <i>that</i> -clause	8
	<i>It is reasonable to assume that</i> type	28 (16%)
	with <i>is</i>	16
	with <i>seems</i>	7
	with <i>reasonable</i>	13
	with <i>natural/ uncontroversial/ logical/ straightforward</i>	6
	with <i>plausible/ probably correct/ safe</i>	4
	<i>There is reason to assume</i>	2
	with negation in <i>that</i> -clause	1
	with present non-perfect tense in <i>that</i> -clause	18
	with past tense in <i>that</i> -clause	2
	<i>One might assume that</i> type	10 (6%)
	with <i>might</i>	5
	with <i>can</i>	2
	with <i>must/ have to</i>	3
	with negation in <i>that</i> -clause	2
	with present non-perfect tense in <i>that</i> -clause	6
	with past tense in <i>that</i> -clause	2
	<i>I/ We assume that</i> type	128 (72%)
	parentheticals	9
	with <i>can/ could/ may/ might</i>	12
with <i>safely</i>	1	
with <i>tentatively</i>	1	
with negation in <i>that</i> -clause	12	
with present non-perfect tense in <i>that</i> -clause	109	
with past tense in <i>that</i> -clause	3	
<i>believe</i>	101 (48)	
	<i>It is believed that</i> type	1
	with <i>is</i>	1
	<i>There is reason to believe that</i> type	7 (7%)
	with <i>is</i>	6
	with <i>seems</i>	1
	<i>It seems reasonable to believe</i>	1
	with negation in <i>that</i> -clause	4
with present non-perfect tense in <i>that</i> -clause	5	
with past tense in <i>that</i> -clause	1	

	<i>I/ We believe that</i> type	93 (92%)
	parentheticals	29
	with emphatic <i>do</i> (<i>I do believe</i>)	2
	with negation in <i>that</i> -clause	2
	with present non-perfect tense in <i>that</i> -clause	75
	with past tense in <i>that</i> -clause	2
<i>expect</i>	33 (16)	
	<i>It is expected that</i> type	6 (18%)
	with <i>is</i>	1
	with <i>is to be</i>	2
	with <i>may be</i>	1
	with <i>would be</i>	2
	with present non-perfect tense in <i>that</i> -clause	1
	<i>It is reasonable to expect that</i> type	2
	with <i>reasonable</i>	1
	with <i>logical</i>	1
	<i>One might expect that</i> type	4 (12%)
	with <i>might</i>	2
	with <i>would</i>	2
	<i>I/ We expect that</i> type	21 (64%)
	with <i>should/ would/ can</i>	7
	with negation in <i>that</i> -clause	3
	with present non-perfect tense in <i>that</i> -clause	3
<i>imagine</i>	20 (10)	
	<i>It is tempting to imagine that</i> type	1
	with present non-perfect tense in <i>that</i> -clause	1
	<i>One might imagine that</i> type	8 (40%)
	with <i>might</i>	5
	with <i>can/ could</i>	3
	with present non-perfect tense in <i>that</i> -clause	1
	with past tense in <i>that</i> -clause	2
	<i>I/ We imagine that</i> type	11 (55%)
	parentheticals	5
	with <i>can/ might/ should</i>	5
	with negation in <i>that</i> -clause	1
	with present non-perfect tense in <i>that</i> -clause	5
<i>presume</i>	8 (4)	
	<i>It is reasonable to presume that</i> type	1
	with past tense in <i>that</i> -clause	1
	<i>One might presume that</i> type	2
	with <i>might</i>	1
	with <i>may</i>	1
	with present non-perfect tense in <i>that</i> -clause	1
	<i>I/ We presume that</i> type	5

	parentheticals	1
	with present non-perfect tense in <i>that</i> -clause	3
	with past tense in <i>that</i> -clause	1
<i>suppose</i>	40 (19)	
	<i>It is supposed that</i> type	1
	with <i>might be</i>	1
	<i>It is reasonable to suppose that</i> type	16 (40%)
	with <i>seems</i>	2
	with <i>reasonable</i>	4
	with <i>natural/ sensible/ not implausible/ tempting</i>	4
	<i>There is/ are reason(s) to suppose</i>	8
	with emphatic <i>good/ every reason</i>	5
	with negation in <i>that</i> -clause	3
	with present non-perfect tense in <i>that</i> -clause	11
	with past tense in <i>that</i> -clause	1
	<i>One might suppose that</i> type	5
	parentheticals	1
	with <i>might</i>	3
	with <i>may/ can</i>	2
	with present non-perfect tense in <i>that</i> -clause	2
	with past tense in <i>that</i> -clause	1
	<i>I/ We suppose that</i> type	18 (45%)
	parentheticals	2
	with <i>can/ may/ might</i>	7
	with <i>have to</i>	1
	with negation in <i>that</i> -clause	1
	with present non-perfect tense in <i>that</i> -clause	13
<i>think</i>	221 (105)	
	<i>It is thought that</i> type	10 (5%)
	with <i>is</i>	3
	with <i>might be</i>	7
	with present non-perfect tense in <i>that</i> -clause	6
	<i>It is reasonable to think that</i> type	16 (7%)
	with <i>is</i>	12
	with <i>seems</i>	1
	with <i>might be/ would be</i>	3
	with <i>natural/ reasonable/ not unreasonable/ irresistible/ tempting</i>	7
	<i>There is reason to think</i>	9
	with emphatic <i>good reason</i>	3
	with negation in <i>that</i> -clause	5
	with present non-perfect tense in <i>that</i> -clause	13
	<i>One might think that</i> type	17 (8%)
	parentheticals	1
	with <i>might</i>	12
	with <i>would</i>	2

	with <i>might be tempted/ inclined to think</i>	3
	with negation in <i>that</i> -clause	1
	with present non-perfect tense in <i>that</i> -clause	11
	<i>I/ We think that</i> type	178 (80%)
	parentheticals	55
	with <i>should</i>	1
	with <i>would prefer to</i>	1
	with <i>is/ are inclined to think</i>	2
	with emphatic <i>do</i>	3
	with <i>certainly</i>	1
	with negation in <i>that</i> -clause	18
	with present non-perfect tense in <i>that</i> -clause	133
	with past tense in <i>that</i> -clause	4
<i>appear</i>	100 (48)	
	<i>It appears that</i> type	100
	with <i>would</i>	24
	with <i>might/ may/ could</i>	5
	parentheticals	2
	<i>appear to be the case that</i>	4
	with negation in <i>that</i> -clause	19
	with present non-perfect tense in <i>that</i> -clause	76
	with past tense in <i>that</i> -clause	6
<i>seem</i>	198 (94)	
	<i>It seems that</i> type	168 (85%)
	with <i>would</i>	24
	with <i>might/ may/ can</i>	11
	with emphatic <i>does (It does seem)</i>	4
	parentheticals	20
	with negation in <i>that</i> -clause	20
	with present non-perfect tense in <i>that</i> -clause	121
	with past tense in <i>that</i> -clause	4
	<i>It seems to me/ us that</i> type	30
	parentheticals	12
	with negation in <i>that</i> -clause	5
	with present non-perfect tense in <i>that</i> -clause	22
	with past tense in <i>that</i> -clause	2

Figures in parentheses are normalised to 1 mln words.

- (89) *It can be assumed that even speakers of structurally completely different languages share the same basic underlying cognitive processes that enable and control linguistic categorization.* (LS2005-2; Introduction, at 6% of text)
- (90) *Nevertheless, it is reasonable to suppose that the kind of data gathering enterprise carried out by inductivists (which relies on abductivism) creates*

- a corpus that ought to provide the best opportunity for the linguist's intuitions to work on.* (LS2003-5; Conclusion, at 92% of text)
- (91) *In fact, there is reason to believe that these examples do not involve true disjunction at all, for they differ from ordinary clausal disjunctions in a number of respects.* (LP2001-9; Main Body 2, at 76% of text)
- (92) *Accordingly, the activity, situation, and recipient being invariant, one might expect that any variations in politeness would correspond to categories of status or gender.* (JP2003-4; Conclusion, at 94% of text)
- (93) *But I think that the permissive solution is false; it counts, I shall argue, sentences as true that are intuitively false.* (LP2005-6; Main Body 1, at 40% of text)
- (94) *First, we assume that (20a) is a result of the independently motivated association between clitics/agreement and Tense...* (L2001-2; Main Body 1, at 49% of text)
- (95) *It seems to me, however, that once we understand precisely what it is that makes the thesis of semantic atomism seem so implausible, it will turn out that the traditional semantic holist is faced with a rather uncomfortable dilemma when it comes to explaining what the best reasons are for ruling it out.* (LC2005-7; Introduction, at 9% of text)
- (96) *It appears, in sum, that the relationships which are most prevalent and significant within the syntax are not mirrored in the syllable, and conversely, the facets of syllable structure normally considered most central by phonologists are not matched by similar relationships within the clause.* (L2006-6; Main Body 2, at 68% of text)
- (97) *It seems to us, however, that the applied linguists that we have looked at have neither a serious critique of mainstream linguistics nor a coherent alternative.* (L2002-1; Conclusion, at 98% of text)

In 19% of the cases, the epistemic verb was used with a modal verb or with the copula *seem*, which added tentativeness to the statement, as in (92), or presented it as an objective fact, as in (89). These additionally modalised uses were nearly four times more frequent with objective than with subjective orientation. Occasionally, lexical verbs occurred with additional emphasis, e.g., with emphatic *do* (98), evaluative adjective (99), or adverb (100), but such uses were comparatively rare, attested in less than 3% of records for this group of markers.

In 15% of the records, the lexical verbs occurred parenthetically, use particularly frequent with *believe*, as demonstrated by 29% of the findings for this verb (101), and *think* and *imagine* (25% of the records for each, as in 102 and 103 respectively). Over 80% of the parenthetical records were associated with subjective orientation.

- (98) *It does seem that Ogihara would have to resort to some form of quantifier rescoping for event-reporting sentences.* (LP2001-5; Main Body 2, at 54% of text)
- (99) *Just as there is good reason to think that mind-reading is not merely an application of general reasoning abilities to a particular (behavioural) domain, so there is good reason to think that pragmatic interpretation is not merely an application of general mind-reading abilities to a particular (communicative) domain.* (L2005-8; Introduction, at 20% of text)
- (100) *While I certainly think that an adequate semantic theory of demonstratives must explain their apparent ability to serve both as referential terms and as bound variables, I am going to let this portion of the theoretical task fall outside the scope of this paper...* (LP2001-6; Main Body 1, at 28% of text)
- (101) *The answer, I believe, is that it cannot, unless a serious effort is made to recontextualize the text in question.* (JP2006-4; Main Body 2, at 80% of text)
- (102) *One of the reasons Munn focuses on the qualisign, I think, is that it permits her to find identities among quite distinct modes of 'lightness.'* (LC203-11; Main Body 1, at 38% of text)
- (103) *And there are, I imagine, a variety of ways in which we may think of the relation between those.* (LS2004-2; Main Body 2, at 93% of text)

With regard to the distribution in article sections, Table 4.25 shows that while the proportion in Introduction and Conclusion was balanced and amounted to 9%, the verbs tended to occur in Main Body 2 more frequently than in Main Body 1, as demonstrated by the difference of 14% between the two text segments. It is worth noting that the preference for Main Body 2 can be observed in all the markers except the rarest *presume* and that apart from *appear*, where it is less pronounced, it is of the order of at least 10% for each of the remaining verbs.

An analysis of the distribution of lexical verbs in different parts of the article shows that subjective orientation was somewhat more frequent in all the identified text segments (Fig. 4.28), but the extent of the difference varied and was relatively more clearly marked in Introduction and Conclusion, where it was of the order of 16% and 12% respectively, and least conspicuous in Main Body 1, where only a 4% difference was noted. 51% of lexical verbs associated with modals or epistemic copula *seem* were found in Main Body 2, as contrasted with only 36% of these records found in Main Body 1. With regard to Introduction and Conclusion, they were more common in the former (9% as contrasted with 4% of the records coming from the closing section of articles).

Table 4.25 Distribution of middle-value epistemic modality markers in ELA: Lexical verbs

1	2	3	4	5	MB				9	10	Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C		
					B	M	R and D											<50%	>50%
							R	D											
<i>assume</i>		10	2	1	1	7	1	66	80	158	6	3	177	70	88	94			
<i>believe</i>		13	3	1	1	1	2	28	41	77	11		101	33	44	55			
<i>expect</i>		2		1	1	1	1	7	18	29	2		33	9	20	22			
<i>imagine</i>		1			1			6	12	19			20	7	12	12			
<i>presume</i>		1			1		1	3	2	7			8	4	3	3			
<i>suppose</i>		2					1	13	19	33	5		40	13	20	25			
<i>think</i>		27	1	1	1	1	2	66	94	166	27	1	221	69	97	124			
<i>appear</i>		5	4	1	8	6	8	28	31	86	9		100	41	45	54			
<i>seem</i>	1	16	3		2	2	7	58	89	161	20		198	63	98	118			
all	1	77	13	5	16	18	23	275	386	736	80	4	898	309	427	507			
		9%									9%			34%	48%				

In less than 4% of the records for this group of markers the main verb in *that*-clause was in the past tense.

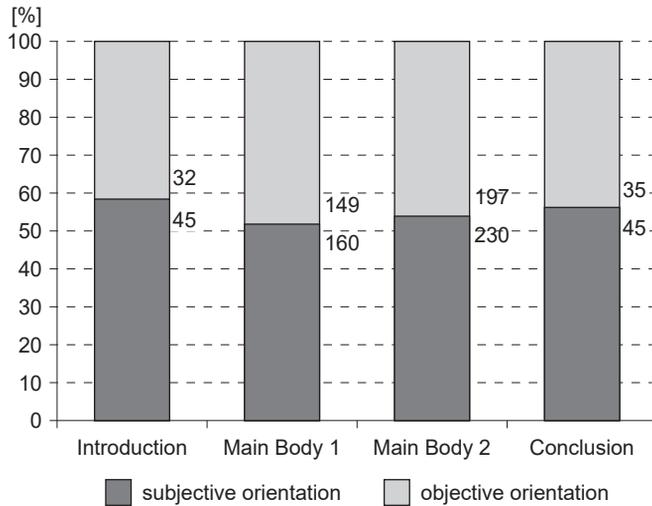


Fig. 4.28 Subjective and objective orientation in article sections: Middle-value lexical verbs (ELA)

4.2.2 Polish

Middle-value epistemic markers in PLA were almost twice as common as high-value markers. Most frequent were modal modifiers, which comprised 44% of the findings, followed by lexical verbs with 40% of the records, and two modal verbs, which accounted for 13% of the data (Table 4.26). Structures with epistemic adjective *prawdopodobny* ‘likely’ followed by an extraposed subject and nouns with a clausal complement were rare and together accounted for less than 3% of the data.

Table 4.26 Middle-value epistemic markers in PLA: An overview of categories

middle-value modality marker	epistemic records	normalized to 1 mln words
modal verbs	84 (13%)	99
modal modifiers	292 (44%)	344
adjectives	9	11
nouns	7	8
lexical verbs	266 (40%)	313
all	658	775

About 28% of the middle-value modal verb records were identified as epistemic. Among these, *mieć* ‘is to’ was more than twice as frequent as *powinien* ‘should’, as shown in Fig. 4.29. Generally, middle-value modals were only half as common in the analysed corpus as high-value modal verbs and epistemic future forms.

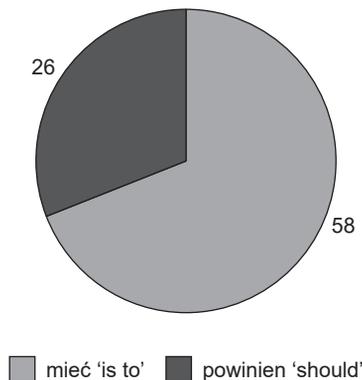


Fig. 4.29 Modal verbs as middle-value epistemic markers in PLA

Perhaps the most salient syntactic feature of this category of markers was the association with inanimate subject, noted in almost 90% of the records. As can be seen in Fig. 4.30, the preference for non-past indicative uses was also distinct, as shown by 65% of the data for middle-value modals, but less pronounced than in the case of high-value modal verbs. The association with verb *być* 'be' was weak, only half as strong as in high-value modals.

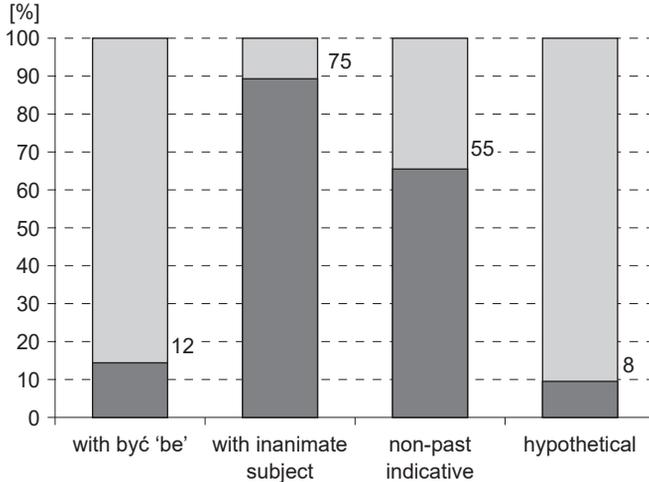


Fig. 4.30 Selected syntactic features of middle-value epistemic modal verbs in PLA

Table 4.27 presents data for each of the middle-value modals attested in PLA. As can be seen from the table, the association with inanimate subject, well-marked in both verbs, was stronger for *powinien* 'should' (104). *Mieć* 'is to' was relatively frequently used in the past tense, as demonstrated by 36% of records for this modal marker (105). It is interesting to note that in 21% of the cases, modal *mieć* 'is to' was found to concur with middle- or low-value epistemic modifiers or the hypothetical mood (106-107). Probability that something is/was not the case was expressed by negated *powinien* 'should' (108).

Apart from the epistemic sense, modal *mieć* 'is to' communicates evidential information that the modalised statement is based on another source than the speaker's direct experience, observation or inference. Sometimes it may also involve negative evaluation of the reliability of this secondary source, in the analysed material indicated in two cases by modifiers *jakoby* 'reportedly' and *z pozorą* 'seemingly' (109).

Table 4.27 Middle-value epistemic markers in PLA: Modal verbs

modality marker	all records	epistemic uses	
<i>mieć</i> 'is to'	143 (168)	58 (68)	
		3 sing (Pr, Past, Hyp)	45
		3 pl (Pr, Past, Hyp.)	13
		with inanimate subject	50
		present tense	29
		past tense	21
		hypothetical mood	8
		with passive	1
		with verb <i>być</i> 'be'	9
		with <i>prowadzić/ doprowadzić</i> 'lead to'	4
		with <i>znaczyć/ oznaczać/ konotować/ sugerować</i> 'mean/ refer to/ connote/ suggest'	4
		with <i>jakoby/ z pozoru</i> 'reportedly/ seemingly'	2
		with <i>być może</i> 'perhaps'	1
		with <i>zapewne</i> 'presumably'	3
<i>powinien</i> 'should'	162 (190)	26 (31)	
		3 sing	20
		3 pl	6
		with inanimate subject	25
		with negation	4
		with verb <i>być</i> 'be'	3
		<i>nie powinno dziwić</i> 'it should not be surprising'	3

Figures in parentheses are normalised to 1 mln words.

- (104) *W świetle naszej analizy struktury sylaby różnica między tymi sekwencjami powinna [POWINIEN^{3sing fem pres}] być jasna – w pierwszym przypadku zbitki spółgłosek cechuje rosnąca sonorność, w drugim zaś malejąca.* (SFPS2001-8; Main Body 2, at 77% of text) 'In the light of our analysis of the syllable structure, the difference between these sequences should be clear – in one case the consonant clusters are marked by increasing sonority, and in the other by decreasing sonority.'
- (105) *Granica polskiej Warmii miała [MIEĆ^{3SING FEM PAST}] przebiegać „nieco na północ od Dobrego Miasta, Jezioran i Reszła, nie sięgając samego Reszła.”* (ON2004-6; Introduction, at 7% of text) 'The border of Polish Warmia is supposed to have run 'somewhat north of Dobre Miasto, Jeziorany and Reszel, without reaching the town of Reszel''
- (106) *Ponowne jej użycie w realnej rzeczywistości ma [MIEĆ^{3SING PRES}] zapewne upamiętniać osobę twórcy i wydarzenia opisane w powieści „Ogniem i mieczem”.* (ON2002-7; Conclusion, at 76% of text) 'Its use in reality

probably is to commemorate the author and the events described in the novel *Ogniem i mieczem*'

- (107) *Jeżeli zabiegi polskich feministek miałyby* [MIEĆ^{3PL NON-MASC-PERSONAL HYP}] *temu zrównaniu w dół zapobiec przez kreowanie nowego obrazu świata, . . . były to dowód przemożnego wpływu czynnika zewnętrznego na postać języka.* (PORJ2006-11; Main Body 1, at 46% of text) 'If the efforts of Polish feminists were to prevent this fall of standards by creating a new vision of the world . . . it would be evidence of an overwhelming influence of an external factor on language'
- (108) *Niniejsza konkluzja nie powinna* [POWINIEN^{3SING FEM PRES}] *wywoływać zdziwienia, gdyż języki celtyckie i italskie, podobnie jak luzytański, były rozpowszechnione na obszarze Europy Zachodniej...* (BPTJ2002-1; Conclusion, at 96% of text) 'The present conclusion should not come as a surprise since Celtic and Italic languages, like Lusatian languages, were widespread in Western Europe...'
- (109) *Natomiast pokąsanie przez pszczoły ma* [MIEĆ^{3SING PRES}] *być jakoby przyczyną ciąży (spuchnięcie – duży brzuch)...* (EL2001-4; Main Body 2, at 51% of text) 'On the other hand, bee bites apparently are to be the cause of pregnancy (swelling – big belly)...'

An analysis of the distribution of modal *mieć* 'is to' and *powinien* 'should' across the article sections shows a preference for Main Body 2, where over 50% of the entries were located, over Main Body 1, with only 35% of the records. As shown in Fig. 4.31, more modals were found in Introduction than in Conclusion, but the figures for these two sections were generally very low.

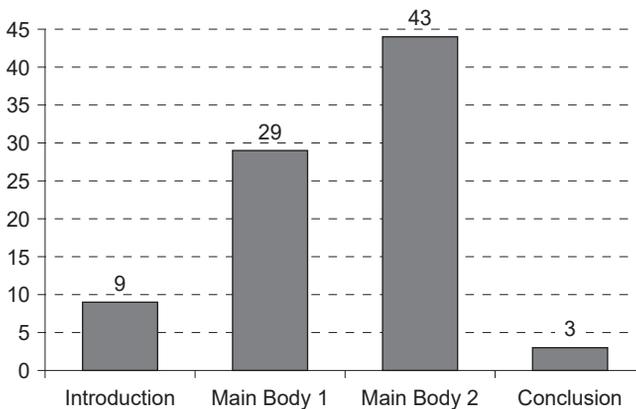


Fig. 4.31 Middle-value epistemic modal verbs in article sections (PLA)

A closer look at the distribution of individual items, presented in Table 4.28, shows that the preference for Main Body 2 over Main Body 1 was in fact limited to modal *mieć* 'is to'; 57% of the findings for *mieć* came from this segment of text. It is worth noting that in many such cases the verb occurred in passages which reported past beliefs reflected in language, as in (109), or presented the origins or evolution of connotations, as in (110-112).

Table 4.28 Distribution of middle-value epistemic modality markers in PLA: Modal verbs

	MB									Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C	
	I		R and D						<50%							>50%
	B	M	R	D												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
<i>mieć</i> 'is to'	5	1				1	17	32	51	2	58	18	33	35		
<i>powinien</i> 'should'	4					4	11	6	21	1	26	11	10	11		
all	9	1				5	28	38	72	3	84	29	43	46		

- (110) *Piękne zwierzę, jakim jest w naszym przekonaniu jeleni, u Artemidora zostało zaklasyfikowane do grupy płochliwych i nieszlachetnych, symbolizujących pospólstwo, a dla zbiegów . . . ma [MIEĆ^{3SING PRES}] być oznaką małoduszności i tchórzostwa.* (JK2003-5; Main Body 2, at 65% of text) 'The stag, in our opinion a beautiful animal, was classified by Artemidorus as timid and ignoble, and for fugitives . . . is to signify meanness and cowardice.'
- (111) *Odnawianie ciała ma głębszy sens – ma [MIEĆ^{3SING PRES}] oznaczać kształcenie moralności, rzeźbienie jej w sobie.* (POR)2005-11; Main Body 2, at 89% of text) 'The renewal of the body has a deeper meaning – it is to signify the process of developing morality, of sculpturing it in oneself'
- (112) *W późnym średniowieczu za sprawą legendy o św. Antonim Opacie została nieoczekiwanie dowartościowana . . . jako towarzyszka świętego, który okładami ze słoniny miał [MIEĆ^{3SING MASC PAST}] leczyć groźną chorobę zwaną ogniem św. Antoniego.* (JK2003-14; Main Body 2, at 73% of text) 'In the Late Middle Ages, owing to the legend of St. Anthony the Abbot, it was unexpectedly appreciated . . . as a companion of the Saint, who was to heal a dangerous disease called St. Anthony's fire with compresses of pork fat.'

Epistemic modifiers were the most numerous category of middle-value modality markers in PLA, comprising 44% of the data. In terms of numbers,

they were twice as common as Polish high-value modifiers. As can be seen in Fig. 4.32, the three most frequent markers in this group accounted for 85% of the data and comprised: *zapewne* ‘presumably’ (37%), *prawdopodobnie* ‘probably’ (27%), and *chyba* ‘probably’ (21%). *Najprawdopodobniej* ‘in all probability’, the next item in terms of frequency, accounted for 8% of the findings. The remaining four markers were comparatively rare and together constituted 7% of the material.

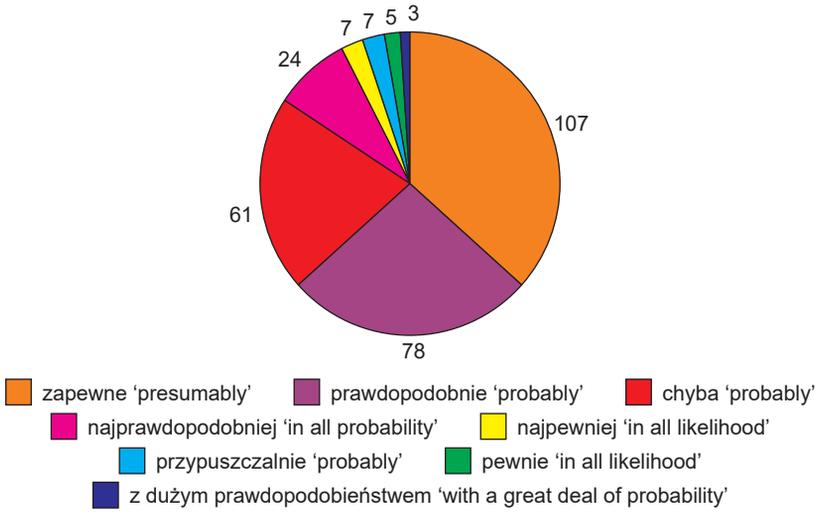


Fig. 4.32 Modal modifiers as middle-value epistemic markers in PLA

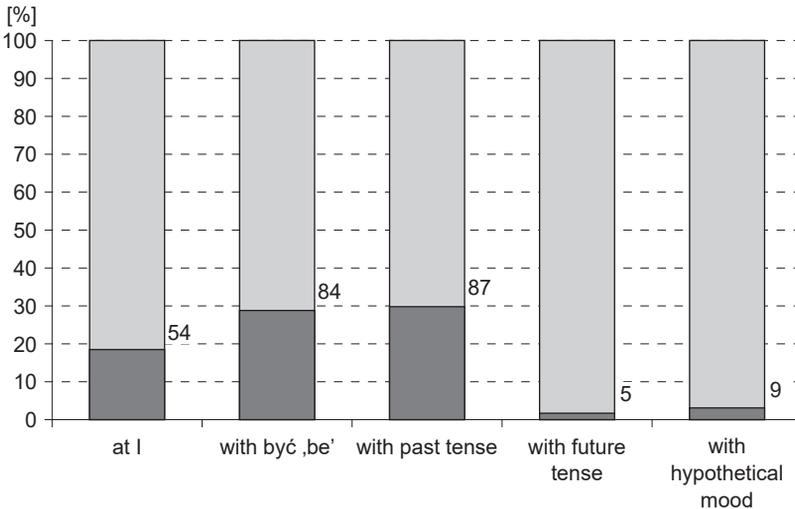


Fig. 4.33 Selected syntactic features of middle-value modal modifiers in PLA

As can be seen in Fig. 4.33, thematic position was noted in 18% of the records, as in (113) and (114), which contrasts with 38% of high-value epistemic modifiers used at the initial sentence position. The association with verb *być* 'be' was lower too and approached 30%. Compared to high-value records, only 17% of which were found in past tense clauses, middle-value modifiers were more frequently used with past forms of verbs, as shown by 30% of the data (114-116).

- (113) *Z wielkim prawdopodobieństwem można zatem przyjąć, iż wczesny prasłowiański odziedziczył z bałtosłowiańskiego także feminina na...* (ON2004-2; Main Body 2, at 61% of text) 'With a great deal of probability one can assume that early Proto-Slavic inherited from Balto-Slavic also feminine form ending in...'
- (114) *Najprawdopodobniej, w rękopiśmiennym źródle wyrazy te były [BYĆ 'be'^{3PL NON-MASC-PERSONAL PAST}] rozdzielone.* (SFPS2001-12; Main Body 1, at 50% of text) 'In all probability, in the original manuscript the words were spelt separately'
- (115) *Mógł to czynić chyba tylko Konstantyn, który miał pełne święcenia kapłańskie.* (BPTJ2002-8; Main Body 1, at 27% of text) 'This could probably be done only by Cyril, who received full ordination as a priest'
- (116) *W czasach kolonialnych, gdy Sienkiewicz pisał Listy z Afryki, mówienie o człowieku w kategorii rasy było [BYĆ 'be'^{3SING NEUT PAST}] zapewne neutralne.* (EL2002-5; Conclusion, at 65% of text) 'In colonial times, when Sienkiewicz was writing his Letters from Africa, talking about a human being in terms of race was presumably neutral'

More information about individual markers is presented in Table 4.29. In some cases, modal modifiers were used with non-epistemic modal verbs or non-inflectional verbs *można* 'one can' or *trudno* 'it is difficult to', often forming phrasemes, such as *można zapewne mówić o* 'one can presumably speak of', *należy zapewne łączyć z/ wiązać z/ przypisać czemu* 'should presumably be seen as influenced by/ be attributed to', or *trudno się chyba zgodzić z* 'it is probably difficult to agree with' (117-119). With the exception of one marker, which occurred only in phrasemes with non-inflectional verb *można* 'one can' (113), middle-value modifiers were comparatively frequently recorded in the context of past tense, as in (120). The association with the past tense was particularly strong in the case of *prawdopodobnie* 'probably' and *zapewne* 'presumably', where it reached 37% of the records (121-122). It is also worth noting that *zapewne* was comparatively frequently used in clauses which involved negation, as in (123).

Table 4.29 Middle-value epistemic markers in PLA: Modal modifiers

modality marker	epistemic records	sentence position	associations
<i>chyba</i> 'probably'	61 (72)	I 4	with negation 12 with verb <i>być</i> 'be' 17 with verb <i>mieć</i> 'have' 5 with non-epistemic modal verbs: <i>móc</i> 'can', <i>powinien</i> 'should' <i>należy/ trzeba</i> 'one should' 8 with epistemic modal verbs: <i>móc</i> 'may', <i>musieć</i> 'must' 2 with non-inflectional verb <i>można</i> 'one can' 3 <i>można chyba przyjąć</i> 'it is probably possible to assume' 2 <i>trudno się chyba zgodzić</i> 'it is probably difficult to agree' 2 with past tense 8 with hypothetical mood 1
<i>najpewniej</i> 'in all likelihood'	7 (8)	I 1	with <i>pojawić się</i> 'appear' 2 with non-epistemic modal verb <i>należy</i> 'one should' 1 with past tense 2
<i>najprawdopodobniej</i> 'in all probability'	24 (28)	I 10	with negation 1 with verb <i>być</i> 'be' 5 with verb <i>mieć</i> 'have' 1 with <i>pochodzić od/ powstać</i> 'originate from/ in' 6 with non-epistemic modal verbs: <i>móc</i> 'can', <i>należy</i> 'one should' 2 with epistemic modal verb <i>musieć</i> 'must' 1 with past tense 6
<i>pewnie</i> 'in all likelihood'	5 (6)		with negation 1 with verb <i>być</i> 'be' 2 with non-epistemic modal verb <i>powinien</i> 'should' 1 with past tense 3
<i>prawdopodobnie</i> 'probably'	78 (92)	I 23	with negation 4 with verb <i>być</i> 'be' 20 with verb <i>mieć/ posiadać</i> 'have' 5 with <i>pochodzić od/ powstać/ wywodzić się</i> 'originate from/ in' 10 with past tense 29 with future tense 3 with hypothetical mood 3

<i>przypuszczalnie</i> 'probably'	7 (8)	I	1	with verb <i>być</i> 'be' 3 with <i>pochodzić od</i> 'originate from' 1 with non-epistemic modal verb <i>należy</i> 'one should' 1 with past tense 1
<i>z dużym</i> <i>prawdopodobieństwem</i> 'with a great deal of probability'	3 (4)	I	2	with verbs <i>przyjąć/ uznać/ założyć</i> 'assume' 3 with non-inflectional verb <i>można</i> 'one can' 3
<i>zapewne</i> 'presumably'	107 (126)	I	13	with negation 8 with verb <i>być</i> 'be' 35 with verb <i>mieć</i> 'have' 5 with non-epistemic modal verbs: <i>mieć</i> 'is to', <i>należy</i> 'one should' 7 with epistemic modal verb <i>musieć</i> 'must' 1 with non-inflectional verb <i>można</i> 'one can' 3 with <i>pochodzić od/ powstać/ pojawić się</i> 'originate from/ in, appear' 5 with past tense 40 with future tense 2 with hypothetical mood 5

Figures in parentheses are normalised to 1 mln words.

- (117) *Zaprezentowane tu w niewielkim wyborze teksty pokazują, że można zapewne mówić o jednostkach języka (a) będących mickiewiczyzmami realnie oraz (b) będących mickiewiczyzmami jedynie genetycznie...* (PORJ2005-16; Conclusion, at 91% of text) 'The modest selection of texts presented here shows that one can presumably speak of language units which are (a) Mickiewicz's winged words in reality and (b) Mickiewicz's winged words only genetically'
- (118) *To, że mimo tak surowych wymagań manicheizm mógł stać się religią masową . . . , przypisać należy najpewniej istnieniu kasty słuchaczy, która stanowiła silne zaplecze materialne...* (JK2003-3; Main Body 2, at 64% of text) 'The fact that in spite of these strict requirements Mainichaeism succeeded in becoming widespread . . . should in all likelihood be attributed to a caste of hearers, which provided a strong financial support'
- (119) *Trudno się chyba jednak zgodzić z pewną ostatecznością i skrajnością takich poglądów.* (ON2003-3; Introduction, at 9% of text) 'However, it is probably difficult to agree with a certain finality and extreme nature of such views.'

- (120) *Szczególnie podkreślić należy fakt, że nie tylko zapoczątkowała ona te jakże ważne studia, ale przypuszczalnie przez wiele lat pracowała w całkowitym odosobnieniu intelektualnym.* (SFPS2004-4; Main Body 1, at 45% of text) 'It should be particularly emphasized that not only did she start these important studies but for many years she was working in complete intellectual isolation as well.'
- (121) *Prawdopodobnie, nie przeprowadzono również badań eksperymentalnych.* (SMER2004-2; Main Body 1, at 39% of text) 'Probably, no experimental research was conducted either'
- (122) *Dysymilacja taka musiała chyba dokonać się jeszcze przed rozpowszechnieniem się mazurzenia, zapewne w samych początkach XV w...* (ON2002-5; Main Body 1, at 6% of text) 'This dissimilation probably must have taken place before mazurzenie became widespread, presumably at the very beginning of the 15th c'
- (123) *Taki ustrój nie jest już jednak chyba demokracją, lecz wydaje się przezwyciężeniem ograniczeń, które marksizm jej przypisywał.* (PORJ2003-6; Main Body 2, at 65% of text) 'However, this type of government is probably no longer democracy, but seems to overcome the limitations that were attributed to it by Marxism'

If we turn to the distribution of middle-value modal modifiers in PLA and compare it to that of high-value modifiers, we obtain a reversed picture, although the difference between the two segments of the main part of the article was not so strongly marked. Fig. 4.34 shows that 43% of the markers were used in Main Body 1, as contrasted with 38% which occurred in Main Body 2. With regard to Introduction and Conclusion, middle-value modifiers were more common in the latter, with 6% of the records coming from the first and 13% from the last article section.

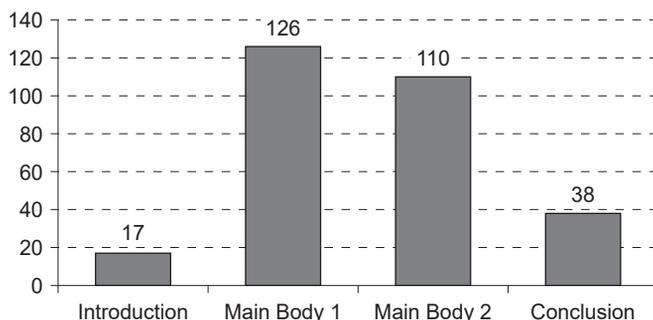


Fig. 4.34 Middle-value modal modifiers in article sections (PLA)

As can be seen in Table 4.30, the preference for Main Body 1 over Main Body 2 and Conclusion over Introduction was shared by the three most frequent modal modifiers: *zapewne*, *prawdopodobnie*, and *chyba*.

Table 4.30 Distribution of middle-value epistemic modality markers in PLA: Modal modifiers

	I	MB							Total for MB	C	X	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
		B	M	R and D		<50%	>50%								
				R	D										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<i>chyba</i> 'probably'	4		3	1		5	25	16	50	7		61	29	21	28
<i>najpewniej</i> 'in all likelihood'							4	2	6	1		7	4	2	3
<i>najprawdopodobniej</i> 'in all probability'	3					2	8	8	18	2	1	24	8	10	12
<i>pewnie</i> 'in all likelihood'							2	3	5			5	2	3	3
<i>prawdopodobnie</i> 'probably'	3			3		2	36	28	69	6		78	39	30	36
<i>przypuszczalnie</i> 'probably'							3	4	7			7	3	4	4
<i>z dużym prawdopo- dobieństwem</i> 'with a great deal of probability'								2	2	1		3		2	3
<i>zapewne</i> 'presumably'	7	1				1	40	37	79	21		107	41	38	59
all	17	1	3	4		10	118	100	236	38	1	292	126	110	148

Epistemic adjectives with an extraposed subject and nouns with a clausal complement comprised less than 3% of the data. The adjectival records were limited to one marker *prawdopodobne* 'likely' and accounted for over 50% of the findings for this group of markers. Epistemic expressions with nouns involved items *wrażenie* 'impression' (about 30%) and — very rare — *prawdopodobieństwo* 'probability'. As can be seen in Table 4.31, adjective *prawdopodobne* 'likely' was always used with intensifying adverbs *wielce* 'greatly', *wysoce* 'highly', or *bardzo* 'very' (124), and often introduced by an epistemic lexical verb *wydaje się* 'it seems' (125). Intensifying adverbs were also used in expressions with noun *prawdopodobieństwo* 'probability', as in (126). It is worth noting that among the expressions with *wrażenie* 'impression', none actually in-

volved 1st person subject. All the recorded cases were impersonal structures, as in (127). Thus, of the 16 records with epistemic adjectives and nouns, all were identified as objective. All expressions with *wrażenie* ‘impression’ were found to involve stable collocations *odnieść wrażenie* ‘have the impression’ or *trudno oprzeć się wrażeniu* ‘one finds it difficult to resist the impression.’

Table 4.31 Middle-value epistemic markers in PLA: Adjectives and nouns

modality marker	epistemic records	associations	
<i>prawdopodobne</i> [PRAWDOPODOBNY ^{NEUT}] ‘likely’ <i>Jest A, że</i> ‘It is A that’	9 (11)	with <i>jest</i> ‘it is’ with <i>wydaje się</i> ‘it seems’ with intensifying adverbs	5 4 9
<i>prawdopodobieństwo</i> ‘probability’ <i>Jest N, że</i> ‘There is N that’	2	with intensifying adjectives	2
<i>wrażenie</i> ‘impression’ <i>Mam N, że</i> ‘I have N that’; <i>Można mieć N, że</i> ‘one may have N that’	5 (6)	<i>odnosi się/ można odnieść N, że</i> ‘one has/ may have N that’ <i>trudno oprzeć się N, że</i> ‘one finds it difficult to resist N that’	2 3

Figures in parentheses are normalised to 1 mln words.

- (124) *Jeśli słowo tonie znajduje się w bezpośrednim sąsiedztwie słowa dobrym, to jest wysoce prawdopodobne, że reprezentuje ono formę wyrazową rzeczownika TON...* (BPTJ2002-12; Conclusion, at 91% of text) ‘If the word tonie occurs in the direct vicinity of dobrym, it is highly likely that it represents a word form of the noun TON...’
- (125) *Wydaje się [WYDAWAĆ SIĘ ‘seem’^{3SING PRES}] bardzo prawdopodobne, że wykształcą się różne ‘alfabety’ migowe, odmienne dla różnych języków.* (PORJ2006-5; Main Body 2, at 68% of text) ‘It seems very likely that various sign alphabets will develop, different for different languages’
- (126) *ze względu na formę sufiksalną istnieje [ISTNIEĆ ‘exist’^{3SING PRES}] duże prawdopodobieństwo, że nazwa pochodzi od...* (ON2003-4; Main Body 2, at 75% of text) ‘because of the suffixal form, there is a great probability that the name come from...’
- (127) *Trudno się oprzeć wrażeniu, że przy kauzatywnej interpretacji zdania podrzędnego (35a) mamy do czynienia ze swoją przestawką...* (BPTJ2001-2; Main Body 2, at 93% of text) ‘One finds it difficult to resist the impression that in the case of causative interpretation of the subordinate clause (35a), we have to deal with a peculiar reposition...’

As can be seen in Table 4.32, expressions with adjectives and nouns were more common in the second part of the article — Main Body 2 and Conclu-

sion — with only two examples attested in Main Body 1. However, the figures are too low to look for any patters of distribution.

Table 4.32 Distribution of middle-value epistemic modality markers in PLA: Adjectives and nouns

1	MB								Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
	I		R and D				<50%	>50%						
	B	M	R	D	R	D								
	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>prawdopodobne</i> 'likely' (<i>Jest A, że</i> 'It is A that')						2	2	2	6	3	9	2	4	7
<i>prawdopodobieństwo</i> 'probability' (<i>Jest N, że</i> 'There is N that')						1		1	2		2		2	2
<i>wrażenie</i> 'impression' (<i>Mam N, że</i> 'I have N that')								4	4	1	5		4	5
Total						3	2	7	12	4	16	2	10	14

Lexical verbs were the second most frequently attested group of middle-value markers in PLA, with 40% of the records. Fig. 4.35 demonstrates that of the seven verbs taken into consideration, by far the most common was *wydawać się* 'seem', which accounted for 47% of the findings. *Sądzić* 'think' and *przypuszczać* 'suppose' comprised 23% and 16% of the data respectively, followed by *uważać* 'believe' (6%) and *zdawać się* 'seem' (4%). The last two items, *spodziewać się* 'expect' and *myśleć* 'think', together accounted for about 4% of the records.

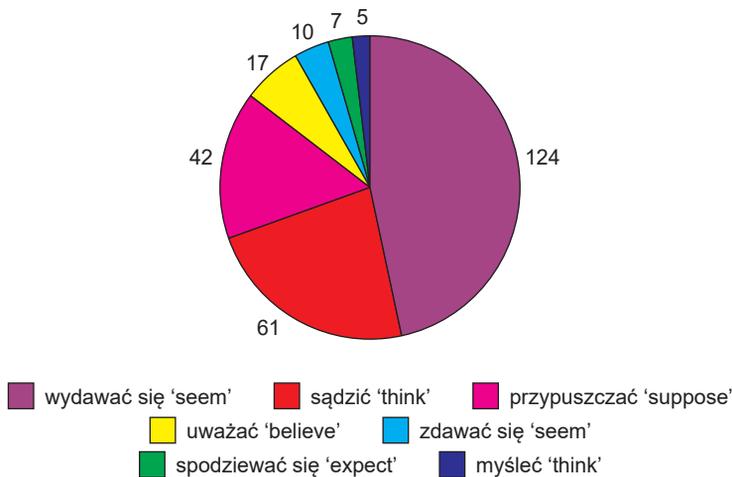


Fig. 4.35 Lexical verbs as middle-value epistemic markers in PLA

Table 4.33 Middle-value epistemic markers in PLA: Lexical verbs

verb	epistemic uses	
<i>myśleć</i> 'think'	5 (6)	
	<i>Myślę, że</i> 'I think that' type	5
	with negation in <i>that</i> -clause	1
	with present tense in <i>that</i> -clause	5
<i>przypuszczać</i> 'suppose'	42 (49)	
	<i>Należy przypuszczać, że</i> 'it is reasonable to suppose that' type	8 (19%)
	parentheticals	3
	with past tense in <i>that</i> -clause	3
	with hypothetical mood in <i>that</i> -clause	1
	<i>Można przypuszczać, że</i> 'one can suppose that' type	24 (57%)
	parentheticals	6
	<i>można przypuszczać</i> 'one can suppose'	20
	<i>można by przypuszczać</i> 'one could suppose'	1
	<i>wolno przypuszczać</i> 'one is allowed to suppose'	2
	<i>są podstawy by przypuszczać</i> 'there are reasons to suppose'	1
	with negation in <i>that</i> -clause	3
	with past tense in <i>that</i> -clause	11
	<i>Pozwala to przypuszczać, że</i> 'This allows one to suppose that'	3
	with past tense in <i>that</i> -clause	1
	<i>Przypuszcza się, że</i> 'It is supposed that' type	2
	with past tense in <i>that</i> -clause	1
	<i>Przypuszczam, że</i> 'I suppose that' type	5
	parentheticals	3
	with past tense in <i>that</i> -clause	2
<i>sądzić</i> 'think'	61 (72)	
	<i>Należy sądzić, że</i> 'it is reasonable to think that' type	3
	with past tense in <i>that</i> -clause	2
	<i>Można sądzić, że</i> 'one can think that' type	9
	parentheticals	3
	<i>można by sądzić</i> 'one could think'	1
	with negation in <i>that</i> -clause	1
	with past tense in <i>that</i> -clause	2
	<i>Pozwala to sądzić, że</i> 'This allows one to think that' type	4
	<i>pozwala to sądzić</i> 'it makes it possible to think'	3
	<i>każe to sądzić</i> 'it makes it necessary to think'	1
	with past tense in <i>that</i> -clause	3
	<i>Sądzi się, że</i> 'It is thought that' type	2
	parentheticals	1
	with negation in <i>that</i> -clause	1
	<i>Sądzę, że</i> 'I think that' type	43 (70%)
	parentheticals	13
<i>sądzę</i> 'I think'	41	

	<i>mamy prawo sądzić</i> 'we are entitled to think'	1
	<i>ośmielam się sądzić</i> 'I dare to think'	1
	with negation in <i>that</i> -clause	9
	with past tense in <i>that</i> -clause	3
	with adverb <i>osobiście</i> 'personally'	1
<i>spodziewać się</i> 'expect'	7 (8)	
	<i>Należy się spodziewać, że</i> 'it is reasonable to expect that' type	1
	<i>Można się spodziewać, że</i> 'one can expect that' type	5
	<i>można by/ byłoby się spodziewać</i> 'one could expect'	2
	with negation in <i>that</i> -clause	1
	<i>Spodziewam się, że</i> 'I expect that' type	1
<i>uważać</i> 'believe'	17 (20)	
	<i>Uważam, że</i> 'I believe that' type	17
	parentheticals	1
	with negation in <i>that</i> -clause	1
	with past tense in <i>that</i> -clause	3
	with hypothetical mood in <i>that</i> -clause	1
<i>wydawać się</i> 'seem'	124 (146)	
	<i>Wydaje się, że</i> 'it seems that' type	107 (86%)
	parentheticals	36
	<i>wydawałoby się</i> 'it would seem'	2
	with negation in <i>that</i> -clause	19
	with past tense in <i>that</i> -clause	16
	with hypothetical mood in <i>that</i> -clause	3
	<i>Może się wydawać, że</i> 'it may seem that' type	13
	parentheticals	3
	<i>mogłoby się wydawać</i> 'it might seem'	10
	with past tense in <i>that</i> -clause	2
	<i>Wydaje mi się, że</i> 'it seems to me that' type	4
<i>zdawać się</i> 'seem'	10 (12)	
	<i>Zdaje się, że</i> 'it seems that' type	10
	parentheticals	8
	<i>zdawałoby się</i> 'it would seem'	2
	with negation in <i>that</i> -clause	1
	with past tense in <i>that</i> -clause	2

Figures in parentheses are normalised to 1 mln words.

More data concerning individual verbs are presented in Table 4.33. The structures analysed involved: impersonal forms with non-epistemic modal verb *należy* 'should' (128) and non-inflectional verb *można* 'one can' (129), impersonal structures with reflexive pronoun *się* following 3rd person singular neutrum form of the verb in the present tense (130), expressions with verb *pozwolić* 'allow' of the *to pozwala V* 'this allows one to V' type (131), and

forms with 1st person subject (132). With regard to *wydawać się* and *zdawać się* 'seem', the search included constructions with and without 1st person pronoun in the object position (133-134).

- (128) *z uwagi jednak na to, iż język bułgarski nie toleruje tego typu grup spółgłoskowych w wygłosie, należy sądzić, iż ta druga forma pojawiła się wskutek błędu drukarskiego.* (ON2003-8; Main Body 2, at 63% of text) 'however, taking into account the fact that Bulgarian does not accept such consonantal clusters at the end of the word, it is reasonable to think that the second form appeared as a result of printing error'
- (129) *Można się spodziewać, że materiał dokumentujący „autostereotyp” zezwoli na próbę rekonstrukcji tego, co w opinii publicznej tworzy zespół tak zwanych „wartości”.* (EL2002-2; Introduction, at 6% of text) 'One can expect that material documenting this self-stereotype will make it possible to reconstruct whatever the public opinion holds to form the set of so called values'
- (130) *Przypuszcza się, że twórcą cyrylicy był Klemens Ochrydzki, bliski uczeń Konstantyna-Cyryla.* (BPTJ2002-8; Main Body 2, at 66% of text) 'It is supposed that Cyrillic alphabet was created by Clement of Ohrid, a close disciple of Cyril.'
- (131) *Pozwala to sądzić, że agresja jest komponentem silnych emocji negatywnych, które można opisać w kontekście: osoby ich doświadczającej, przyczyny tych doświadczeń, ich przebiegu oraz konsekwencji, jakie one wywołują.* (JK2005-13; Introduction, at 10% of text) 'This allows one to think that aggression is a component of strong negative emotions, which can be described in terms of: the person who experiences them, the reasons for the experience, their development, and their consequences.'
- (132) *Myszę, że można tu także zaliczyć nazwy wyrobów nabiałowych.* (PORJ2006-10; Introduction, at 6% of text) 'I think one can include here also names of dairy products.'
- (133) *wyszedł też z użycia jego synonim . . . , choć zdaje się, że w nowszym słownictwie kulinarnym powraca.* (SFPS2005-5; Main Body 2, at 62% of text) 'its synonym . . . is no longer used either, although it seems that it is coming back in newer culinary vocabulary'
- (134) *Wydaje mi się, iż jest to uprawnione.* (JK2005-18; Main Body 1, at 20% of text) 'It seems to me that it is justified.'

The predominant orientation in this group of markers was objective, as demonstrated by 72% of the records (128-131, 133). Subjective uses were comparatively rare (132, 134), the greatest number of records involving verbs

sądzić ‘think’ and *uważać* ‘believe’ (135). *Uważać* ‘believe’ and *myśleć* ‘think’ were used subjectively.

In about 21% of the records, the lexical verb was used with the non-inflectional verb *można* ‘one can’, which appears to additionally objectify the epistemic judgment (129), in the hypothetical mood, which renders the statement more cautious (136), or with the modal verb *móc* ‘may’, which in the material examined signalled concession (137). These qualified uses were typically associated with objective orientation. In two interesting subjective examples, the epistemic verb *sądzić* ‘think’ was introduced by *ośmielać się* ‘dare’ (138) and *mamy prawo* ‘we are entitled to’ (139), the first of which can be seen as a courteous expression which adds tentativeness to the claim, and the other as a device foregrounding the fact that there are some objective reasons for the judgment.

In 29% of the cases, the lexical verbs occurred as parentheticals. This use was particularly frequent in *wydaje się/ zdaje się* ‘seem’, as indicated by 35% of the records for these two verbs, and *przypuszczać* ‘suppose’ and *sądzić* ‘think’, with 29% and 28% of records respectively (140-141). In 78% of the parenthetical records, the orientation was objective.

- (135) *Uważamy, że zapisy odzwierciedlające wymowę można wykorzystać nie tylko określając: gdzie powstała rękopiśmienna księga, z której korzystano w tłoczni Fiola, ale też: jak ona powstała.* (SFPS2001-12; Conclusion, at 95% of text) ‘We believe that notes reflecting the pronunciation may be used not only to determine where the manuscript used in Fiol’s print shop came from, but also in what circumstances it originated.’
- (136) *można byłoby się spodziewać, że w językach południowo słowiańskich istnieją dwie różne tendencje: jedna idąca w kierunku zmniejszania ilości czasów . . . , druga związana z zanikiem . . . aspektu.* (SFPS2001-10; Introduction, at 9% of text) ‘one could expect that in the South Slavic languages there are two different tendencies: one limiting the number of tenses . . . and the other connected with the disappearance of aspect.’
- (137) *Mogłoby się zatem wydawać, że po przełomie roku 1989 zostały stworzone warunki, by całkowicie zerwać z rytuałem w wypowiedziach publicystycznych. . . . Analizowany materiał pozwala jednak zaryzykować tezę, iż... (EL2001-2; Main Body 2, at 58% of text) ‘It might seem then that at the turn of 1989 conditions were created to totally break with the ritual in opinion journalism . . . Still, the analysed material makes it possible to suggest that...’*
- (138) *Ośmielam się sądzić, że połączenie obu okoliczności: precyzyjnego (czasem etymologicznego) znaczenia słów i wiara w magiczną moc życzeń*

... *nie jest bynajmniej powszechna*. (JK2005-2; Main Body 2, at 56% of text) 'I dare to think that the combination of both circumstances: the precise (sometimes etymological) meaning of words and the faith in the magic power of wishes is by no means common.'

(139) *Mamy prawo sądzić, że zapis taki odbija wymowę...* (SFPS2001-12; Main Body 1, at 37% of text) 'We are entitled to think that this spelling reflects the pronunciation...'

(140) *Podłoże czyste graficzne jest jednak – jak się wydaje – częstszą przyczyną wahań l/ł w źródłach pisanych.* (ABAS2005-3; Conclusion, at 83% of text) 'Still, purely graphic factors are – as it seems – a more frequent reason for l/ł vacillation in written sources.'

(141) *Niektóre z tych sądów – jak należy przypuszczać – będą się jednak powtarzały.* (EL2002-5; Introduction, at 13% of text) 'Still, some of these opinions – as it is reasonable to suppose – will reappear'

Table 4.34 Distribution of middle-value epistemic modality markers in PLA: Lexical verbs

	I	MB							Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
		B	M	R and D		<50%	>50%							
				R	D									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>myśleć</i> 'think'	1									4	5			4
<i>przypuszczać</i> 'suppose'	6				1	1	10	16	28	8	42	10	18	26
<i>sądzić</i> 'think'	11		1			1	22	15	39	11	61	23	16	27
<i>spodziewać się</i> 'expect'	2						3	2	5		7	3	2	2
<i>uważać</i> 'believe'		1				1	1	5	8	9	17	2	6	15
<i>wydawać się</i> 'seem'	11	2				7	49	41	99	14	124	51	48	62
<i>zdawać się</i> 'seem'			1			1	2	4	8	2	10	3	5	7
all	31 12%	3	2		1	11	87	83	187	48 18%	266	92 >34%	95 >35%	143

As can be seen in Table 4.34, which presents the distribution of epistemic lexical verbs across article sections, the figures for Main Body 1 and Main Body 2 were found to be similar. Indeed the data for individual verbs show different tendencies, with some items being more common in the first half of

the main body (e.g. *sądzić* ‘think’), and others more frequent in the second half (e.g. *przypuszczać* ‘suppose’). With regard to Introduction and Conclusion, the verbs tended to be slightly more common in the latter section. The differences between individual markers, although also present, were not so sharply marked as in the case of Main Body records.

With regard to the distribution of subjective and objective uses of this group of markers, the dominant objective orientation was found to prevail in all the segments (Fig. 4.36), but the proportion of subjective uses was relatively high in Conclusion (46%) and Introduction (35%), as contrasted with 18% in Main Body 2.

In 19% of the records for epistemic lexical verbs, the main verb in the complement clause was in the past tense.

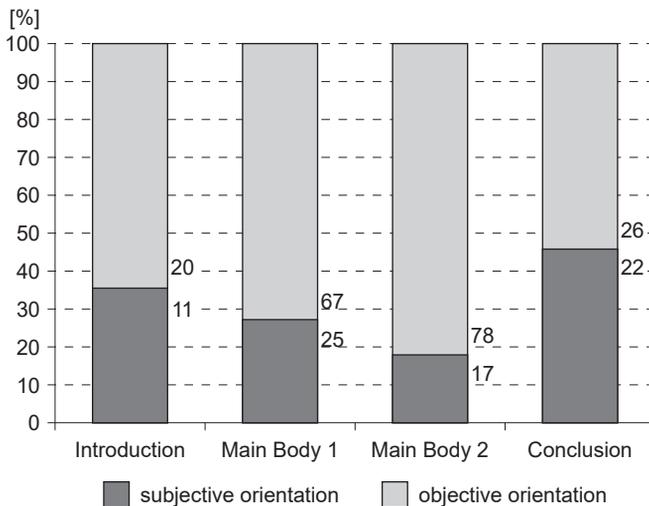


Fig. 4.36 Subjective and objective orientation in article sections: Middle-value lexical verbs (PLA)

4.2.3 Discussion

A comparison of the use of middle-value epistemic modality markers in English and Polish articles shows that they were more frequent in English, where 920 tokens were found per one million words, as contrasted with 775 tokens in Polish texts. This gives a ratio of approximately 6 to 5, making the difference much less conspicuous than in the case of high-value markers (2.7 to 1). As can be seen in Fig. 4.37, in both sets of texts the most common cat-

egories were lexical verbs and modal modifiers, but if in English lexical verbs virtually dominated the findings, approaching 50% of the records, in Polish the results for modifiers and verbs were more balanced, with the former somewhat more frequent than the latter. As regards modal verbs, the third group of markers in order of frequency, in English articles they were almost as frequent as modifiers, approaching one fourth of the records; their role in the Polish corpus was more limited, with the findings practically divided between modifiers and lexical verbs.

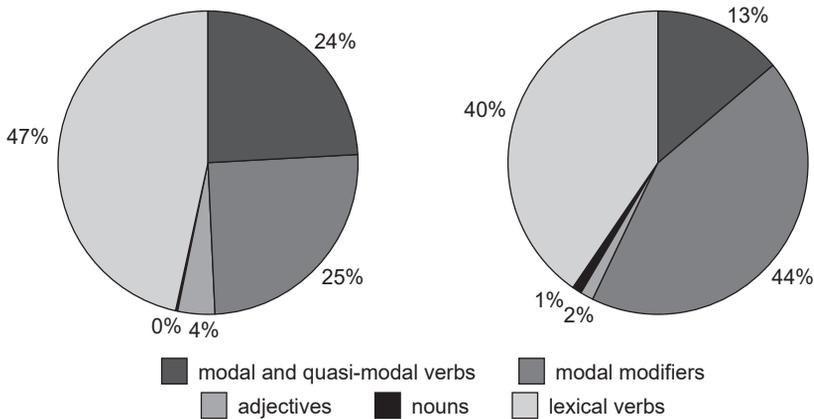


Fig. 4.37 Categories of middle-value epistemic markers in ELA (left) and PLA (right)

Fig. 4.38 demonstrates that in terms of the number of markers, modal verbs and lexical verbs were distinctly more common in English than in Polish, the difference reaching 2.3 to 1 for modals and 1.4 to 1 for other epistemic verbs. This applies also to expressions with epistemic adjectives and nouns, which were twice as frequent in English. By contrast, modal modifiers were 1.5 times more frequent in Polish texts than in articles by English-speaking authors.

With regard to realisation of modal meanings, in ELA explicit and implicit forms were found with similar frequency, while in PLA, where lexical verbs were less common and epistemic adverbs more popular, implicit realisations were approximately 25% more frequent than explicit realisations (Fig. 4.39). In terms of orientation, again the figures for ELA turned out to be similar, as shown in Fig. 4.39, but in PLA objective forms were more than three times more frequently attested than subjective uses. It is worth noting that the difference in the preferred orientation between the two corpora was related not only to the greater number of modal verbs in ELA and modal modifiers in

PLA but also to the use of lexical verbs, which in ELA received subjective orientation in 54% of cases, while in Polish only in 28%.

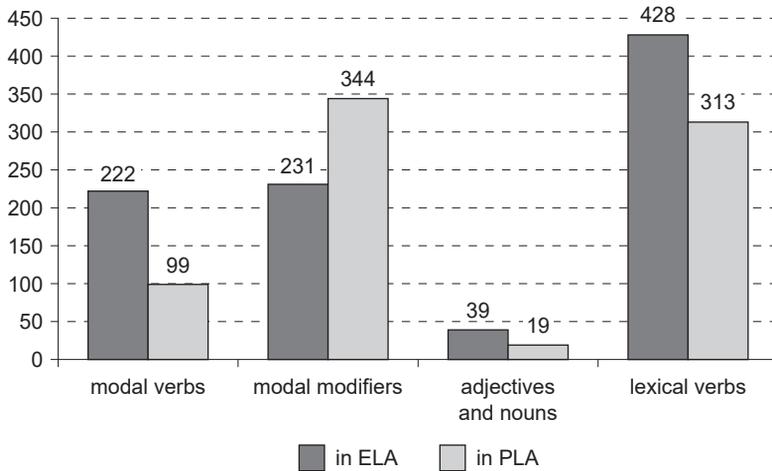


Fig. 4.38 Middle value modal verbs, modifiers, adjectives and nouns, and lexical verbs in ELA and PLA (Figures normalised to 1 mln words.)

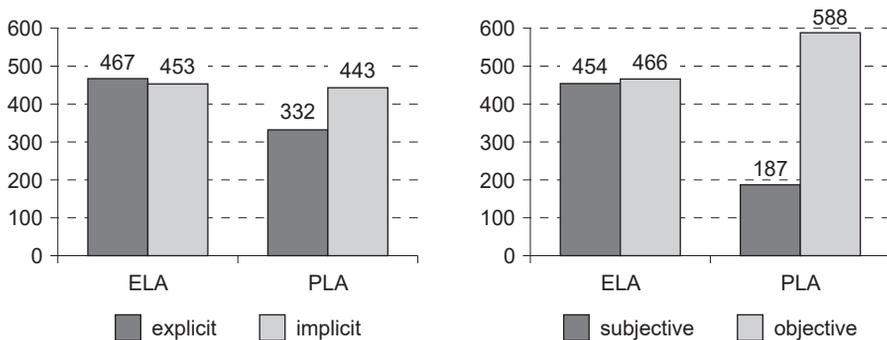


Fig. 4.39 Middle-value modal meanings in ELA and PLA: explicit and implicit (left); subjective and objective (right) (Figures normalised to 1 mln words.)

If we look at the distribution of middle-value markers in the two sets of texts (Fig. 4.40), we see that in ELA there was a marked tendency for middle-value epistemic meanings to appear in the second rather than the first part of the main body of text, while the frequencies for Introduction and Conclusion were similar. In the Polish corpus, the values for the two parts of Main Body were comparable; instead, there was a difference in the number of records from Introductions and Conclusions, with more markers located in the

final part of text. It is also worth noting that if individual text segments in ELA and PLA are compared, Introductions are in fact similar in terms of the relative frequency of middle-value modality markers, as are first segments of the main body (Main Body 1).

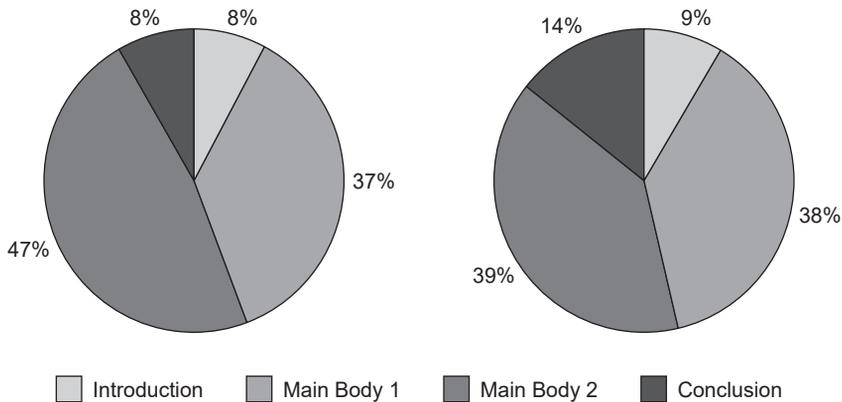


Fig. 4.40 Distribution of middle-value modality markers in article sections in ELA (left) and PLA (right)

As can be seen in Table 4.35, Conclusion is the only text segment where Polish authors used more middle-value markers than their Anglophone colleagues. The difference is well marked, the ratio reaching 1 to 1.5 for English and Polish data respectively, and observable in all categories of markers except modal verbs, which were considerably more frequent in the final sections of English texts. The greatest similarity between the two sets of texts, both in terms of the number of markers and the categories involved, could be seen in Introductions.

Middle-value markers expressed probability that something was not the case in 9% of ELA results and in 10% of Polish data. In English negative probability was most frequently conveyed by lexical verbs, as demonstrated by 53% of the records, in particular by verbs *think* (especially in subjective orientation), *seem* and *appear*, as in (142)-(144). This was to be expected since lexical verbs were found to be the most frequently attested category of middle-value markers in ELA. Interestingly though, lexical verbs were also the most common markers of negative probability in Polish texts, recorded in 52% of the data, while modal modifiers, the most frequent category of markers in PLA, accounted for 39% of the findings for negative probability. The most frequent markers included *wydawać się* 'seem' (145), *sądzić* 'think' (especially in subjective orientation, as in 146) and *chyba* 'probably' (147).

Table 4.35 Distribution of middle-value epistemic modality markers by categories in ELA and PLA

	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
(quasi-) modal vbs	3	<10	7	4	4	6	12	71	>86	<190	19		222	86	104	123	
modal modifiers	1	21	6	1	6	4	17	72	87	193	15	1	231	85	108	123	
adjectives and nouns		3	1	2		1	4	<12	12	32	4		39	15	17	21	
lexical verbs		37	6	2	8	9	11	131	184	350	38	2	428	147	204	242	
all in ELA	4	71	20	9	18	20	44	286	369	766	76	3	920	333	433	509	
modal vbs		10	1				6	33	45	85	4		99	34	51	55	
modal modifiers		20	1	4	5		12	139	118	278	45		344	149	130	175	
adjectives and nouns							4	2	8	14	5		19	2	12	17	
lexical verbs		36	4	2		1	13	102	98	220	57		313	108	112	169	
all in PLA		66	6	6	5	1	35	276	269	597	111		775	293	305	416	

Figures are normalised to 1 mln words.

- (142) *I think that such an account will not work.* (LP2005-6; Main Body 2, at 72% of text)
- (143) *However, it seems that it was not always an affix.* (LS2001-4; Main Body 2, at 75% of text)
- (144) *It would appear that the choice of repair is often not predictable in loan-words cross-linguistically, although there may be facts about the native phonology or the very nature of loanword adaptation which influence an adapter's decision* (L2006-7; Main Body 1, at 26% of text)
- (145) *Wydaje się, że żeński odpowiednik tego stereotypu nie ma aż tak silnych konotacji seksualnych i przez to może zyskiwać nieco większą akceptację społeczną.* (SFPS2004-5; Main Body 2, at 69% of text) 'It seems that the female counterpart of this stereotype does not have so strong sexual connotations and may therefore win slightly more social approval'
- (146) *Osobiście sądzę, że ani jedno, ani drugie możliwe nie jest, i dlatego koncepcję Godłowskiego uważam za błędną.* (BPTJ2001-3; Main Body 2,

at 93% of text) ‘Personally I think that neither is possible and so I regard Godłowski’s proposal as mistaken.’

- (147) *Ta już chyba złorzeczeniem nie jest, ale też życzenie jest raczej gorzkie i zawiera więcej skargi na swój los niż oczekiwania pomyślnego żywota dla adresata.* (JK2005-2; Main Body 2, at 72% of text) ‘This one probably is not a malediction but the wish is rather bitter and involves more complaint about one’s fate than expectation of good fortune for the addressee.’

In terms of distribution, negative probability tended to be expressed with the same frequency in English and Polish Introductions; similar were also the data obtained for Main Body 2, as shown in Table 4.36. With regard to Main Body 1, probability that something was not the case was slightly more often expressed in the English texts. By contrast, final sections of Polish articles were found to contain more markers of negative probability than English Conclusions. It is also worth noting that in Polish texts they outnumbered negative probability markers in Introductions by two to one, while in English the situation was reversed.

Table 4.36 Distribution of negative probability in ELA and PLA

	I	Total for MB	C	Total	MB1	MB2	MB2 + C
1	2	3	4	5	6	7	8
negative probability in ELA	6	77	3	86	38	39	42
negative probability in PLA	6	62	13	81	26	36	49

Figures are normalised to 1 mln words.

In 10% of English records and in 11% of Polish findings for middle modal values, epistemic markers received additional emphasis: by fronting (148-149), by use of intensifying adverbs (150-151), or by combination with non-epistemic modality or evaluative adjectives (152-153). In both groups of texts, fronting of a modal modifier was the most common emphatic device. More frequent were cases where middle-value epistemic markers occurred with other devices which signal tentativeness or lack of certainty: in harmonic combinations or with low-value epistemic markers (154-155), with hypothetical mood (156-157), or with non-epistemic modality markers (158-159). These occurrences comprised 15% of English and 16% of Polish middle-value records.

- (148) *Probably the analogy is neurally expedited and probably it was a critical ingredient in human cognitive evolution, although these topics can wait.* (LS2002-9; Introduction, at 4% of text)
- (149) *Zapewne wielokulturowość modyfikuje myślenie stereotypowe.* (EL2002-2; Main Body 1, at 22% of text) ‘Presumably multiculturalism modifies stereotypical thinking.’
- (150) *if the left periphery of vP is structurally akin to CP, then it is highly plausible that it is this CP structure which lends phasal status to these elements...* (L2003-5; Main Body 2, at 73% of text)
- (151) *Jest wielce prawdopodobne, że ps. samogłoski . . . jako odrębne fonemy istniały w okresie cyrylometodejskim i bezpośrednio po nim.* (BPTJ2002-8; Conclusion, at 83% of text) ‘It is highly likely that pseudo-vowels . . . were present as separate phonemes in the Cyril-Methodius period and immediately after it’
- (152) *It is reasonable to assume that a non-occurring event can only be conceptualised in contrast to a related event that does occur.* (L2006-3; Main Body 2, at 85% of text)
- (153) *Analiza charakteryzującej je leksyki każe sądzić, że mogły one powstać bądź na obszarach słowińskich, bądź też na przylegających do nich zachodnich krańcach ówczesnej kaszubszczyzny.* (SFPS2001-5; Conclusion, at 97% of text) ‘An analysis of their characteristic lexis makes it necessary to think that they could have originated in the Slovinci region or in the western peripheries of the then Kashubian region.’
- (154) *Expressions used by adults should, presumably, be generable.* (LP2001-4; Main Body 1, at 14% of text)
- (155) *jedyne poświadczenie . . . nie jest zlokalizowane, a . . . może tam chyba kontynuować starsze . . .* (ON2002-5; Main Body 1, at 29% of text) ‘the only record . . . is not localised, and in this case . . . may presumably continue an older form . . .’
- (156) *It would appear that the choice of repair is often not predictable in loanwords cross-linguistically.* (L2006-7; Main Body 1, at 26% of text)
- (157) *Obok tego znaczenia notujemy ponadto . . . , co należałoby przetłumaczyć chyba jako ‘ledwo’ (czy ‘okresowo?’).* (ON2003-5; Main Body 2, at 64% of text) ‘Apart from this meaning we record also . . . , which would probably need to be translated as barely (or temporarily?)’
- (158) *At first blush, one might think that this kind of combination is highly idiosyncratic and language-specific.* (JP2004-5; Introduction, at 27% of text)
- (159) *Mimo wszystko można chyba przyjąć, że łatwiej wymówić zakończenie -arni niż -arń.* (PORJ2003-13; Introduction, at 36% of text) ‘After all, it is probably possible to assume that the ending -arni is easier to pronounce than -arń.’

The discussion of middle-value epistemic markers in ELA and PLA could be concluded with the following observations:

- the number of all middle-value markers per one million words was found to be higher in ELA than in PLA by 6:5;
- the number of epistemic modifiers per one million words was higher in PLA than in ELA by 1.5:1;
- the proportion of modal verbs was higher in ELA than in PLA and reached 24% and 13% respectively;
- implicit realisation was preferred in PLA; the results for ELA were balanced;
- objective orientation was preferred in PLA; the results for ELA were balanced;
- there was a marked preference for objective orientation with lexical verbs in PLA, as demonstrated by 72% of the findings for lexical epistemic verbs in this set of data, which contrasted with 46% in the case of ELA;
- the distribution of middle-value markers in the main body of text was even in PLA; in ELA epistemic markers tended to cluster in its second half;
- the numbers of middle-value markers in Introduction and Conclusion were found to be similar in ELA; in PLA more markers were used in the final part of text;
- the only text segment where Polish authors tended to use more middle-value markers than English authors was Conclusion; and
- markers of negative probability were more frequent in Polish than in English Conclusions; Polish authors tended to use them more often in Conclusion than in Introduction; the tendency in ELA was reversed.

The observed similarities involved the following elements:

- in both ELA and PLA lexical verbs were common markers of epistemic judgement;
- in terms of the use of middle-value epistemic markers, the greatest similarity between ELA and PLA was noted in Introduction;
- negative probability was expressed with a similar frequency in ELA and PLA (9% and 10% respectively);
- in both ELA and PLA, the most frequent markers of negative probability were lexical verbs; and
- in both ELA and PLA middle-value markers were more often used with downtoners (15% and 16% of middle-value records respectively) than with amplifiers (10% and 11% respectively).

4.3 Low-value markers

4.3.1 English

In the English data, low-value epistemic markers were 66% more common than middle-value markers and 41% more common than high-value markers. Much like the latter group (see Section 4.1.1), they were dominated by modal verbs, which accounted for 71% of the findings, followed by modal modifiers, which comprised 22% of the data (Table 4.37). Far behind were epistemic adjectives with extraposed subjects, which comprised 4% of the findings, and lexical verbs with somewhat over 2%. Expressions with epistemic nouns were very rare.

Table 4.37 Low-value epistemic markers in ELA: An overview of categories

low-value modality marker	epistemic records	normalized to 1 mln words
modal verbs	2,270 (71%)	1,081
modal modifiers	690 (22%)	329
adjectives	130	62
nouns	39	18
lexical verbs	73	35
all	3,202	1,525

Of the low-value modal verbs found in ELA, 36% were identified as clearly epistemic. Although represented by only three verbs, in terms of the number of records they turned out to be the biggest group of epistemic modals in ELA, accounting for 50% of the data for modal and quasi-modal verbs. As can be seen in Fig. 4.41, epistemic *may* accounted for nearly two thirds of the findings, followed by epistemic *might* with 27% of the records and *could* which comprised 10% of the data for this category of low-value markers. Compared to Coates' (1983) data, where both *may* and *might* were mainly used to express epistemic possibility, in ELA they were found to carry epistemic meaning in 44% and 38% of the records respectively. This may be related to the higher ratio of root possibility, which was often noted in the corpus examined and which is reported to be more common in formal written discourse than in other text types (Coates, 1983). Also, as demonstrated by Facchinetti (2003), this type of non-epistemic modality is characteristic specifically of written academic texts, although the ICE-GB data she analyses point to Natural Sciences and Technology rather than to Humanities.

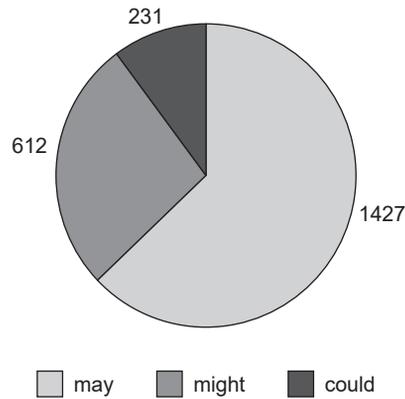


Fig. 4.41 Modal verbs as low-value epistemic markers in ELA

As in the case of high- and middle-value modal verbs, an analysis of the syntactic features of low-value modals in ELA shows a strong association with inanimate subject, although the preference for inanimate subjects and existential *there*-sentences was somewhat less overwhelming than in the other groups and reached 78% of the records (as contrasted with 85% and 90% for high- and middle-value modals respectively). Another well-marked feature was the concurrence with the verb *be*, which, as demonstrated in Fig. 4.42, was recorded in 34% of the data, that is with the same frequency as in the case of high-value modal verbs. As with the other groups of modal verbs, these findings are in agreement with the syntactic co-occurrence patterns identified by Coates (1983). In 90% of the records, the time reference of the main predication was non-past.

Table 4.38 presents data for each of the modal verbs. The figures confirm Coates' (1983) observations that there is a close similarity between the syntactic features of these three verbs if they are used epistemically. *May*, *might* and *could* very often concurred with inanimate subjects, as demonstrated by 73% of the records of *may*, 75% of *might*, and 83% of *could*, where the association was strongest (160-164). All were often recorded with stative verbs *be* and *have*: from 30% of the cases for *might*, through 34% for *may*, to 40% for *could* (162-165). Similar was also their co-occurrence with the perfective infinitive, which ranged from 9% in the case of *might*, through 11% for *could*, to 12% for *may* (163, 165). With regard to existential *there*-structures, they were found to be slightly more common with *may* (165) than with *might*.

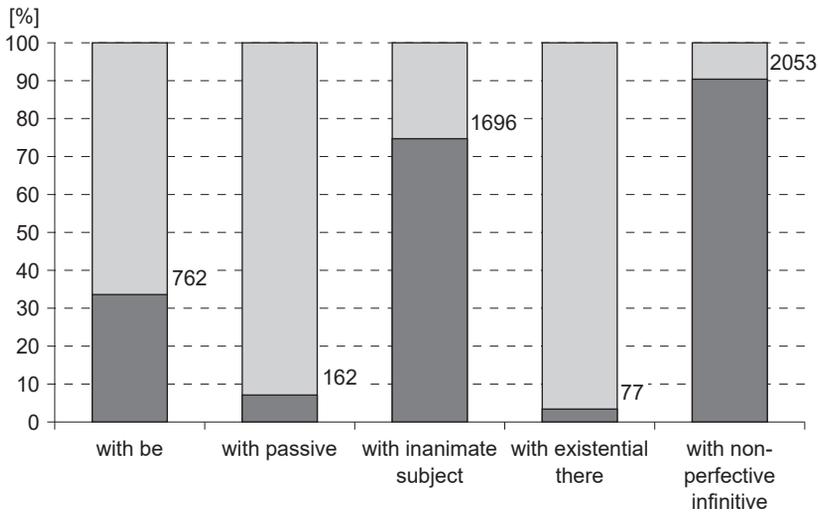


Fig. 4.42 Selected syntactic features of low-value epistemic modal verbs in ELA

Table 4.38 Low-value epistemic markers in ELA: Modal verbs

modality marker	epistemic records	associations
<i>could</i>	1,448 (690)	231 (110)
		with progressive infinitive 9
		with perfective infinitive 25 (11%)
		with passive 7
		with 3 rd person inanimate subject 192 (83%)
		with <i>there</i> as subject 7
		associated with concession 16
		with <i>well</i> 8
		with verb <i>be</i> 93 (40%)
		with verb <i>have</i> 6
		with <i>seem/ appear</i> 2
		with <i>conceivably/ possibly/ potentially/ perhaps</i> 11
with <i>indeed/ of course/ certainly</i> 7		
<i>may</i>	3,234 (1540)	1,427 (680)
		with negation 170 (12%)
		with progressive infinitive 29
		with perfective infinitive 138 (10%)
		with passive 121
		with 3 rd person inanimate subject 1,048 (73%)
		with <i>there</i> as subject 61
		associated with concession 78
with <i>well</i> 64		

		<i>may or may not</i>	22
		with verb <i>be</i>	487 (34%)
		with verb <i>have</i>	55
		with <i>seem/ appear</i>	63
		with <i>need/ have to</i>	27
		with <i>be able to</i>	10
		with <i>be possible</i>	15
		with <i>certainly/ of course</i>	3
		with <i>perhaps</i>	1
<i>might</i>	1,590 (757)	612 (291)	
		with negation	38 (6%)
		with progressive infinitive	11
		with perfective infinitive	54 (9%)
		with passive	34
		with 3 rd person inanimate subject	456 (75%)
		with <i>there</i> as subject	9
		associated with concession	38
		with <i>well</i>	13
		with verb <i>be</i>	182 (30%)
		with verb <i>have</i>	23
		with <i>seem/ appear</i>	55 (9%)
		with <i>need/ have to</i>	8
		with <i>be able to</i>	6
		with <i>be possible</i>	5
		with <i>suggest</i>	18
		with <i>perhaps</i>	1

Figures in parentheses are normalised to 1 mln words.

- (160) *Fourth, this fact may be indicating that the *a* in predicate nominals is a purely syntactic reflex, one which is obviated by the ellipsis itself.* (LP2005-10; Main Body 2, at 91% of text)
- (161) *In this paper I pin down specific points of contact . . . between them, aiming to work towards a more precise set of shared assumptions which might help challenge the marginality of the two frameworks in their respective intellectual and institutional domains.* (LS2004-6; Introduction, at 4% of text)
- (162) *This could be due to the fact the foregoing examples are based largely on intuitively constructed and predominantly sentence-level examples.* (LS2005-3; Main Body 1, at 32% of text)
- (163) *In this case, the shift to negotiation was helpful, and indeed may even have been necessary, in order for the original deliberation dialogue to lead to an action that solved the original problem.* (JP2006-3; Main Body 1, at 40% of text)
- (164) *Here I think a modification of Polinsky's formula might have more to offer.* (JP2004-2; Conclusion, at 97% of text)

- (165) *Unfortunately, there may have been an element of social desirability with regard to answers relating to social limitation of immigrants.* (LC2004-4; Main Body 2, at 88% of text)

All three verbs were also found in concessive contexts, in the concessive (166-167) or in the main clause (168). *May* was recorded with concession in 5% of the cases, which tallies with Coates' (1983) findings for the written part of the corpus she analysed. Examples (169-171) illustrate the use of the verbs with *well*. Coates (1983: 134-135) observes that the collocation *may well* could be interpreted as quasi-objective, in that it may be taken to mean 'there is a possibility that X' (more objective sense) or 'perhaps X' (more subjective sense). Along this line, 4% of epistemic *may* records could be reinterpreted as quasi-objective (169). As for the collocations *might well* and *could well* (2% of epistemic *might* and 3% of epistemic *could* concordances in ELA), Coates (1983: 150) proposes that they actually increase the speaker's commitment to the proposition and so come closer to the middle modal values. In a similar way, Hoyer (1997: 165) treats combinations of all three modals with *well* as expressions of epistemic probability rather than possibility. Indeed, the ELA records seem to confirm this stronger interpretation (170-171).

As shown in Table 4.38, possibility that something is not the case was more often expressed with *may* than with *might*. There were also instances of 50 percent possibility expressed with *may or may not* (172) but not with *might or might not*. Interestingly, *might* was the modal more often associated with verbs *seem* and *appear* than *may* or, in particular, *could* (173). By contrast, *could* was more often recorded with downtoning adverbs, such as *possibly* and *conceivably* (174), and intensifiers (175) than the other verbs.

- (166) *Whereas all participants may have the impression of smooth, unproblematic communication based on the orderly ceding of turns at talk, in reality a disjunction has occurred.* (JP2006-5; Main Body 2, at 85% of text)
- (167) *So while differences between child language and adult language might initially seem to tell against nativism, faith in nativism leads to the discovery of surprising facts.* (LP2001-4; Main Body 2, at 91% of text)
- (168) *Shattuck-Hufnagel argues that the results support the notion of /j/-insertion. However, the conflicting nature of production patterns could instead reflect representational differences at an individual level.* (L2001-4; Introduction, at 20% of text)
- (169) *This indeterminacy may well imply an expectation that subsequent analysts (including courts) should contextualize their holding in relation*

- to the fact patterns of both their immediate decision and those of earlier cases.* (LC2004-2; Main Body 1, at 47% of text)
- (170) *It might well be that in some of these ‘deeper’ sorts of use there are cases where we might incline to treat this proposition as comparative* (LS2004-3; Main Body 2, at 72% of text)
- (171) *Humpty’s reference to a ‘nice knock-down argument’ seems to indicate that he could well be talking about a competitive debate.* (LC2006-3; Main Body 2, at 57% of text)
- (172) *This may or may not be related to the fact that the morphological elements that are sensitive to hierarchy effects are already structurally associated to Tense (clitics and agreement).* (L2001-2; Conclusion, at 96% of text)
- (173) *At first blush, the study of English punctuation might seem a confined, even esoteric topic, of little interest to the general student of language.* (LS2001-2; Conclusion, at 100%)
- (174) *In Quechua, the dative marker *man* and the source or ablative marker *manta* could possibly be manifesting a similar phenomenon.* (LS2003-1; Main Body 1, at 40% of text)
- (175) *Grice does not commit himself to any particular view on how such reference is determined, and he could certainly allow the maxims some involvement in this.* (LP2002-3; Main Body 1, at 32% of text)

As regards the distribution of modals across article sections, all three verbs were found to be more common in the second half of the text. For all verbs, there were more instances recorded in Conclusion than in Introduction and more in Main Body 2 than in Main Body 1, but as the figures in Table 4.39 show, these differences were most distinct in the case of *could*, that is the least frequently attested modal. In the case of *might*, they were still present, albeit to a smaller extent. With regard to *may*, the most common low-value modal, more records were found in Main Body 2 than in Main Body 1, but the figures for Introduction and Conclusion were virtually identical.

The findings for the distribution of low-value epistemic modals across article sections are summarised in Fig. 4.43, which shows a 9% difference between Main Body 1 and Main Body 2 occurrences in favour of the latter and a smaller difference between Introduction and Conclusion. It may be interesting to note that collocations with *well* tended to cluster in Main Body 2, where 61% of these apparently stronger uses were recorded, as contrasted with 22% in Main Body 1. This brings to mind the results obtained for high-value modals (see Section 4.1.1 above), which also tended to occur in the second half of the text if accompanied by strengthening adverbs. No major differences were noticed in this respect between Introduction and Conclusion.

Table 4.39 Distribution of low-value epistemic modality markers in ELA: Modal verbs

	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>could</i>		17	12	8	10	11	17	43	79	180	34		231	73	107	141	
<i>may</i>	11	164	62	32	35	51	66	363	471	1,080	168	4	1,427	492	588	756	
<i>might</i>	3	51	11	11	15	12	39	172	222	482	76		612	209	273	348	
all	14	232 10%	85	51	60	74	122	578	772	1,742	278 12%	4	2,270	774 34%	968 43%	1,245	

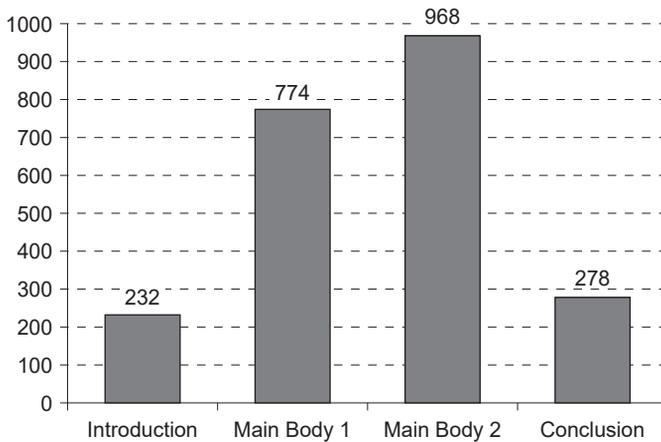


Fig. 4.43 Low-value epistemic modal verbs in article sections (ELA)

Modal modifiers, the second most frequently recorded group of low-value epistemic markers in ELA, comprised six adverbs, which together accounted for 22% of the findings. As can be seen in Fig. 4.44, this group was dominated by *perhaps*, which comprised 75% of the data for low-value modifiers. *Possibly*, the second marker in terms of the number of occurrences, accounted for 17% of the records. Of the other four, only *maybe* reached 2% of the data.

The syntactic features of low-value modifiers, presented in Fig. 4.45, form a slightly different pattern than those of high- and middle-value modifiers. Generally speaking, while the medial position was still found to be most common, the figures for the medial, initial, and initial-end position were not so diversified as in the other groups of adverbs and amounted to 39%, 31% and 28% respectively. Verb *be* was the main verb in 32% of the cases, which is more rarely than in high- and middle-value modifiers (42% in both groups). There

was, however, a close correspondence between the three groups as regards the concurrence with past tense: 9% for low-value and 8% for the other modifiers.

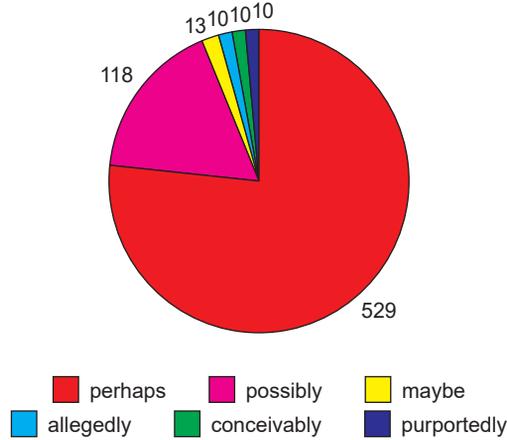


Fig. 4.44 Modal modifiers as low-value epistemic markers in ELA

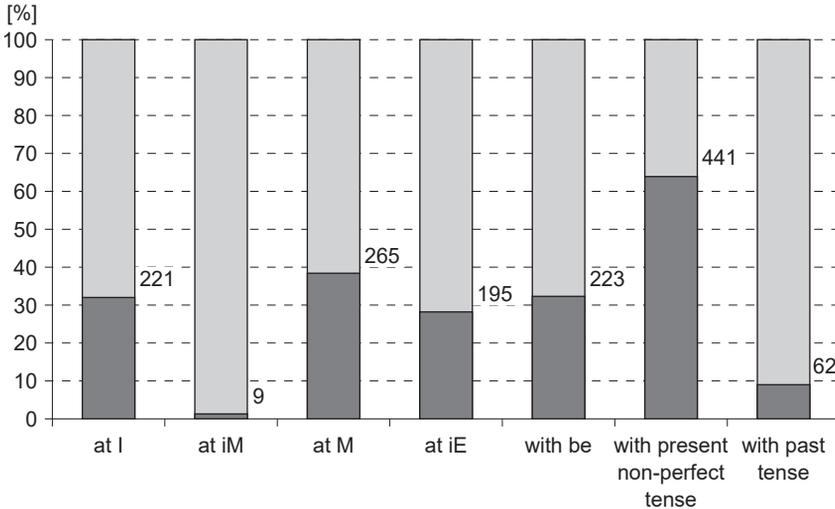


Fig. 4.45 Selected syntactic features of low-value modal modifiers in ELA

Data for particular modifiers are shown in Table 4.40. As can be seen from the figures for sentence position, although in general the medial position was most common, *perhaps*, the most frequent marker in this group, was actually more often recorded initially, as was *maybe* (176-177). *Perhaps* and *possibly*, which together accounted for 94% of low-value adverbs in ELA, were also of-

ten used in the post-verbal position (178-179). The three least frequent adverbs showed preference for the middle placement (180-181).

Table 4.40 Low-value epistemic markers in ELA: Modal modifiers

modality marker	epistemic records	sentence position	associations
<i>allegedly</i>	10 (5)	M 10	with negation 1 with verb <i>be</i> 1 with verb <i>have</i> 1 with <i>suppose</i> 1 with present non-perfect tense 7 with past tense 2
<i>conceivably</i>	10 (5)	I 1 M 9	with verb <i>be</i> 1 with <i>can</i> 1 with <i>could</i> 6 with <i>might</i> 1 with <i>given</i> 1 with present non-perfect tense 2
<i>maybe</i>	13 (6)	I 11 iE 2	with verb <i>be</i> 2 with <i>could</i> 1 with <i>should</i> 3 with <i>will</i> 1 with <i>would</i> 1 with present non-perfect tense 7
<i>perhaps</i>	529 (252)	I 200 iM 8 M 169 iE 152	with negation 43 with verb <i>be</i> 192 with verb <i>have</i> 6 with <i>can</i> 18 with <i>could</i> 22 with <i>may/ might</i> 25 with <i>must</i> 3 with <i>should</i> 10 with <i>will</i> 19 with <i>would</i> 16 with present non-perfect tense 345 with past tense 49 <i>perhaps because</i> 9 <i>perhaps even</i> 17 <i>or perhaps</i> 30 <i>though perhaps</i> 5 with <i>is more/ most important</i> 5 with <i>is most interesting/ striking</i> 5 with <i>is not surprising</i> 3 with <i>is worth noting</i> 4

<i>possibly</i>	118 (56)	I	9	with negation	5		
				iM	1	with verb <i>be</i>	25
				M	67	with verb <i>have</i>	1
				iE	41	with <i>can</i>	5
						with <i>could</i>	14
						with <i>may/might</i>	8
						with <i>will</i>	2
						with <i>would</i>	2
						with present non-perfect tense	80
						with past tense	11
						<i>could possibly be</i>	5
				<i>purportedly</i>	10 (5)	M	10
with verb <i>be</i>	2						
with present non-perfect tense	10						

Figures in parentheses are normalised to 1 mln words.

The proportion of low-value adverbs associated with modal verbs — mostly *can*, *could*, *may*, *might* and *would* — was similar to that of middle- and high-value modifiers and approached 24% of the records. *Conceivably*, *perhaps* and *possibly* occurred frequently with *could* (181); *perhaps* was common with *may/might* (182). It is worth noting that for *possibly*, the most common modal verb combination was with *can't/ couldn't*, where it no longer functioned as an epistemic marker, but as an emphasiser. These records were not included in the analysis of low-value markers but were recorded as emphatic uses of the high-value modal modals (see Examples 8 and 11 in Section 4.1.1 above).

- (176) *Perhaps* the most fundamental function of nuclear tones is that they mark the boundaries of groups of vocalizations and organize speech in “utterances” or intonation-groups. (L2002-4; Main Body 2, at 53% of text)
- (177) *Maybe* these confessions make me altogether inadmissible for membership of the distributors’ club. (LS2004-8; Main Body 2, at 90% of text)
- (178) It is to say that the persistent and widespread enforced print standardization (and mechanization . . .) reflexively create an illusion that language is “machine-like” . . ., and *perhaps* even that there is one right way, one linear direction, in which to do things. (LC2004-1; Conclusion, at 97% of text)
- (179) The systematic expression of aspect in any given language can be understood as realizing at least the part (PART) or totality (TOT) relation and *possibly* some of the other properties and constraints. (LS2001-7; Main Body 2, at 68% of text)
- (180) These differences *allegedly* account for cross-linguistic variation and for variation among speakers of the same language. (LP2001-4; Main Body 2, at 82% of text)

- (181) *That seems to be referring to a complex fact, “We believe her and the court does not,” although it could conceivably be referring to the simple fact that the court does not believe her.* (L2003-3; Main Body 1, at 47% of text)
- (182) *I have not attempted to do more than mention in passing . . . the many subclassifications of clause-type and illocutionary force that may perhaps lead to a wider variety of primary illocutions.* (LS2006-1; Conclusion, at 100% of text)

Perhaps, the most frequently recorded low-value epistemic adverb, formed a cluster *or perhaps*, as in (183), which in ELA signalled hypotheticality or, more generally, introduced a context of consideration. Two thirds of these occurrences came from the second half of examined texts. Another noteworthy cluster was *perhaps even*, as in (184), which introduced metalinguistic comments or tentative self-corrections where, it seems, the author thought that a stronger statement might be justified, but ultimately resolved to leave it up to the reader to decide.

Another important use of *perhaps* was with expressions refocusing attention on a selected aspect of the discussed issue or introducing a new element to be considered, and involving an adjective in the comparative or superlative degree, such as *most striking*, *more important* or *most significant*, as in (176) and (185). In these contexts, *perhaps* typically occurred in the initial sentence position, marking the transition point where new content was to be introduced, thematising the significance of the new information and toning down the adjective. This modifier was also recorded in formulaic expressions, such as *it is worth noting* (186), where it usually occupied the medial position, although the initial position was occasionally noted.

- (183) *Had “out” been followed by silence or turn-transition, the final consonant would have been expected to be an apical stop . . . or perhaps simple glottal closure.* (JP2004-4; Main Body 2, at 77% of text)
- (184) *By implication, the kind of thinking that alphabetic peoples can express through speech . . . is different from and perhaps even superior to that of non-literate . . . people.* (LS2004-1; Main Body 1 at 8% of text)
- (185) *Perhaps more significant than time constraints in detaching students from the media were ways the instructors chided those too keen to be current in pop culture.* (LC2004-8; Main Body 1, at 31% of text)
- (186) *It is perhaps worth noting further that an audience may be wrong about both what is said and what is implicated, at the same time.* (LP2002-3; Main Body 1, at 21% of text)

The distribution of low-value modifiers in article sections is shown in Table 4.41. *Perhaps* and *possibly*, the two most frequent epistemic adverbs, were used more often in Main Body 2 than in Main Body 1, as was *allegedly*, one of the less popular markers. In the other three adverbs the tendency was reversed. *Perhaps* was also more frequently found in Conclusion than in Introduction.

Table 4.41 Distribution of low-value epistemic modality markers in ELA: Modal modifiers

	A		I		MB						Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
	1	2	3	4	5	R and D		<50%	>50%								
						R	D										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>allegedly</i>			1		2				5	8	2		10	3	5	7	
<i>conceivably</i>			1		3		1	2	3	10			10	6	4	4	
<i>maybe</i>								9	4	13			13	9	4	4	
<i>perhaps</i>	4	46	11	7	9	7	27	156	203	420	58	1	529	183	237	295	
<i>possibly</i>		9	5	2	3	4	6	35	45	100	8	1	118	45	55	63	
<i>purportedly</i>				1	2			5	1	9	1		10	8	1	2	
all	4	55	18	10	19	11	34	207	261	560	69	2	690	254	306	375	
		8%									10%			37%	44%		

Fig. 4.46 summarises the data for this group of markers in different segments of text. It can be seen that low-value modifiers turned out to be slightly more frequent in Conclusion than in Introduction and more common in Main Body 2 than in Main Body 1, the difference in the latter case approaching 7%. No relation was discovered between the use of low-value adverbs with modal verbs *can*, *could*, *may* and *might* on the one hand and the section of text on the other. The distribution of fronted modifiers, shown in Fig. 4.47, generally reflects the pattern of distribution for all low-value adverbs (Fig. 4.46), with a slight bias towards the second half of the text. In terms of their role in individual text segments, they were found to contribute most to Conclusion, where they accounted for 39% of all low-value epistemic modifiers used in this part of text, followed by Main Body 2 and Main Body 1 with 33% and 31% of records respectively. This pattern is different from that obtained for high- and middle-value modifiers, where fronted markers had the biggest share in Introduction.

Epistemic adjectives and nouns accounted for only 5% of low-value epistemic markers; of the 169 records for this group, 130 (77%) involved epistemic adjectives. As can be seen in Fig. 4.48, almost half of the findings involved the adjective *possible*, followed by the related noun *possibility* with 22% of the data (in Fig. 4.48 marked separately for objective and subjective uses); *unlike-*

ly, the third most common marker, accounted for 17% of the data, followed by *conceivable* with 8% of the records. The other items comprised approximately 5% of the findings. The dominant orientation was objective, as shown by 94% of the data (187-189); subjective orientation was virtually limited to *I leave open the possibility*, as in (190), with only one other example found in the corpus (191).

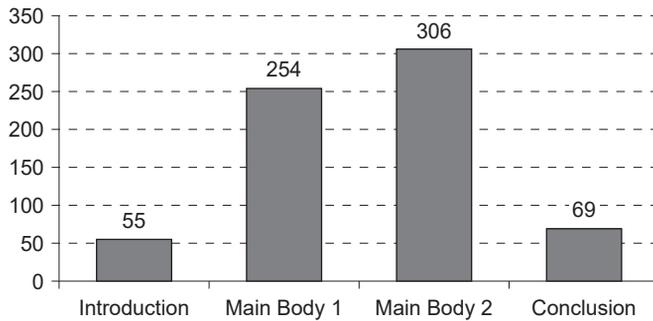


Fig. 4.46 Low-value modal modifiers in article sections (ELA)

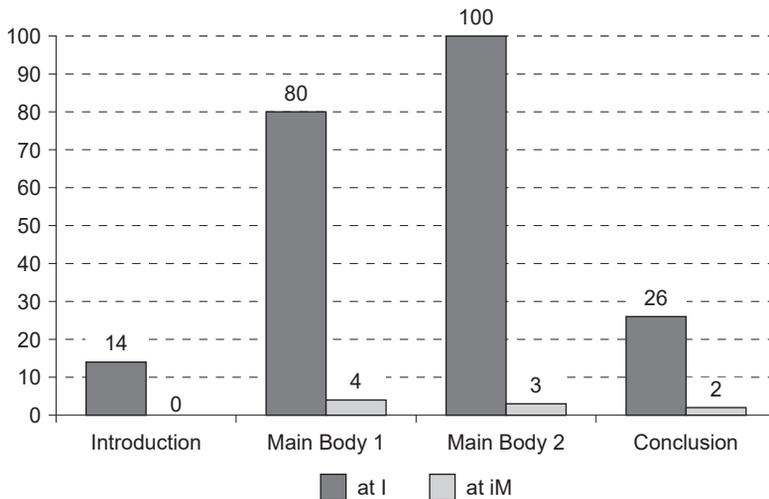


Fig. 4.47 Low-value modal modifiers at I and iM in article sections (ELA)

It is perhaps worth noting that expressions which more explicitly voiced doubts about the truth of a statement (*it is unlikely/ not likely/ doubtful* and *there are doubts*, as in 191-192) accounted for 22% of the data for low-value adjectives and nouns.

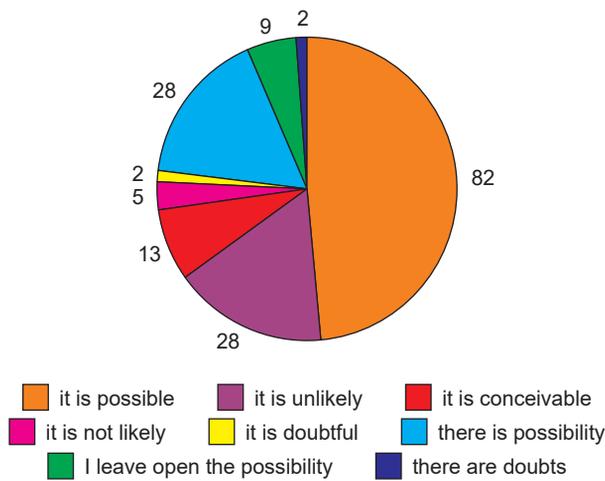


Fig. 4.48 Adjectives and nouns as low-value epistemic markers in ELA

- (187) *It is possible that many of the instructors and older students, who knew people who had died in the attacks, were working through some form of post-traumatic stress disorder, of which avoidance is one symptom or strategy.* (LC2004-8; Main Body 1, at 34% of text)
- (188) *It is conceivable that this might be developed into a picture which would have the virtues of preserving a more straightforward account of the logical structure of our sentences.* (LS2004-3; Main Body 2, at 87% of text)
- (189) *One possibility is that these duration effects are not actually related to the listener, but instead are caused by the repetition of the information.* (LC2003-1; Conclusion, at 72% of text)
- (190) *While familiar examples of Austinian exercitives involve the explicit assertion of the content of the rules enacted, I leave open the possibility that such an exercitive might express the content of the enacted rule in some other manner.* (LP2004-3; Main Body 1, at 22% of text)
- (191) *It strikes me as unlikely, however, that there are rules of well-formedness tied to phrase length, so I am inclined to view the difference . . . as rooted in pragmatic, rather than syntactic factors.* (LP2001-6; Main Body 2, at 84% of text)
- (192) *It is doubtful, however, whether the changed status of over will have any consequences at all for the way in which the child continues to use the already learned expressions over here and fall over.* (LS2003-7; Main Body 1, at 45% of text)

More details about the use of low-value epistemic adjectives and nouns in ELA can be found in Table 4.42. It may be interesting to note that of the 16

concurrences with the copula *seem*, 14 were recorded for *unlikely* and *not likely* (193), that is for items which convey doubt in the truth of the modalised statement rather than 50% chance of it being true. By contrast, emphatic uses tended to be markedly more frequent with *possible/ possibility* and *conceivable*, as in (194-195), that is with expressions closer to the midpoint of the epistemic scale, between the bare assertion that something is the case on the one hand and that it is not on the other. Of the 31 records where epistemic adjectives and nouns received additional emphasis, only five involved *unlikely/ not likely* and *doubt*, as in (196) and (197).

Table 4.42 Low-value epistemic markers in ELA: Adjectives and nouns

modality marker	epistemic records	associations	
<i>conceivable</i> (<i>It is A that</i>)	13 (6)	with <i>it is</i> with intensifying adverbs	13 4
<i>doubtful</i> (<i>It is A that</i>)	2 (1)	with <i>it is</i>	2
<i>not likely</i> (<i>It is A that</i>)	5 (2)	with <i>it is</i> with <i>it seems</i> <i>even less likely</i>	4 1 1
<i>possible</i> (<i>It is A that</i>)	82 (39)	with <i>it is</i> with <i>it seems</i> <i>it is possible or even likely</i> <i>it is natural for it to be possible</i> with intensifying adverbs	80 2 1 1 18
<i>unlikely</i> (<i>It is A that</i>)	28 (13)	with <i>it is</i> with <i>it seems</i> <i>It strikes me as unlikely that</i> with intensifying adverbs	14 13 1 2
<i>doubt</i> (<i>There is N that</i>)	2 (1)	with <i>there must be</i> <i>there do remain doubts</i>	1 1
<i>possibility</i> (<i>There is N that</i>) (<i>I leave open N</i>)	37 (18)	with <i>there is</i> <i>One possibility is that type</i> <i>I leave open the possibility that type</i> with intensifying adjectives	3 25 9 3

Figures in parentheses are normalised to 1 mln words.

(193) *It seems unlikely, then, that phonological processes such as metathesis and reduplication could have formed a model for movement in the syntax.* (L2006-6; Main Body 1, at 40% of text)

- (194) *It is quite possible that individual women stand in individualized and shifting relationships to the content of these funerary songs.* (LC2005-4; Main Body2, at 73% of text)
- (195) *It is entirely conceivable that the position of the verbal particle could be sensitive to both the length and the complexity of the NP object.* (L2005-10; Main Body 2, at 76% of text)
- (196) *We might charitably conclude that this is an infelicity of expression; but there must be an element of doubt about the clarity of Chomsky's thinking here.* (LS2003-5; Main Body 2, at 89% of text)
- (197) *Given all this, it's quite unlikely that the notions of what is said and what is implicated are meant to encompass '... every aspect of the interpretation of an utterance ...'* (LP2002-3; Main Body 1, at 23% of text)

Few as the expressions with epistemic adjectives and nouns were in ELA, their distribution was rather consistent, with more items attested in Main Body 2 than in Main Body 1 and with more entries recorded in Conclusion than in Introduction (Table 4.43). The difference, especially as regards the Main Body results, was well marked in the three most popular adjectives (*possible, unlikely, conceivably*) and in the more common noun (*possibility*).

With regard to the distribution of the subjective uses of epistemic nouns and adjectives, of the ten records, seven came from Main Body 2, two from Main Body 1, and only one from Introduction. A similar tendency was observed for the emphatic uses of adjectives and nouns, of which 22 were found in Main Body 2, as contrasted with 9 coming from Main Body 1.

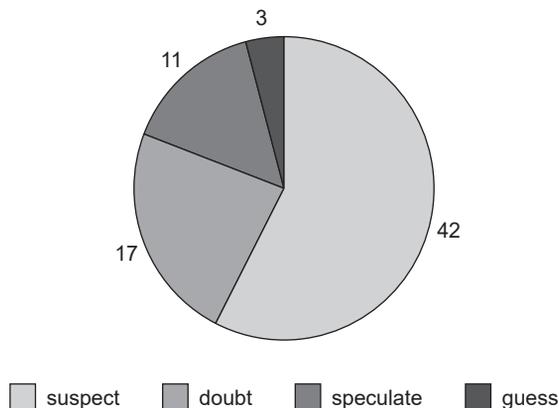


Fig. 4.49 Lexical verbs as low-value epistemic markers in ELA

Table 4.43 Distribution of low-value epistemic modality markers in ELA: Adjectives and nouns

	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>conceivable</i> (It is A that)							4	4	5	13			13	4	9	9	
<i>doubtful</i> (It is A that)								2		2			2	2			
<i>not likely</i> (It is A that)	1							2	2	4			5	2	2	2	
<i>possible</i> (It is A that)		2	4	3	2	4	12	20	27	72	8		82	29	43	51	
<i>unlikely</i> (It is A that)			1	1		1	5	9	9	26	2		28	11	15	17	
all adjectives	1	2	5	4	2	5	21	37	43	117	10		130	48	69	79	
<i>doubt</i> (there is N that)									2	2			2		2	2	
<i>possibility</i> (there is N that)		1			1		4	6	20	31	5		37	7	24	29	
all nouns		1			1		4	6	22	33	5		39	7	26	31	
Total	1	3	5	4	3	5	25	43	65	150	15		169	55	95	110	

Lexical verbs comprised merely 2% of the data for low-value epistemic markers. As can be seen in Fig. 4.49, of the four verbs the most common was *suspect*, which accounted for almost 60% of the findings, followed by *doubt* and *speculate* (23% and 15% respectively) and very rare instances of *guess*.

Table 4.44 presents the findings for particular lexical verbs. The following types of structures were taken into consideration: forms with 1st person subject (198-199), impersonal constructions with *one* as subject (200), existential structures (201), passive forms with anticipatory *it* (202), and *to*-infinitives as adjective complementation with anticipatory *it* (203).

Three fourths of the records were identified as subjective, as in (198-199), (205) and (207-208). Objective orientation was more common for *speculate* and *doubt* than for the other two markers, but on the whole subjective uses dominated in all the verbs.

Table 4.44 Low-value epistemic markers in ELA: Lexical verbs

verb	epistemic uses	
<i>doubt</i>	17 (8)	
	<i>There is reason to doubt that</i> type	4
	with <i>I will argue that</i>	2
	with <i>a number of reasons</i>	1
	with present non-perfect tense in <i>that</i> -clause	4
	<i>One may doubt that</i> type	2
	with <i>may</i>	1
	with <i>can</i>	1
	with present non-perfect tense in <i>that</i> -clause	1
	with past tense in <i>that</i> -clause	1
	<i>I/ We doubt that</i> type	11
	with <i>I</i>	9
	with <i>we</i>	2
	<i>we have reason to doubt</i>	1
	with <i>seriously/ highly</i>	2
	with <i>rather</i>	1
with present non-perfect tense in <i>that</i> -clause	9	
with past tense in <i>that</i> -clause	1	
<i>guess</i>	3 (1)	
	<i>I guess that</i> type	3
	parentheticals	2
	with <i>would</i>	2
	with present non-perfect tense in <i>that</i> -clause	1
<i>speculate</i>	11 (5)	
	<i>It is speculated that</i> type	3
	with <i>is</i>	1
	with <i>can be</i>	1
	with <i>it is tempting to</i>	1
	with negation in <i>that</i> -clause	1
	with present non-perfect tense in <i>that</i> -clause	2
	<i>One may speculate that</i> type	2
	with <i>can/ may</i>	2
	with present non-perfect tense in <i>that</i> -clause	1
	<i>I/ We speculate that</i> type	6
	with <i>I</i>	3
	with <i>we</i>	3
	with <i>can/ might/ would</i>	3
	with <i>I am tempted to</i>	1
	with present non-perfect tense in <i>that</i> -clause	3
with past tense in <i>that</i> -clause	2	

<i>suspect</i>	42 (20)	
	<i>It is not unreasonable to suspect</i>	1
	<i>There is reason to suspect that</i> type	3
	with present non-perfect tense in <i>that</i> -clause	3
	<i>One suspects</i> type	3
	with <i>might</i>	1
	<i>I/ We suspect that</i> type	35
	parentheticals	7
	with <i>I</i>	30
	with <i>we</i>	5
	with negation in <i>that</i> -clause	4
	with present non-perfect tense in <i>that</i> -clause	24
	with past tense in <i>that</i> -clause	2

Figures in parentheses are normalised to 1 mln words.

- (198) *For many, the third person tag must be the non-specific they; but I would guess that some English speakers might allow he or she in its place* (LS2006-1; Main Body 1, at 40% of text)
- (199) *I doubt, though, whether many people ever consult a dictionary in order to unravel the senses of a polysemous word.* (LS2003-2; Introduction, at 10% of text)
- (200) *One may doubt whether the two primary participants, the officer and the immigrant, shared a similar view of what, exactly, had been transacted.* (JP2006-5; Main Body 2, at 89% of text)
- (201) *However, there are a number of reasons to doubt that this is the correct explanation of CPA.* (LP2001-1; Main Body 1, at 45% of text)
- (202) *Therefore . . . it can be speculated that perhaps it does not need to be invoked in any case, since other well-known forces of linguistic change . . . would seem to be sufficient* (LS2001-4; Main Body 2, at 71% of text)
- (203) *It is not unreasonable to say with Van Valin that . . . and to suspect with him that a grammar based on languages not much like English might look very different from grammars based in English.* (LC2004-1; Introduction, at 11% of text)

About 15% of the data for low-value lexical verbs involved the use of modal verbs *may*, *can*, *would* or *might*, which may add objectivity to the epistemic evaluation, as in (200) and (202), or make the assessment more cautious, as in (198) and (204). This latter function was also fulfilled by the adverb *rather*, as in (205). Another way of objectifying epistemic evaluation was through explicit references to there being reasons for this judgement, as in (201), (203) and (206), or in (207), where a reference to objective grounds for doubting

combines with subjective orientation. On very rare occasions, low-value lexical verbs were accompanied by intensifying adverbs, as in (208).

In 12% of the records, the lexical verbs were used parenthetically, as in (209). All the parentheticals involved subjective orientation.

- (204) *Yet one might still suspect that, given the availability of adequate synonyms such as ‘traditionalists’, there may be a nuanced overture to the incumbent government.* (LC2004-5; Main Body 2, at 91% of text)
- (205) *But, while I rather doubt if there is a sense in which that can be said of language, I also doubt that this is what is at issue.* (LS2004-2; Main Body 2, at 91% of text)
- (206) *Clearly, there is reason to suspect that the same syntactic and semantic mechanisms are at work in both cases.* (LP2001-6; Main Body 2, at 65% of text)
- (207) *We are left with complex demonstratives being alone among all quantified terms . . . and thus still have reason to doubt that such demonstratives are really instances of the general syntactic form.* (LP2001-6; Main Body 1, at 23% of text)
- (208) *Personally, I highly doubt that there is any useful sharp distinction between syntax and semantics.* (LP2004-2; Conclusion, at 100% of text)
- (209) *The proposal in (20) holds for Kashmiri and Picurfs . . . and, we suspect, for many other languages involving hierarchy phenomena.* (L2001-2, Main Body 1, at 47% of text)

With regard to the distribution of low-value lexical verbs in article sections, the figures were too low to show any well-marked tendencies, but on the whole it seems that they were used with a similar frequency in the first and in the second half of text (Table 4.45). As shown in Fig. 4.50, there might be a preference for objective uses in Introduction, as contrasted with Conclusion, where orientation was objective in all the (very few) cases.

Table 4.45 Distribution of low-value epistemic modality markers in ELA: Lexical verbs

	A		I		MB						Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
	1	2	3	4	5	R and D		<50%	>50%								
						R	D										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>doubt</i>	1	3	1					4	7	12	1		17	5	7	8	
<i>guess</i>			1					2		2			3	2			
<i>speculate</i>			1			1	1	2	4	8	2		11	3	5	7	
<i>suspect</i>			1				1	1	19	17	38	3	42	19	19	22	
all	1	6	1		1	2	1	27	28	60	6		73	29	31	37	

In about 8% of records for this group of markers the main verb in *that*-clause was in the past tense.

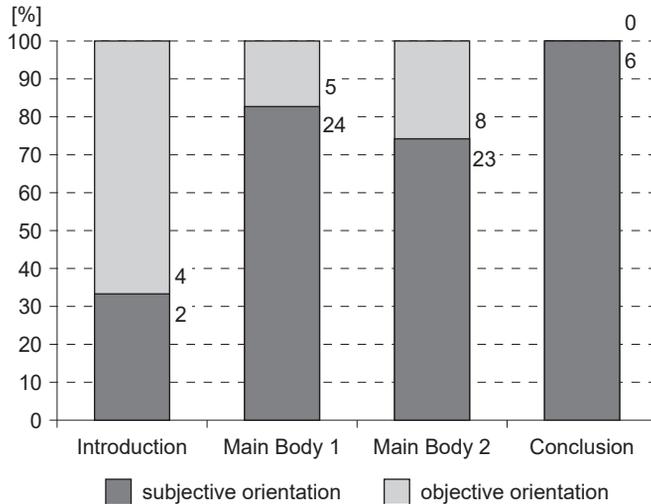


Fig. 4.50 Subjective and objective orientation in article sections: Low-value lexical verbs (ELA)

4.3.2 Polish

In Polish texts, low-value epistemic markers outnumbered high-value markers by 1.8:1 and were only slightly less frequent than middle-value markers. The most common item was *móc* ‘may’, the only modal verb in this group of epistemic markers, which accounted for 60% of the data, followed by epistemic modifiers, which comprised 33% of the findings (Table 4.46). Structures with epistemic adjectives and nouns comprised 4%, and lexical verbs only 3% of the findings.

Table 4.46 Low-value epistemic markers in PLA: An overview of categories

low-value modality marker	epistemic records	normalized to 1 mln words
modal verb	352 (60%)	414
modal modifiers	195 (33%)	229
adjectives	17 (3%)	20
nouns	8	9
lexical verbs	16 (3%)	19
all	588	691

Modal verb *móc* ‘may’ was the most frequently attested low-value modality marker in the Polish data. Of the 1,491 records of the verb, 352 were identified as epistemic, which amounts to 22% of the findings. As in the case of high- and low-value markers, the association with inanimate subject was strongly pronounced, which together with the occurrence in subjectless structures constituted 92% of the data (210). The preference for non-past indicative uses was also significant (210-211, 213), recorded in 67% of the findings for this verb, which is very similar to the results obtained for Polish middle-value modals. Past tense forms comprised about 24% of the records (212). With regard to the concurrence with verb *być* ‘be’, it was observed in 21% of the data (211), which again is closer to the results for middle-value rather than high-value modals in PLA. Only in 2% of the records was *móc* used to express negative possibility (213).

Table 4.47 Low-value epistemic markers in PLA: Modal verb *móc*

modality marker	all records	epistemic uses
<i>móc</i> ‘may’	1,491 (1754)	352 (414)
		3 sing (Pr, Past, Hyp) 256
		3 pl (Pr, Past, Hyp.) 96
		with inanimate subject 324
		present tense 236
		past tense 83
		hypothetical mood 33
		with passive 14
		with verb <i>być</i> ‘be’ 74
		with negation in the main predication 7
		<i>może oznaczać/ sugerować/ świadczyć/ wskazywać</i> ‘mean/ suggest/ indicate’ 27
		<i>może pochodzić/ powstać/ wynikać/ wywodzić się</i> ‘come from/originate/ result from’ 22
		<i>może się okazać</i> ‘it may turn out’ 8
		<i>może mieć wpływ</i> ‘it may have impact’ 7
		<i>może/ mogłoby się wydawać</i> ‘it may/ might seem’ 20
		<i>może być tak, że</i> ‘it may be the case that’ 4
		<i>może budzić wątpliwości/ zastrzeżenia/ zdziwienie</i> ‘it may raise doubts/ be surprising’ 4
		<i>może dziwić</i> ‘it may be surprising’ 2

Figures in parentheses are normalised to 1 mln words.

As can be seen in Table 4.47, in a number of records *móc* was used with verb *wydawać się* 'seem', which introduces a middle-value epistemic judgement or a cautious opinion (214-215). Some of these occurrences involved also the hypothetical mood (216). In a number of cases the main verb was directly employed in developing the argument and moving the argumentation forward, as in (217).

- (210) *Uwarunkowania ideologiczne mogą [MÓC^{3 PL PRES}] mieć bowiem wpływ na kształt języka w rozumieniu klasycznej definicji.* (SFPS2005-3; Main Body 1, at 36% of text) 'This is because ideological determinants may have impact on the shape of language in the classical understanding of the term'
- (211) *Może [MÓC^{3 SING PRES}] być i tak, że to właśnie usprawiedliwienie pełni funkcję odmowy* (JK2005-10; Main Body 1, at 46% of text) 'It may also be that an excuse functions as a denial'
- (212) *Używano w tym celu różnych znaków interpunkcyjnych i graficznych, . . . które mogły [MÓC^{3 PL NON-MASC-PERSONAL PAST}] ułatwić czytelnikowi segmentację_percypowanego tekstu.* (PORJ2006-9; Conclusion, at 91% of text) 'To serve this purpose various punctuation and graphic marks were used . . . which may have assisted the reader in the segmentation of the text'
- (213) *Autorzy tych opracowań mogą należeć do pokolenia najmłodszego, mogą [MÓC^{3 PL PRES}] nie mieć świadomości co do waloryzacji socjologicznej.* (PORJ2006-11; Main Body 2, at 82% of text) 'The authors of these studies may belong to the youngest generation . . . and may not be aware of the valuation of *sociologia*'
- (214) *I choć może [MÓC^{3 SING PRES}] się wydawać, że . . . nazwa jest tylko słowną etykietą, werbalnym odpowiednikiem czy identyfikatorem tego produktu, to jednak świadomość jej wyjątkowego znaczenia każe specjalistom spędzać całe miesiące na wynalezieniu tego jednego słowa* (ON2003-11; Introduction, at 11% of text) 'And although it may seem that . . . the name is only a verbal label, a verbal counterpart or tag of the product, the awareness of its unique importance makes experts spend whole months looking for this single word'
- (215) *Tak dwa różne znaczenia obrazu lwa mogą [MÓC^{3 PL PRES}] wydawać się w pierwszej chwili szokujące, nieprzemyślane.* (JK2003-4; Main Body 2, at 74% of text) 'Two so different meanings of the image of the lion may seem at first shocking, ill-considered'
- (216) *Choć mogłoby [MÓC^{3 SING NEUT HYP}] się wydawać, że dyscypliną najbardziej powołaną do opisu potocznej wizji świata winna być filozofia . . . to jednak potoczne formy wiedzy stały się obiektem badań, także dla*

psychologii poznawczej. (BPTJ2003-4; Main Body 1, at 33% of text) 'Although it might seem that the discipline which is best prepared to describe the common picture of the world should be philosophy . . . popular forms of knowledge have become an object of study also for cognitive psychology'

- (217) *Żaden z wymienionych przykładów nie ma odpowiednika rodzaju męskiego, co mogłoby [MÓC^{3 SING NEUT HYP}] sugerować, iż wśród studentów, urzędników czy chórzystów albo nie ma kobieciarzy, albo jest ich znikoma liczba* (SFPS2004-5; Main Body 1, at 21% of text) 'None of the examples mentioned has a masculine counterpart, which might suggest that among students, clerks or choir singers there are either no womanisers or very few of them'

The distribution of *móc* 'may' in the article sections is presented in Fig. 4.51. More records came from the second half of the articles, but the difference — especially between Main Body 1 and Main Body 2, with 36% and 40% of occurrences respectively — was not very strongly marked. With regard to Introduction and Conclusion, respectively 9% and 15% of the data for this modal verb came from these sections.

An analysis of the distribution of hypothetical forms of *móc*, which comprised 9% of the data, shows no difference between Main Body 1 and Main Body 2 but a preference for Conclusion over Introduction, where only one such use was recorded.

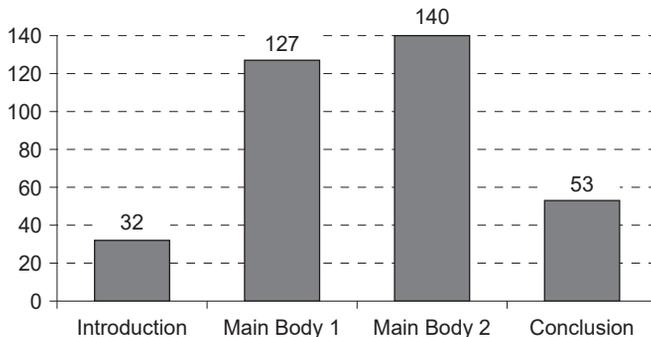


Fig. 4.51 Low-value epistemic modal verb *móc* in article sections (PLA)

Modal modifiers were the second most frequently attested group of low-value epistemic markers in PLA, comprising one third of the findings. As can be seen in Fig. 4.52, this group embraced only three items, of which by far most common was *może* 'perhaps', which accounted for 95% of the data. The re-

maining 5% involved two epistemic-evidential markers, *jakoby* ‘purportedly’ and *rzekomo* ‘allegedly’.

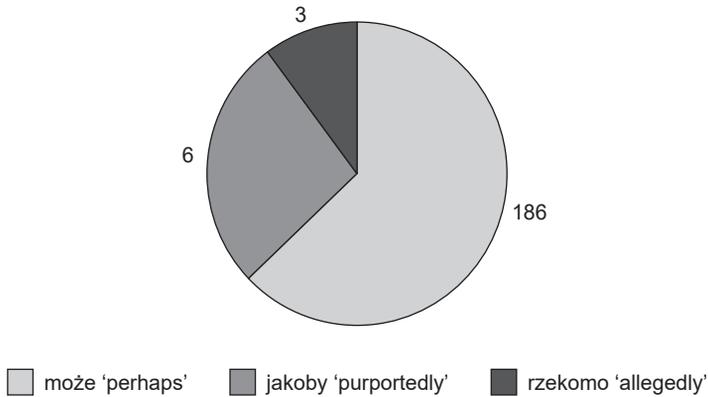


Fig. 4.52 Modal modifiers as low-value epistemic markers in PLA

Selected syntactic features of Polish low-value modifiers are shown in Fig. 4.53. It may be interesting to note that 47% of the markers were used in the thematic position (218), which is more than the results for high-value markers (38%) and much more than those for middle-value markers (18%). By contrast, the concurrence with verb *be*, here observed in 23% of the records (218-219), was lower than in the other two groups. About 19% of the modifiers came from clauses where the main verb was in the past tense.

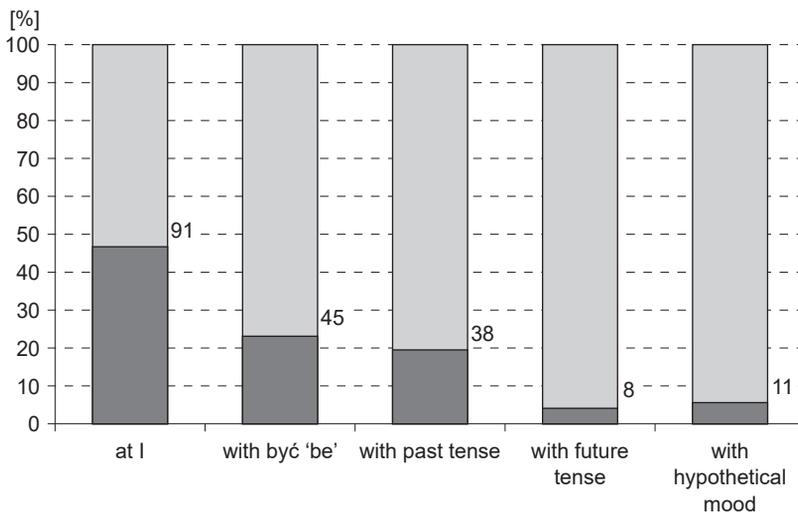


Fig. 4.53 Selected syntactic features of low-value modal modifiers in PLA

- (218) *Może jakimś dalekim echem tego jest* [BYĆ 'be'^{3SING PRES}] *tytuł powieści Sergiusza Piaseckiego...* (JK2003-19; Main Body 1, at 44% of text) 'Perhaps the title of Sergiusz Piasecki's novel is a remote echo of that'
- (219) *Jest to* [BYĆ 'be'^{3SING PRES}] – *być może* – *sposób na oswojenie czegoś nieznanego i groźnego.* (ON2003-10; Main Body 2, at 92% of text) 'It is – perhaps – a trick to domesticate something unfamiliar and dangerous'

Table 4.48 Low-value epistemic markers in PLA: Modal modifiers

modality marker	epistemic records	sentence position	associations	
<i>jakoby</i> 'purportedly'	6 (7)	M 1 iE 5	with past tense	1
<i>może</i> 'perhaps'	186 (219)	I 90 M 43 iE 53	<i>być może</i> with negation with verb <i>być</i> 'be' with verb <i>mieć</i> 'have' with <i>pochodzić od/ powstać</i> 'originate from/ in' with <i>wynikać</i> 'follow', <i>oznaczać</i> 'mean', <i>wskazywać</i> 'indicate' with <i>stać się</i> 'become', <i>pojawić się</i> 'appear', <i>istnieć</i> 'exist' <i>występować</i> 'occur' with non-epistemic modal verbs: <i>należy</i> , <i>trzeba</i> 'one should', <i>warto</i> 'it is worth' <i>może nawet</i> 'perhaps even' <i>może raczej</i> 'perhaps rather', <i>może nie tyle... ile</i> 'perhaps not so much... as' with <i>zresztą</i> 'besides' with concessive signals <i>jednak</i> 'still', <i>choć</i> 'although' with adjective in the comparative/ superlative with past tense with future tense with hypothetical mood	107 10 48 5 6 6 8 9 8 3 3 4 2 39 8 11
<i>rzekomo</i> 'allegedly'	3	I 1 M 2	with negation	1

Figures in parentheses are normalised to 1 mln words.

More information about low-value modifiers is presented in Table 4.48. This group of markers was heavily dominated by *może* 'perhaps', which accounted for 95% of the data (220). In the corpus examined, *być może* — the complex form of the modifier — was found to be more frequent than *może*, as shown by 58% of the results for this unit (221). The complex form was also

more frequently used in the thematic position than the simple form (51% and 44% respectively). Worth noting may also be the use of *może* with non-epistemic modal verbs *należy*, *trzeba* ‘one should’ and *warto* ‘it is worth’, which — if attested in Introduction (as in 222 and 223) — was associated with an indirect announcement of the purpose of the article. In Conclusion these structures were associated with final remarks or implications of the research and sometimes combined with the hypothetical mood, as in (224).

An interesting combination was the concurrence with *raczej* ‘rather’, as in (225), which introduced a tentative self-correction, and *nawet* ‘even’, as in (226), which introduced a metalinguistic comment in which the author indicated that a stronger formulation of the claim might actually be possible. Another form of tentative self-correction was the use of *może* with the comparative or superlative degree of adjectives, as in (227), which indicated that the author had some second thoughts on the matter (the secondary character of the reflection further emphasised by parentheses).

The use of low-value epistemic-evidential modifiers is shown in (228) and (229).

- (220) *Tajemnica aktywności Kaszubów w propagowaniu i podnoszeniu prestiżu własnej kultury i języka leży może w charakterze regionu atrakcyjnego turystycznie.* (BPTJ2002-2; Conclusion, at 88% of text) ‘The secret of Kashubians’ activity in promoting their own culture and language and in raising their prestige lies perhaps in the character of the region, which is a tourist attraction’
- (221) *Być może reklama jest więc jednym z szumów, na który jesteśmy skazani, głównie z powodu rosnącej z dnia na dzień presji informacji.* (PORJ2006-3; Main Body 1, at 29% of text) ‘Perhaps the advertisement is one of the noises we have no choice but to bear, mainly because of the steadily growing pressure of information’
- (222) *Może zatem alternacji *-au- : *-u- nie należy jednak rozpatrywać wyłącznie na płaszczyźnie konwencjonalnej.* (ON2004-2; Introduction, at 8% of text) ‘thus perhaps one should not discuss the alternation *-au- : *-u- on the level of convention only’
- (223) *Warto też może przy tej okazji raz jeszcze powrócić do niełatwej sprawy autorstwa przekładów szesnasto- i siedemnastowiecznych druków kaszubskich.* (SFPS2001-5; Introduction, at 17% of text) ‘It may also be worth coming back once again to the difficult problem of the authorship of the translations of sixteenth and seventeenth century Kashubian texts’
- (224) *W związku z rozbieżnościami dotyczącymi częstości oraz zakresu użycia form o zakończeniu -arń być może należałoby dla wszystkich leksemów*

- na -arnia uznać je za wariant rzadszy, ale ciągle poprawny.* (PORJ2003-13; Conclusion, at 96% of text) ‘with regard to the differences concerning the frequency and the range of use of forms ending in –arni, perhaps one should consider them as rarer but still correct for all lexemes in –arnia’
- (225) *Jest to typowy konstatyw zawierający relację z pewnego stanu rzeczy (może raczej stanu ducha nadawcy).* (JK2005-2; Main Body 2, at 83% of text) ‘It is a typical constative, which comprises a report on a certain state of affairs (perhaps rather the sender’s state of mind)’
- (226) *Proponowany tu sposób badania funkcji społecznych i politycznych języka pozwoliłby wyjaśnić także wiele nieporozumień w zakresie innych posunięć normatywistycznych . . . , a być może nawet w zakresie opisu samych systemów językowych.* (SFPS2005-3; Main Body 2, at 79% of text) ‘the way of investigating social and political functions of language proposed here would help explain also many misunderstandings as regards other normative actions . . . , and perhaps even as regards the description of language systems themselves’
- (227) *Z jednej strony podnosi to jeszcze bardziej rangę tych imprez sportowych, z drugiej (co może istotniejsze) – stwarza politykom sprzyjające okazje do nawiązywania...* (PORJ2003-8; Introduction, at 9% of text) ‘On the one hand, it increases the prestige of these sport events, on the other (which is perhaps more important), it creates opportunities for the politicians to establish...
- (228) *Gdzie grupa spółgłoskowa – indukująca jakoby nowe *-u- – powstała dopiero w rezultacie redukcji samogłoskowej.* (ON2004-2; Main Body 1, at 21% of text) ‘where the consonantal group – purportedly initiating the new *-u- -originated as a result of a vocalic reduction’
- (229) *Rzekomo, aby cokolwiek zrozumieć po litewsku, wystarcza podstawowa znajomość języka rosyjskiego.* (ABAS2005-1; Introduction, at 2% of text) ‘Allegedly, to understand anything in Lithuanian it is enough to have a basic knowledge of Russian.’

As regards the distribution of low-value epistemic modifiers in PLA, it can be seen in Fig. 4.54 that although generally more markers were recorded in the second half of the articles, the differences between Introduction and Conclusion on the one hand and Main Body 1 and Main Body 2 on the other were in fact very small. It may be interesting to note, though, that uses where the modal meaning was thematised were somewhat more common in Main Body 1 rather than Main Body 2, as shown in Fig. 4.55.

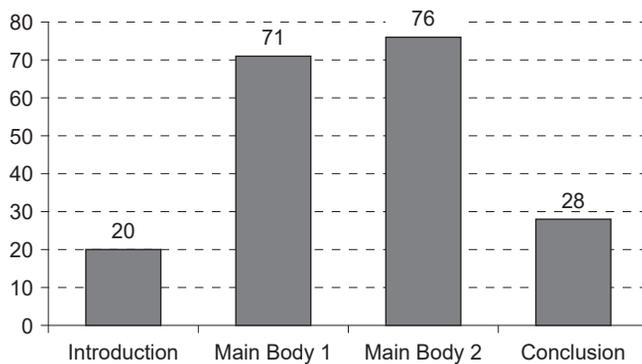


Fig. 4.54 Low-value modal modifiers in article sections (PLA)

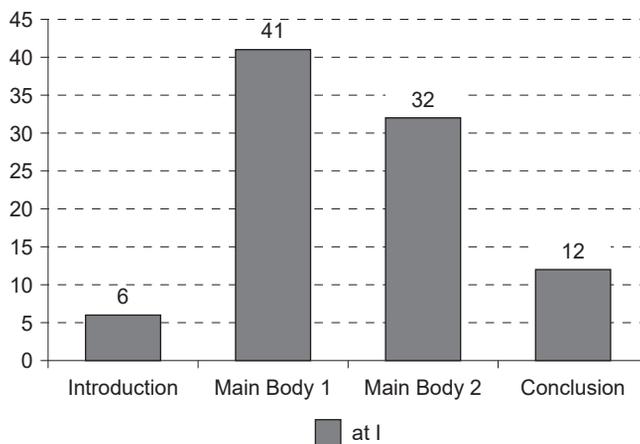


Fig. 4.55 Low-value modal modifiers at I in article sections (PLA)

Epistemic expressions with adjectives and nouns were rare and together comprised only 4% of the low-value data. As can be seen in Table 4.49, adjectives with extraposed subjects were more frequent than nouns, with *możliwe* 'possible' accounting for 40% of the findings (230), followed by *niewykluczone* 'not impossible' (231) and *mało prawdopodobne* 'unlikely' (232). Among the few nouns, *wątpliwość* 'doubt' was more common than others (233). None of the nominal or adjectival records involved 1st person subject.

As for the distribution of low-value epistemic adjectives and nouns in article sections, the data were too scarce to be informative but the figures presented in Table 4.50 show no unexpected differences between the compared text segments.

Table 4.49 Low-value epistemic markers in PLA: Adjectives and nouns

modality marker	epistemic records	associations
<i>mało prawdopodobne</i> [PRAWDOPODOBNY ^{NEUT}] 'unlikely' <i>Jest A, że</i> 'It is A that'	2	with <i>wydaje się</i> 'it seems' 1
<i>możliwe</i> [MOŻLIWY ^{NEUT}] 'possible' <i>Jest A, że</i> 'It is A that'	10 (12)	<i>możliwe jednak, że</i> 'it is possible, however, that' 1 <i>równie możliwe jest, że</i> 'it is equally possible that' 1
<i>niewykluczone</i> [NIEWYKLUCZONY ^{NEUT}] 'not impossible' <i>Jest A, że</i> 'It is A that'	4 (5)	<i>niewykluczone jednak, że</i> 'it is, however, not impossible that' 2
<i>wątpliwe</i> [WĄTPLIWI ^{NEUT}] 'doubtful' <i>Jest A, czy</i> 'It is A whether'	1	
<i>możliwość</i> 'possibility' <i>Jest N, że</i> 'There is N that'	1	<i>dopuszcza się N, iż</i> 'one allows for the N that' 1
<i>podejrzenie</i> 'doubt' <i>Jest N, że</i> 'There is N that'	1	<i>nasuwa to N, że</i> 'this casts N whether' 1
<i>wątpliwość</i> 'doubt' <i>Jest N, czy</i> 'There is N whether' <i>Można mieć N, czy</i> 'One may have N whether'	6 (7)	<i>pozostaje N, czy</i> 'there remains N whether' 2 <i>powstaje N/ może pojawić się N, czy</i> 'there appears N whether' 2 <i>można mieć N, czy</i> 'one may have N whether' 1

Figures in parentheses are normalised to 1 mln words.

- (230) *Możliwe, że formy nowsze złożone powstały pod wpływem języków słowiańskich.* (ABAS2005-1; Main Body 2, at 73% of text) 'It is possible that newer complex forms appeared as a result of the influence of Slavic languages.'
- (231) *Niewykluczone, że właśnie do zakończenia liryku Nad wodą wielką i czystą nawiązuje Słobodnik.* (BPTJ2001-10, Main Body 2, at 78% of text) 'It is not impossible that Słobodnik refers exactly to the ending of the lyric poem Nad wodą wielką i czystą.'
- (232) *Mało też prawdopodobne, by ze znaczenia tego mogło ewoluować realnie poświadczone na gruncie lechickim znaczenie 'cienki i płaski'.* (ON2004-2; Introduction, at 12% of text) 'It is also unlikely that the actually attested Lechitic meaning 'thin and flat' could have evolved from this meaning.'
- (233) *Można mieć wątpliwości, czy jest to kalka z łac. *eclipsis fem.* . . . czy też niezależny termin polski.* (SFPS2004-6; Main Body 2; at 65% of text)

‘One may have doubts whether this is a calque from Lat. eclips fem.
 . . . or an independent Polish term.’

Table 4.50 Distribution of low-value epistemic modality markers in PLA: Adjectives and nouns

	I							MB		Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
	B	M	R and D		<50%	>50%	8	9							
			R	D											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<i>mało prawdopodobne</i> ‘unlikely’ (<i>Jest A, że</i> ‘It is A that’)	1				1				1		2		1	1	
<i>możliwe</i> ‘possible’ (<i>Jest A, że</i> ‘It is A that’)							4	5	9	1	10	4	5	6	
<i>niewykluczone</i> ‘not impossible’ (<i>Jest A, że</i> ‘It is A that’)								3	3	1	4		3	4	
<i>wątpliwe</i> ‘doubtful’ (<i>Jest A, że</i> ‘It is A that’)								1	1		1		1	1	
<i>możliwość</i> ‘possibility’ (<i>Jest N, że</i> ‘There is N that’)							1		1		1	1			
<i>podejrzenie</i> ‘doubt’ (<i>Jest N, że</i> ‘There is N that’)								1	1		1		1	1	
<i>wątpliwość</i> ‘doubt’ (<i>Jest N, że</i> ‘There is N that’)							5	1	6		6	5	1	1	
Total	1				1		10	11	22	2	25	10	12	14	

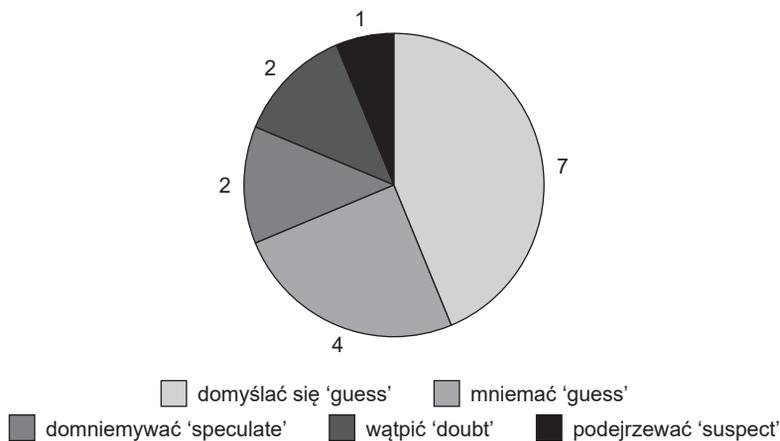


Fig. 4.56 Lexical verbs as low-value epistemic markers in PLA

Lexical verbs constituted a small fraction of the low-value epistemic markers in PLA. There were five such verbs attested in the corpus, which together accounted for merely 3% of the findings. As shown in Fig. 4.56, the most frequent unit in this group was *domyślać się*, followed by *mniemać* ‘guess’. This forms a sharp contrast with the results obtained for middle-value markers, where lexical verbs comprised 40% of the data.

Table 4.51 Low-value epistemic markers in PLA: Lexical verbs

verb	epistemic uses	
<i>domniemywać</i> ‘speculate’	2	
	<i>Można domniemywać, że</i> ‘one can speculate that’ type with past tense in <i>that</i> -clause	2 1
<i>domyślać się</i> ‘guess’	7	
	<i>Należałoby się domyślać, że</i> ‘it would be reasonable to guess that’ type	1
	<i>Można się domyślać, że</i> ‘one can guess that’ type parentheticals	1 1
	with negation in <i>that</i> -clause	1
	<i>Pozwala to domyślać się, że</i> ‘It makes it possible to guess that’ type	1
	<i>Domyślam się, że</i> ‘I guess that’ type	4
	<i>domyślam(y) się</i> ‘I/ We guess’	2
	<i>możemy się domyślać</i> ‘we can guess’	2
<i>mniemać</i> ‘guess’	4	
	<i>Można mniemać, że</i> ‘one can guess that’ type parentheticals	1 1
	<i>Gdyby się mniemało, że</i> ‘if one guessed that’ type with negation in <i>that</i> -clause	1 1
	<i>Mniemam, że</i> ‘I guess that’ type parentheticals	2 1
	<i>mamy prawo mniemać</i> ‘we are entitled to guess’	1
<i>podejrzewać</i> ‘suspect’	1	
	<i>Każę to podejrzewać, że</i> ‘it makes it necessary to suspect that’ type	1
<i>wątpić</i> ‘doubt’	2	
	<i>Można wątpić, czy</i> ‘one can doubt whether’ type	2
	with <i>jednak</i> ‘however’	2
	with hypothetical mood in <i>that</i> -clause	1

Data for particular verbs are presented in Table 4.51. The following structures were attested: impersonal forms with non-inflectional verb *można* ‘one can’ and non-epistemic modal verb *należy* ‘one should’ (234-235), an expression with verb *pozwolić* ‘allow’ of the *to pozwala V* ‘this allows one to V’ type (236), an expression with verb *kazać* of the *to każe V* ‘this makes it necessary

to V' type (237), an impersonal structure with reflexive pronoun *się* following 3rd person singular neutrum verb in the conditional (238), and forms with 1st person subject (239).

- (234) *Można wreszcie domniemywać, że być może wysoką pozycję angielskiego wzmocniło dyskretne, ale twarde współzawodnictwo kontynentalnych potęg Europy.* (PORJ2005-15; Main Body 1, at 15% of text) 'Finally, one can speculate that perhaps the high position of English was strengthened by the discreet but tough competition of European continental powers'
- (235) *Z rozszanych w tekście przykładów należałoby się domyślać, że odpowiedź według autora jest twierdząca.* (SFPS2004-11; Main Body 1; at 25% of text) 'From the examples scattered in the text it would be reasonable to guess that the answer in the author's opinion is positive'
- (236) *Pojawienie się ich przy łamaniu wyrazu . . . pozwala domyślać się, że są konsekwencją przyjętej w tłoczni zasady porządkującej układ graficzny strony.* (SFPS2001-12; Main Body 1, at 42% of text) 'Their appearance where a word was divided . . . makes it possible to guess that they result from a rule ordering the lay-out of a page adopted in the print shop'
- (237) *Jednak pewien mechanizm językowy . . . każe podejrzewać, że potoczna etymologia . . . za osnowę derywatu uznaje...* (EL2002-4; Main Body 2, at 25% of text) 'however, a certain linguistic mechanism . . . makes it necessary to suspect that the popular etymology regards . . . as the derivation base'
- (238) *Po wtóre, nie wynikałoby to również, gdyby się mniemało, że nie ma dobrych środków na uwiarygodnienie czy udowodnienie takich sądów.* (PORJ2006-1' Main Body 1, at 11% of text) 'Secondly, it would not follow either if one suspected that there are no good ways in which such statements can be made credible or proved.'
- (239) *Kontekst kulturowy związku i jego tło metaforyczne . . . wywodzi się, jak mniemam, z wartości obyczajowych czasów saskich.* (SFPS2001-6; Main Body 1, at 40% of text) 'The cultural context of this combination and its metaphorical background . . . derives, I guess, from the values and customs of the Saxon times'

The dominating orientation in this small group was objective, as shown by over 60% of the records (234-238), with only two verbs — *domyślać się* and *mniemac* 'guess' — attested in the subjective form (239). In three-fourths of the data, the lexical verbs were used in formulaic expressions which (additionally) objectified the epistemic judgement: with non-inflected verb *można* 'one can' (234), with non-epistemic modal verbs *należy* 'one should' (235) and *móc*

‘can’ (240), with verbs *pozwalać* ‘allow’ (236) and *kazać* ‘make it necessary to’ (237), or in structure *mieć prawo* ‘be entitled to’ (241), all of which imply that there are objective reasons for making the conjecture. In three cases the verbs were used parenthetically (239).

- (240) *Możemy się domyślać, że chodzi tu o rzeczywistość opisywaną polskim granatowe niebo (burzowe)*. (SFPS2004-7; Main Body 2, at 58% of text) ‘we can guess that it refers to the reality described in Polish by granatowe niebo (stormy)’
- (241) *Mamy prawo mniemać, że to potomek wcześniej notowanych Katulów przybyłych ze Szczytna*. (SFPS2001-2; Main Body 1, at 46% of text) ‘we are entitled to guess that it is a descendant of Katule, a family name recorded earlier, who came from Szczytno’

Table 4.52 shows the occurrence of low-value lexical verbs in article sections, but with the small number of examples recorded in the texts, it is impossible to talk about tendencies or preferences in their distribution.

Table 4.52 Distribution of low-value epistemic modality markers in PLA: Lexical verbs

1	I	MB							Total for MB	C	Total	MB1 (3, 4, 5, 8)	MB2 (6, 7, 9)	MB2 + C
		B	M	R and D		<50%	>50%							
				R	D									
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<i>domniemywać</i> ‘speculate’						1		1	1	2	1		1	
<i>domyślać się</i> ‘guess’						4	3	7		7	4	3	3	
<i>mniemać</i> ‘guess’						3	1	4		4	3	1	1	
<i>podejrzewać</i> ‘suspect’					1			1		1		1	1	
<i>wątpić</i> ‘doubt’						1	1	2		2	1	1	1	
all					1	9	5	15	1	16	9	6	7	

4.3.3 Discussion

The number of low-value epistemic markers in the two corpora under investigation differs widely, with 1,525 tokens per one million words in ELA

and 691 tokens per one million words in PLA. This gives a ratio of approximately 2.2 to 1 (as contrasted with 2.7 to 1 for high-value and 1.2 to 1 for middle-value markers). An analysis of the categories of markers used to express doubt or low levels of commitment brings similar results for English and Polish texts: the most frequently used items were modal verbs, which accounted for over 70% of the findings in ELA and 60% in PLA, followed by epistemic modifiers, which comprised over 20% of ELA records and over 30% of PLA records. As shown in Fig. 4.57, the role of epistemic adjectives, nouns and lexical verbs was marginal.

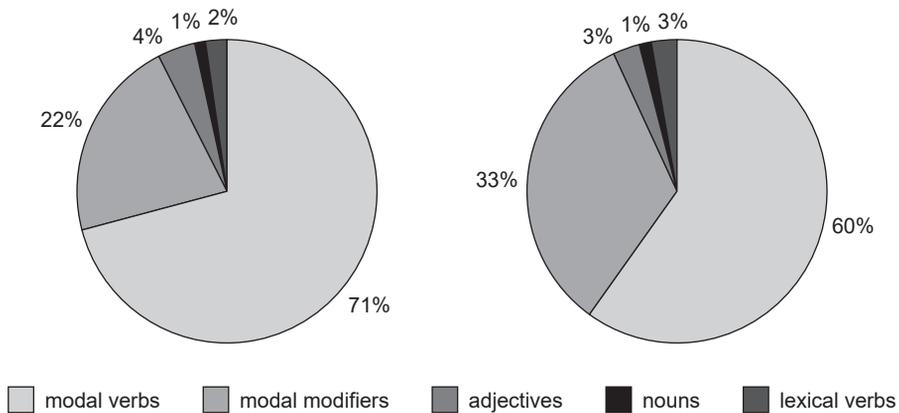


Fig. 4.57 Categories of low-value epistemic markers in ELA (left) and PLA (right)

As shown in Fig. 4.58, although all categories of markers occurred more often in English than in Polish texts, the difference was most strongly marked in the case of modal verbs, that is the group of markers which dominated the findings in both corpora, and epistemic constructions with adjectives and nouns, which were otherwise rare in both sets of texts. These markers were recorded about 2.6 times more frequently in ELA than in PLA. In the case of epistemic modifiers the difference was of the order of 1.4 to 1 and thus much less conspicuous.

As can be seen in Fig. 4.59, both in English and in Polish texts the dominant realisation was implicit, recorded approximately in 93% of the data for each corpus. This point of similarity was connected with the fact that modal verbs and modifiers together accounted for the same very high proportion of findings in ELA and PLA. Some differences were observed in the orientation: although both in English and in Polish the preferred orientation was subjective, the extent of the preference was different and reached 73% for ELA,

where modal verbs dominated the findings and where three fourths of lexical verb records were subjective, and only 61% for PLA, where epistemic modifiers were proportionally more common and where the dominant orientation of lexical verbs was objective.

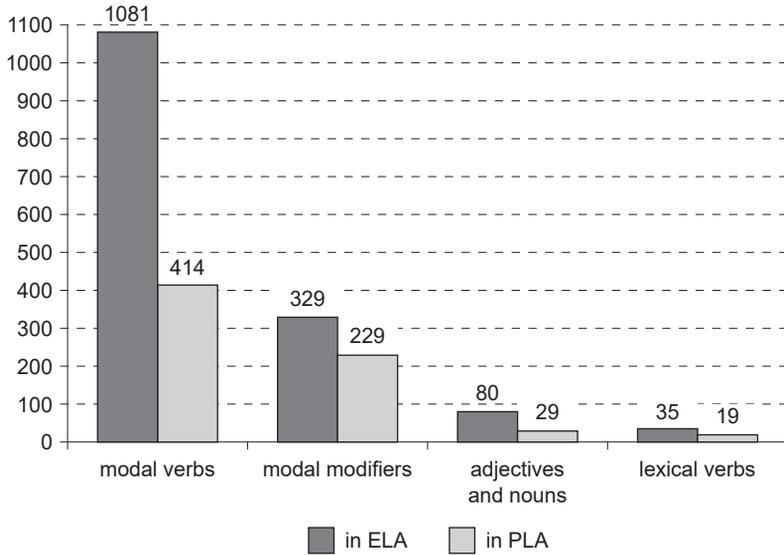


Fig. 4.58 Low-value modal verbs, modifiers, adjectives and nouns, and lexical verbs in ELA and PLA (Figures normalised to 1 mln words.)

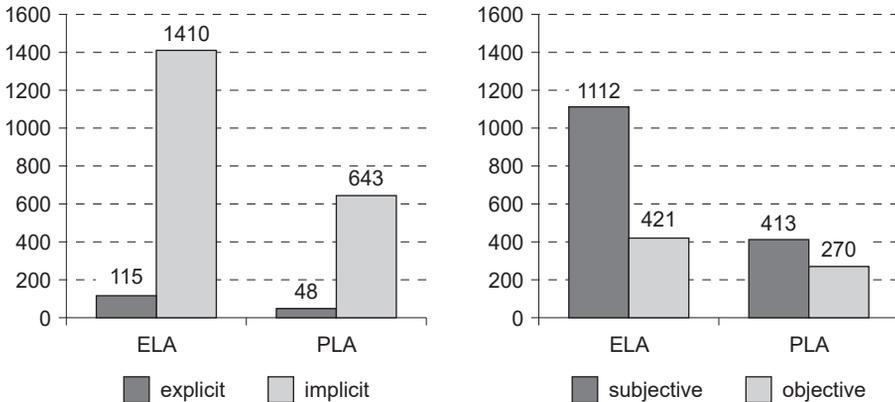


Fig. 4.59 Low-value modal meanings in ELA and PLA: explicit and implicit (left); subjective and objective (right) (Figures normalised to 1 mln words.)

If we turn to the distribution of low-value markers in the article sections, Fig. 4.60 shows that in both sets of texts they were slightly more common in Conclusion than in Introduction and that the difference was somewhat greater in PLA than in ELA. Both corpora displayed also a preference for low-value markers to appear in the second rather than in the first half of the main body of text, but in this case the tendency was more strongly marked in English articles. In spite of those differences between English and Polish texts, it must be noted that the pattern of distribution of markers of uncertainty and doubt was similar in both corpora.

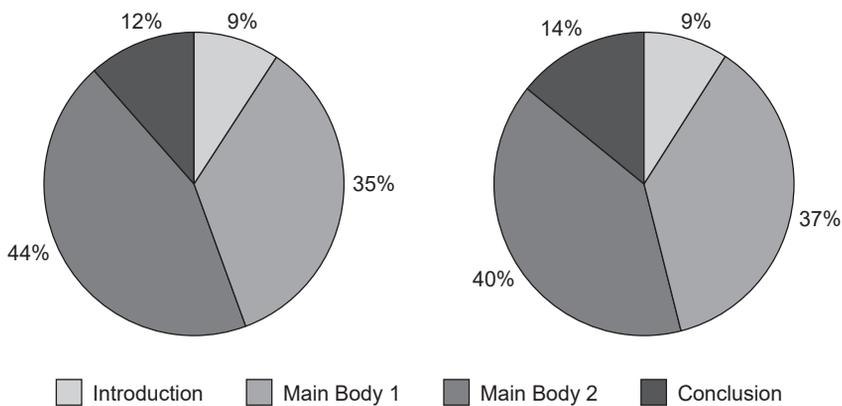


Fig. 4.60 Distribution of low-value modality markers in article sections in ELA (left) and PLA (right)

As shown in Table 4.53, in all segments of English texts there were more low-value markers than in the corresponding segments of Polish texts. The difference was most strongly marked in Main Body 2, where low-value markers were found to be 2.4 times more frequent in the English part of the corpus, and least conspicuous in Conclusion, where they outnumbered Polish markers by 1.8 to 1. It may be interesting to note that the number of modal modifiers used in Introductions and Conclusions in both sets of texts was comparable.

In English articles, 9% of low-value modality markers expressed possibility that something was not the case, which is a similar ratio to that for English middle-value markers (see Section 4.2.3). By contrast, of Polish low-value markers only 4% indicated negative possibility. In English negative possibility was conveyed mainly by modal verbs *may* and *might*, as shown by 75% of the records, and by modal modifier *perhaps*, which accounted for 16% of the data, as in (242)-(244). In these negative contexts *perhaps* often occurred in formulaic expressions, such as *it is not surprising that* or *it is not insignificant*

that, as in (245). In Polish 45% of negative possibility records involved modal modifier *może* 'perhaps'; the second most frequent marker was modal verb *móc* 'may' with 32% of the data, as in (246) and (247).

Table 4.53 Distribution of low-value epistemic modality markers by categories in ELA and PLA

1	A	I	MB								Total for MB	C	X	Total	MB1 (4, 5, 6, 9)	MB2 (7, 8, 10)	MB2 + C
			B	M	R and D		<50%	>50%									
					R	D											
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
modal vbs	7	110	41	24	29	35	58	275	368	830	132	2	1081	369	461	593	
modal modifiers	2	26	9	5	9	5	16	99	124	267	33	1	329	122	145	178	
adjectives and nouns		1	2	2	1	2	12	21	31	71	7		80	26	45	52	
lexical verbs		3				1		14	14	29	3		35	14	15	18	
all in ELA	9	140	52	31	39	43	86	409	537	1197	175	3	1525	531	666	841	
modal vbs		38	1	2	5	18	12	141	135	314	62		414	149	165	227	
modal modifiers		24			1	5	8	82	76	172	33		229	83	89	122	
adjectives and nouns		1				1		12	13	26	2		29	12	14	16	
lexical verbs							1	11	6	18	1		19	11	7	8	
all in PLA		63	1	2	6	24	21	246	230	530	98		691	255	275	373	

Figures are normalised to 1 mln words.

- (242) *Others had siblings who were only a year younger than themselves, and thus may not have had ongoing infant exposure.* (LC2003-1; Conclusion, at 85% of text)
- (243) *Grice himself might not have been opposed to the idea of an intuitive mind-reading ability.* (L2005-8; Main Body 1, at 43% of text)
- (244) *Perhaps such claims are not as secure as one might wish them to be* (LS2001-5; Main Body 2, at 74% of text)
- (245) *It is thus perhaps not surprising that Nyawaygi draws its weight distinction between CVV and CVC rather than between CVC and CV.* (L2202-3; Main Body 2, at 62% of text)
- (246) *Jednocześnie lekceważenie wyrażone . . . w tym samym wypowiedzeniu nie zasługuje może jeszcze na miano agresji...* (JK2005-7; Main Body 1, at 31% of text). 'At the same time disrespect expressed . . . in this utterance does not perhaps deserve to be called aggression yet..'

- (247) *Samo poszukiwanie licznych dowodów funkcjonowania takiego mechanizmu może nie zadowalać w pełni.* (JK2003-1; Main Body 1, at 31% of text) ‘The sole search for rich evidence of the operation of this mechanism may not satisfy to the full’

The distribution of negative possibility in English Introductions and Conclusions was balanced and approached 10% in each case. However, as shown in Table 4.54, the main body uses tended to cluster in the second half of the text. Polish data turned out to be too few to form a meaningful picture, but there was a preference for negative possibility to occur in the final segment of text.

Table 4.54 Distribution of negative possibility in ELA and PLA

	I	Total for MB	C	Total	MB1	MB2	MB2 + C
1	2	3	4	5	6	7	8
negative possibility in ELA	13	106	12	132	39	67	79
negative possibility in PLA	2	17	7	26	9	8	15

Figures are normalised to 1 mln words.

In ELA, low-value epistemic markers received additional emphasis in 11% of the cases, which is similar to the results obtained for middle-value markers. The most common strengthening device was fronting (248) and the use of adverbs, including *well* with modal verbs (249). With regard to the Polish part of the corpus, low-value epistemic markers received additional emphasis in 16% of the data, which is a similar ratio to that obtained for Polish high-value markers. The dominating strategy was fronting (250). Both in ELA and in PLA, low-value markers were also found to occur with additional signals of hypotheticality or doubt. These, however, were rarer than emphatic uses and comprised 8% of the low-value records in both sets of texts. In English, the most frequent strategy was the use of modal verbs (251) and the use of epistemic copula *seem/ appear* (252). In Polish, the dominating strategy was the use of hypothetical mood (253).

- (248) *Possibly, children making such substitutions are producing the closest approximation of the intended gesture that they have not yet acquired or cannot produce for physical reasons.* (L2006-7; Main Body 2, at 61% of text)
- (249) *Yet, as has been shown, it may well be the grammar as it stands that resists the speaker's intended meanings.* (LS2005-5; Main Body 2, at 54% of text)

- (250) *Może zatem nie są one aż tak historyczne, jak zwykło się sądzić?* (BPTJ2001-10; Conclusion, at 99% of text) ‘Perhaps then they are not as historical as one would think.’
- (251) *Throughout this duration, we might suspect that attention to similarity has decreased while attention to difference has increased.* (LS2002-9; Conclusion, at 91% of text)
- (252) *It also seems possible that some speakers may control both hierarchies, each associated with a different linguistic register.* (L2001-3; Main Body 2, at 76% of text)
- (253) *Do dyspozycji badacza pozostaje dość szeroki wachlarz możliwości usuwania wskazanej trudności - od założenia późnego utworzenia nazwy . . . aż po przyjmowanie możliwości wpływu niemieckiego . . . za czym mogłyby [MÓC ^{3 PL NON-MASC-PERSONAL HYP}] przemawiać również wahania samogłoski rdzennej w obu nazwach.* (ON2004-2; Main Body 2, at 92% of text) ‘a researcher has at his or her disposal a number of ways out of this difficulty – from the assumption that the name was coined late . . . to the assumption that it developed under the influence of German . . . which might also be supported by the alternations of the root vowel in both names’

An analysis of the distribution of the emphatic uses of low-value markers shows that in ELA they were more frequent in the second half of text — this preference was particularly visible in modals concurring with *well* and in epistemic adjectives used with intensifying adverbs, but it was also present in the case of fronting. By contrast, in PLA emphatic records were slightly more frequent in Main Body 1 than in the second half of the text. In this group of texts there was also a preference for qualified, hypothetical forms to occur in Conclusion rather than in Introduction. No such relation was discovered in the English part of the corpus.

The results of the analysis of the use of low-value epistemic modality markers in English and Polish linguistics articles could be summarised in the following points:

- the number of low-value markers was found to be 2.2 times greater in ELA than in PLA;
- all categories of markers occurred more often in ELA than in PLA; the difference was least conspicuous in the case of modifiers (ratio 1.4 : 1);
- in ELA all sections of text had more low-value epistemic markers than the corresponding sections in PLA; the difference was greatest for Main Body 2 and least conspicuous for Conclusion;

- the dominant orientation of lexical verbs was found to be subjective in ELA (75%) but objective in PLA (60%);
- negative possibility was more frequently attested in ELA (9%) than in PLA (4%);
- low-value markers more often received additional emphasis in Polish (16%) than in English articles (11%);
- these emphatic uses tended to be more frequent in the second half of text in ELA; in PLA they were somewhat more frequent in Main Body 1;
- qualified, hypothetical uses of low-value markers tended to be more common in Conclusion than in Introduction in PLA; no such relation was discovered in ELA.

The following similarities or correspondences were noticed:

- the categories of markers investigated had a similar share in both corpora: in both sets of texts modal verbs were the most frequently used markers of low-value epistemic modality, as demonstrated by 70% of the records in ELA and 60% in PLA; the second category in terms of frequency were modifiers, (20% and 30% respectively);
- the dominant realisation was implicit in both ELA and PLA (93%);
- the preferred orientation was found to be subjective in both corpora, but the preference was greater in ELA than in PLA (73% and 61% respectively);
- the distribution of low-value epistemic markers in the article section was similar in both corpora: both in ELA and in PLA they were more common in Conclusion than in Introduction, but the difference was somewhat greater in PLA; both in ELA and in PLA they were more often used in the second than in the first half of the main body of text, but this tendency was more distinct in ELA;
- low-value modifiers were used with a similar frequency in Polish and English Introductions and in Polish and English Conclusions;
- low-value markers concurred with signals of hypotheticality in about 8% of the data in both corpora.

5. Conclusions

The results of the analysis of the use of epistemic modality markers in English and Polish linguistics articles, presented in more detail in Chapter 4, show that on the whole they were much more frequent in English than in Polish texts. As can be seen in Fig. 5.1, English authors signalled their epistemic stance almost twice as often as their Polish colleagues, the ratio being 1.9 to 1. A closer inspection of the results further demonstrates that although the tendency to use more epistemic markers in English than in Polish linguistics articles was valid for all modal values, it was most conspicuous in the case of high-value epistemic modality, which was 2.7 times more frequently expressed in English than in Polish. As shown in Fig. 5.2, English authors used also considerably more markers of doubt and uncertainty than Polish linguists, the ratio in this case being 2.2 to 1. The situation was slightly different in the case of middle-value markers, which, while more frequent in English than in Polish, were not a major point of difference between the two sets of texts, as shown by the ratio of 1.2 to 1.

The comparatively mild difference in the number of middle-value markers between the two corpora draws attention to the fact that English and Polish authors differed not only in how often they marked their epistemic stance, but also in what values they marked most often. Fig. 5.3 demonstrates that in English texts the most frequently marked modal value was low, with 43% of the records for ELA, followed by high, with 31% of the findings. Middle values accounted only for 26% of the data. By contrast, in Polish texts most frequently marked were middle modal values, as shown by 42% of the data, followed by low values, which comprised 37% of the findings, with high-value epistemic markers accounting for only 21% of the records.

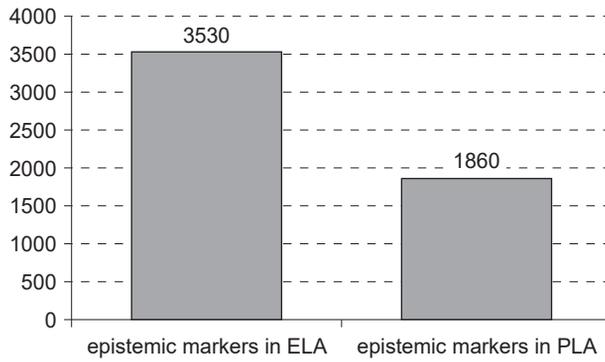


Fig. 5.1 Epistemic markers in ELA and PLA (Figures normalised to 1 mln words.)

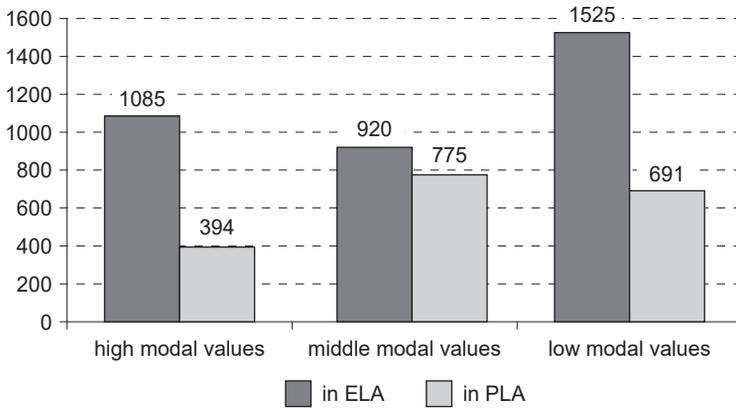


Fig. 5.2 Epistemic modal values in ELA and PLA

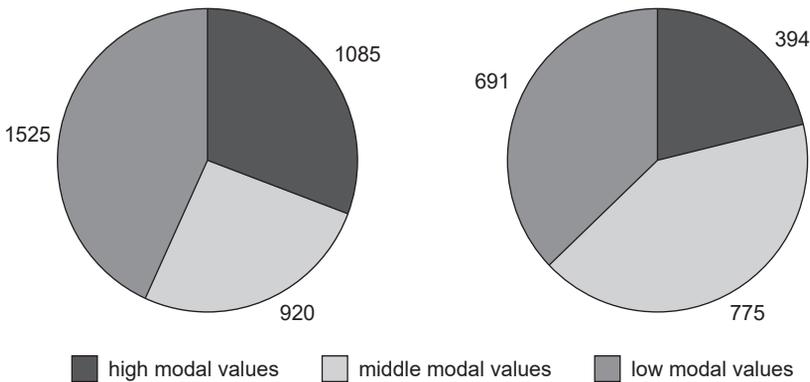


Fig. 5.3 Proportion of high, middle and low epistemic values in ELA (left) and PLA (right)

The overview of epistemic modality markers in English and in Polish presented in Section 2.3 shows that while both languages use modal verbs, modifiers, nouns, adjectives and lexical verbs to encode epistemic meanings, they differ widely in the status and array of modal verbs, which are central to the epistemic system in English and which do not form such a well-defined category in Polish. This difference in the two language systems is reflected in the results of the analysis. As shown in Fig. 5.4, 61% of the recorded epistemic meanings in English were transferred by modals and quasi-modals, which dominated the findings. The next most frequent group of markers, modal modifiers, accounted for only 22% of the English data. By contrast, in Polish the figures for epistemic modifiers and modal verbs, the two most frequently attested categories of markers, were more even and amounted to 40% and 38% respectively. Lexical verbs, in terms of frequency the third category of markers in both corpora, were used as markers of epistemic meanings in 13% of English and 18% of Polish data. The role of structures with epistemic adjectives and nouns was marginal (4% in both cases).

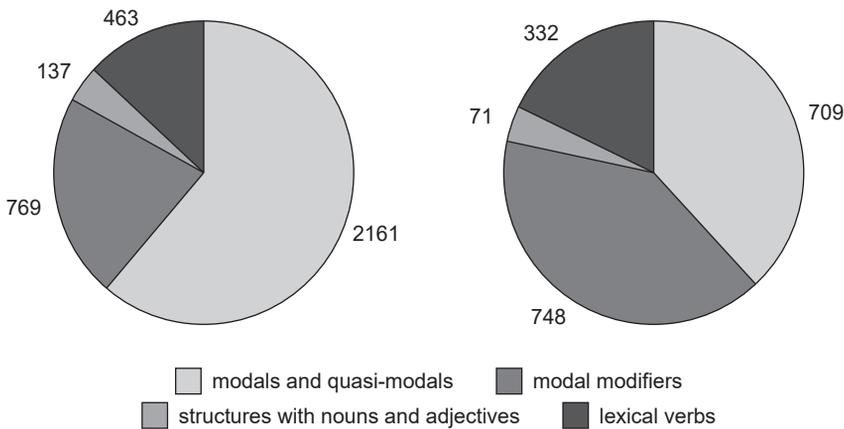


Fig. 5.4 Categories of epistemic markers in ELA (left) and PLA (right)

With regard to the distribution of epistemic modality markers across sections, graphs in Fig. 5.5 show that, on the whole, while the two sets of texts clearly differed in terms of the dominating modal values, the dynamics of all three values was similar in both corpora: there were more epistemic markers in the second half of the main body of text than in the first half — a tendency most strongly marked in the case of English middle- and low-value markers — and slightly more markers in Conclusion than in Introduction — a tendency observed in all groups of markers except Polish high-value markers, which were actually somewhat more common in the opening section of texts than in Conclusion. In the case of mid-

dle- and low-value markers, the difference between Conclusion and Introduction was slightly more noticeable in Polish but in general the number of markers recorded in the first and the last text segments was not dramatically different.

However, the results for Introduction and Conclusion are put in a different perspective if one calculates the occurrences of epistemic markers in text sections per ten thousand words. This calculation is shown in Table 5.1, where figures in columns 3-6 correspond to the number of markers actually attested in the corpus, and figures in columns 7-10 refer to the number of occurrences per ten thousand words of the section. These data make possible a number of observations. Firstly, in terms of the number of markers, Introduction appeared more similar to Main Body than Conclusion, which contained much more epistemic markers than the other sections. This observation holds for both corpora, although the similarity between Introduction and Main Body was greater in the case of Polish texts. Secondly, the most significant differences between Introduction and Conclusion in Polish resided in the use of low- and middle-value markers, which were more than twice as frequent in the final than in the opening text section. High-value markers in Polish texts — the least frequent group in PLA — were markedly different in this respect: their frequency in Introduction and Conclusion was comparable and higher than in the main body of text. Thirdly, in English all three groups of markers were much more frequent in Conclusion than in Introduction; the difference was most significant in the case of low-value markers but even here the ratio was below 2 to 1 (lower than for Polish low- and middle value markers).

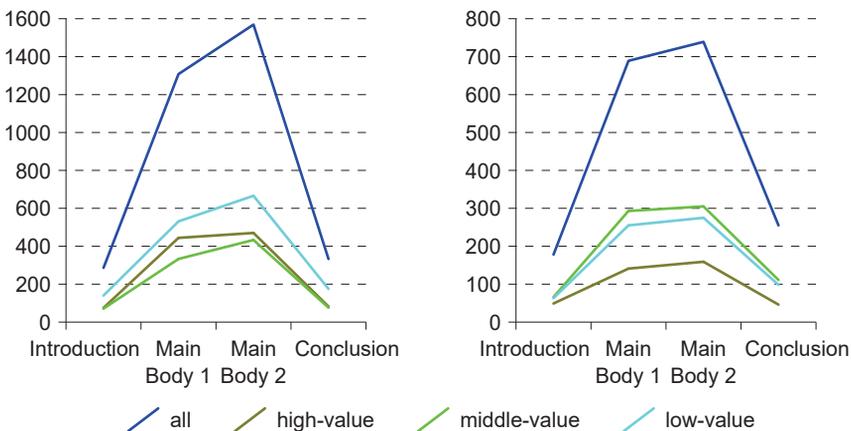


Fig. 5.5 Distribution of epistemic modality markers in ELA (left) and PLA (right): Introduction, Main Body and Conclusion

Please notice the difference in scale. (Figures normalised to 1 mln words.)

Table 5.1 Frequency of epistemic markers in Introduction, Main Body and Conclusion: ELA and PLA

Section	Number of running words	Epistemic markers recorded in sections				Epistemic markers per 10,000 words (calculated for sections)			
		high	middle	low	total	high	middle	low	total
1	2	3	4	5	6	7	8	9	10
Introduction ELA	194,000	158	148	296	602	8.1	7.6	15.3	31.0
Main Body ELA	1,702,000	1,920	1,610	2,512	6,042	11.3	9.5	14.8	35.6
Conclusion ELA	138,000	171	159	368	698	12.4	11.5	26.7	50.6
Introduction PLA	84,000	42	57	53	152	5.0	7.0	6.0	18.0
Main Body PLA	660,000	254	507	451	1,212	3.8	7.7	6.8	18.3
Conclusion PLA	65,000	39	93	84	216	6.0	14.3	12.9	33.2

In terms of realisation, in both corpora there was a marked preference for implicit epistemic evaluation, as expected from the high proportion of modals and modifiers, which together comprised 83% of the English and 78% of the Polish data (Fig. 5.6, left). This preference was particularly well marked in the case of high- and low-value markers, where it reached, respectively, 98% and 93% for ELA and 94% and 93% for PLA. The ratio for middle-value markers was more balanced due to the higher proportion of lexical verbs in both corpora.

An analysis of orientation of epistemic evaluation in English and Polish texts shows that in English subjective orientation prevailed, as demonstrated by 69% of the records, while in Polish there was a slight preference for objective forms, which accounted for 57% of the data (Fig. 5.6, right). As can be seen in Fig. 5.7, the preference for subjective evaluation in English was very conspicuous in the case of high-value modality, where it reached 80% of the records, but was also distinct in low-value epistemic evaluation (73%). The preference for objective forms in Polish was most strongly marked in the case of middle-value modality, where it reached 76% of the data. In the case of low-value modality, subjective forms were more numerous than objective, but compared to the English data, the difference was milder. It may be interesting to note that, both for middle- and low-value evaluation, the dominant orientation of Polish lexical verbs was objective (72% and 60% respectively), while in English,

lexical verbs were more often used subjectively (54% and 75% for middle and low epistemic values).

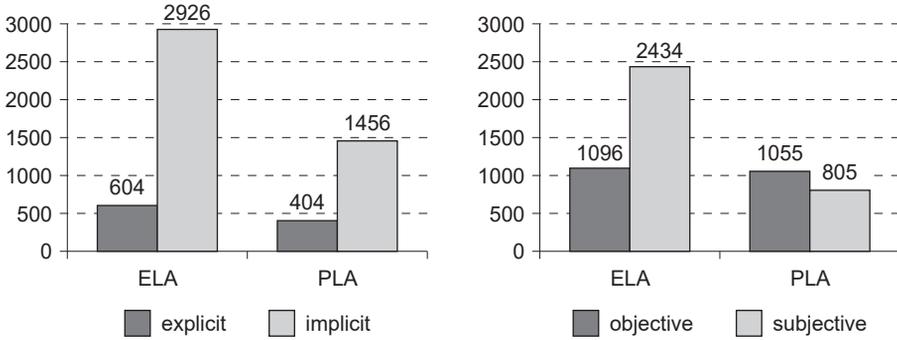


Fig. 5.6 Realisation and orientation of epistemic values in ELA and PLA: explicit and implicit (left); objective and subjective (right)

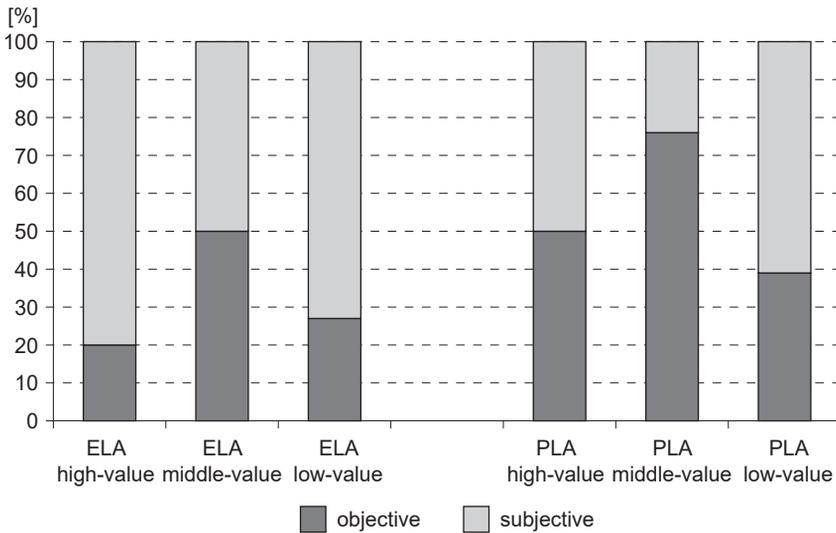


Fig. 5.7 Subjective and objective orientation for particular epistemic values in ELA and PLA

Certainty that something was not the case was expressed with a similar frequency in English and in Polish and comprised 16% of the data for high-value modality. In Polish these negative records tended to be slightly more frequent in the first half of text; in English they tended to be more popular in the second half. Also similar were the figures for negative probability, which was attested in 9% of English and 10% of Polish middle-value data. In English these records were more common in Introduction than in Conclusion; in Polish the

situation was reversed. There were some differences noticed in the figures for negative possibility, which in English was recorded in 9% of the data for low-value modality and in Polish merely in 4% of the data.

Although signals of certainty occurred much more rarely in Polish than in English data, in Polish texts they were more often thematised or amplified, as shown by 6% of English and 17% of Polish high-value records. In English these emphatic uses tended to be more common in the second half of the article. Qualified or hypothetical uses of high-value modality markers were rare in both corpora, but more frequent in Polish (1% and 3% of high-value markers in English and Polish respectively), where they occurred somewhat more often in the second half of text.

Middle-value modality received additional emphasis in 10% of English and 11% of Polish data for this group of epistemic markers. Also similar was their use with downtoners or signals of hypotheticality: 15% in the case of English and 16% in the case of Polish middle-value records. With regard to low-value markers, they received additional emphasis in 11% of English and 16% of Polish data. In the case of English these emphatic uses were more common in the second half of text. Hypothetical, tentative uses of low-value modality were less frequent and comprised 8% of records for this group of markers in both corpora. In Polish texts, these tentative uses tended to be more common in Conclusion than in Introduction.

The analysis has brought the following answers to the questions asked at the onset of the study:

— Is the epistemic evaluation marked with the same frequency in both sets of articles?

No, it is not. English texts contain almost twice as many signals of epistemic evaluation as Polish texts. Moreover, in English subjective orientation is more than twice as common as objective orientation, while in Polish objective forms are more common than subjective uses. In both sets of texts implicit realisations prevail over explicit forms.

— Are high, middle and low degrees of confidence marked with a similar frequency? Are there any differences in this respect between English- and Polish-language articles?

The answer to the first question is: no, they are not. In both sets of texts the figures for high- middle- and low-values are different, and the way in which they differ is language-dependent. In English low-value epistemic evaluation is marked noticeably more often than other values (43% of the records), followed by high-value and middle-value evaluation (31% and 26% respectively). By contrast, Polish authors most often mark middle-value epistemic judgement

(42% of the data), less frequently low-value judgement (37% of the findings), and are frugal with markers of certainty (21%).

— What categories of markers prevail as exponents of particular modal values in the two sets of texts?

Generally speaking, the findings in both corpora are dominated by modal verbs and modal modifiers, which together comprise 83% of English and 78% of Polish data; however, the proportion between them varies significantly. In English the most frequently attested category are modals, which account for 61% of the data and which dominate the groups of high (79%) and low (71%) modal values. In the case of middle-value modality, the proportion between modal verbs and modifiers in English is balanced, with modifiers slightly outnumbering modals. In Polish, the most frequently attested category are modal modifiers, which comprise 40% of the data, modals being the second group in terms of frequency (38%). However, if one looks at particular modal values, it turns out that modals actually dominate the records for high (50%) and low (60%) modal values in Polish texts. It is middle-value modality where they are heavily underrepresented and where the most frequently recorded categories are modifiers (44%) and lexical verbs (40%). It is also worth noting that lexical verbs are more commonly used as markers of epistemic meanings in Polish than in English texts, as shown by 18% and 13% of the records respectively. In Polish their dominating orientation is objective; in English subjective uses prevail.

— Do epistemic markers tend to cluster in particular article sections? Are there any differences in their distribution that might be related to the value of the marker? Are there any points of difference in this respect between English- and Polish-language articles?

Epistemic markers have been found to be more frequent in Conclusion than in the other text sections, and this observation applies to both English and Polish articles. In the case of English, all three modal values occur more frequently in the final text segment than elsewhere, but this trend is most strongly marked in low-value markers. As for the Polish data, low- and middle-value markers are much more frequent in Conclusion than in the other segments of text; however, the frequency of high-value markers in Introduction and Conclusion is comparable.

— Is there any indication of potential differences in what tends to be epistemically qualified in these two sets of texts?

The obtained results do not provide any direct indication regarding the objects of epistemic evaluation in the two sets of articles. However, the findings show that English authors rely on epistemic markers to a greater extent than Polish authors and that this trend is visible in all studied article sections

and for all modal values. This observation can possibly be related to three factors. Firstly, there is the degree of writer's presence in the text — the personal element in discourse — referred to as evaluation (e.g., Thompson and Hunston, 2000), appraisal (e.g., Martin, 2000) or stance (e.g., Hyland, 1999), which subsumes, among other things, the need to mark the degree of authorial commitment to the truth of the presented propositions. The findings indicate that English-language articles are marked by a higher degree of authorial presence than Polish-language texts, as indicated both by the greater number of epistemic markers used in all text sections and by the preference for subjective orientation of epistemic evaluation.

Secondly, there is the extent to which writing scholars find it appropriate to engage in a dialogue with others: their readers, fellow authors, the discourse community and the current state of the art. Dialogic involvement will imply considering (possibly conflicting) points of view, reconciling perspectives, looking for shared background, anticipating objections, weighing counterarguments, making concessions and highlighting strong arguments. Epistemic markers, low- and high-value epistemic markers in particular, would seem to be well-tuned indicators of this polyphony. In this respect they may be evidence of a complex negotiation of stands and hence of a sharp awareness of the readers rather than a direct declaration of the author's commitment. The results of this research would again point to a higher degree of dialogic involvement manifest in English articles, where high- and low-value markers outnumber those used by Polish authors by 2.7 and 2.2 respectively.

Thirdly, there is the sociological concept of face and face phenomena which come to the fore in interpersonal contacts and communicative events (Goffman, 1967). In the context of written academic discourse, face would refer to the perception of the self the authors negotiate with their readers by positioning themselves as researchers in relation to other members of the discourse community, by attending to the values declared by this community, and by showing respect to the public self-images of its members (Warchał, 2014). Inextricably linked with culture, face and face-work will be realised in various ways in different languages, with writers assuming different politeness strategies (such as, e.g., hedging claims to knowledge), showing varying degrees of determination to avoid direct imposition or conflict (e.g., by making concessions and qualifying statements), and focused to a varying extent on achieving solidarity with the readers (e.g., by emphasising shared background knowledge). The observed differences in the use of epistemic modality markers, which are helpful tools in achieving some of these goals, may be evidence of important contrasts in the way English and Polish authors perceive their

relation with and their responsibility to the readers and the broader discourse community. Thus, English authors rely to a far greater extent than their Polish counterparts on low-value markers, which may be successfully used to qualify statements, make concessions, admit competing approaches and hedge new claims, and on high-value markers, which may be used to emphasise shared knowledge and assist the reader in following the author's way of reasoning. By contrast, Polish authors seem to find middle-value markers, which convey reasonable likelihood or plausible expectation, relatively more useful than their English colleagues (and indeed more useful than low- and high-value markers) and rely to a greater extent on objective orientation of epistemic evaluation. Both these preferences contribute to a lesser visibility of the author and conspire to achieve the impression of facts speaking for themselves, possibly protecting the writer from criticism.

Moreover, the observed differences in the use of epistemic markers may also be related to some generic differences in the structure of the journal article in the two languages. For English authors it is in fact obligatory to signal the need for the research in the introduction — often by pointing out deficiencies or incompleteness of former studies — and to inform the reader about the main aim of the article. This can be achieved, for instance, by making a claim, proposing an extension of a current theory, offering new data for discussion, introducing a novel perspective on a well-studied phenomenon or suggesting a modification of existing models. Both these moves — Establishing a niche and Occupying the niche (Swales, 1990) — are potentially face-threatening and may involve the use of low-value epistemic markers to tone down criticism and minimize imposition. This act of announcing the purpose of the research is firmly established in the Anglophone tradition of writing but virtually absent from or at least quite new to the Polish tradition of scholarly texts.

The question what specific discourse functions epistemic modality markers fulfil in Polish and English linguistics articles — whether they signal the author's commitment to the proposition, mark off new claims from assertions which have already gained the status of facts, invoke potential counterarguments or voices of criticism, emphasize the knowledge shared by the writer and the reader, give weight to the conclusions, tone down criticism of other studies or approaches or are part of formulaic expressions characteristic of the genre — and whether and how these functions correlate with article sections is awaiting further research, which, I hope, the results of this study may encourage. I also hope that the data presented here may serve as a convenient point of reference for further contrastive analyses within the realm of academic discourse, including other (Slavonic?) languages, genres and disciplines.

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Krystyna Warchał

**Pewność i wątpliwość w dyskursie akademickim:
Wykładowi modalności epistemicznej w angielsko- i polskojęzycznych
artykułach naukowych z dziedziny językoznawstwa**

Streszczenie

Przedmiotem pracy są językowe wykładowi stopnia pewności sądów w artykułach naukowych z dziedziny językoznawstwa w języku angielskim i polskim. Punktem wyjścia podjętych badań jest przekonanie, że różne tradycje intelektualne, w jakich kształtowała się polska i angielska komunikacja akademicka – tradycje odmiennie postrzegające status wiedzy naukowej i proces jej tworzenia, relację między autorem i czytelnikiem, czy wreszcie sam akt pisania i stopień dialogowości tekstu naukowego – mogą znajdować odzwierciedlenie w różnych przeświadczeniach dotyczących tego, czym jest fakt naukowy, a co pozostaje w sferze hipotez, założeń i propozycji oczekujących na potwierdzenie i akceptację środowiska akademickiego. Różnice te z kolei sugerowałyby, iż autorzy wywodzący się z tych dwóch kręgów kulturowych mogą przywiązywać różną wagę do wyraźnego oznaczania treści hipotetycznych oraz sądów, którym towarzyszy wysoki stopień pewności, oznaczać je w różny sposób, z różną częstotliwością i w różnych miejscach wywodu. Niniejsza praca podejmuje próbę ustalenia, czy różnice takie istnieją i, jeśli tak, których wykładowi modalności epistemicznej dotyczą i jak przebiegają.

Praca zbudowana jest z czterech rozdziałów, z których pierwszy dotyczy badań nad dyskursem akademickim i jego retoryką, drugi poświęcony jest modalności językowej, trzeci opisuje cel pracy, materiał badawczy oraz sposób jego analizowania, czwarty zaś przedstawia i omawia wyniki badania dla trzech wartości modalnych w obu językach. Pracę zamyka zwięzłe podsumowanie.

Angielskojęzyczną część materiału badawczego stanowi 200 artykułów opublikowanych w latach 2001–2006 w naukowych czasopismach językoznawczych o zasięgu międzynarodowym: *Journal of Pragmatics*, *Language and Communication*, *Language Sciences*, *Lingua* i *Linguistics and Philosophy*. Polskojęzyczną część analizy oparto na danych zaczerpniętych z 200 artykułów opublikowanych w tym samym przedziale czasowym w polskich czasopismach językoznawczych, których tytuły znalazły się na liście czasopism punktowanych, opublikowanej w roku 2003 przez Komitet Badań Naukowych: *Acta Baltico-Slavica*, *Biuletyn Polskiego Towarzystwa Językoznawczego*, *Etnolingwistyka*, *Język a Kultura*, *Onomastica*, *Poradnik Językowy*, *Slavia Meridionalis* oraz *Studia z Filologii Polskiej i Słowiańskiej*. Obie części składają się na korpus o wielkości ok. trzech milionów słów. Analizę przeprowadzono na materiale zdigitalizowanym i oznaczonym (otagowanym) pod względem segmentów tekstu przy pomocy programu *Oxford WordSmith Tools 5* jako narzędzia wspomagającego. W badaniu

wzięto pod uwagę następujące kategorie wykładników: epistemiczne użycia czasowników modalnych (wraz z epistemicznymi użyciami czasu przyszłego w języku polskim), przysłówki epistemiczne, przymiotniki i rzeczowniki, które niosą znaczenia epistemiczne i wprowadzają zdania podrzędne, oraz epistemiczne czasowniki leksykalne.

Najistotniejsze wyniki badania można streścić w następujących punktach:

- Artykuły anglojęzyczne zawierają prawie dwukrotnie więcej wykładników modalności epistemicznej niż artykuły polskojęzyczne; w tekstach angielskich ponad dwukrotnie częściej spotyka się orientację subiektywną niż obiektywną, w tekstach polskich zaś przeważa orientacja obiektywna.
- W tekstach anglojęzycznych najczęściej spotyka się niskie wartości modalne, drugą pod względem częstości występowania grupę stanowią wartości wysokie, wartości średnie występują zaś najrzadziej. W tekstach polskich autorów najczęściej wyrażane są średnie wartości modalne, najrzadziej natomiast spotyka się wartości wysokie.
- Pod względem kategorii wykładników modalności epistemicznej, w anglojęzycznej części korpusu przeważają czasowniki modalne, w polskiej zaś przysłówki epistemiczne.
- W obu grupach tekstów wykładniki sądów epistemicznych występują częściej w zakończeniu niż w innych segmentach; obserwacja ta dotyczy wszystkich wartości modalnych w języku angielskim oraz niskich i średnich wartości modalnych w języku polskim; wysoki stopień pewności odnotowywany jest w języku polskim z równą (niską) częstotliwością we wstępie i w zakończeniu.

Praca może stanowić głos w dyskusji nad różnicami w stylach argumentacji akademickiej charakterystycznych dla poszczególnych kultur i dyscyplin, wniesić dane do badań porównawczych nad znaczeniami epistemicznymi i ich funkcją w różnych typach dyskursu oraz być punktem odniesienia dla dalszych analiz uwzględniających inne języki, gatunki i dyscypliny.

Krystyna Warchał

Gewissheit und Zweifel im akademischen Diskurs. Anzeichen epistemischer Modalität in englisch- u. polnischsprachigen Zeitungsartikeln auf dem Gebiet der Sprachwissenschaft

Zusammenfassung

Zum Gegenstand der Abhandlung werden Anzeichen der Gewissheit in den wissenschaftlichen Artikeln auf dem Gebiet der Sprachwissenschaft im Englischen und Polnischen. Der Ausgangspunkt für vorliegende Studie ist die Überzeugung davon, dass unterschiedliche intellektuelle Traditionen, in denen sich polnische und englische akademische Kommunikation bildeten – Traditionen, die den Status des Wissens und dessen Bildung, die Relation zwischen dem Verfasser und dem Leser und schließlich den Schreibakt selbst und den Dialogcharakter des wissenschaftlichen Textes ganz anders betrachten — können ihre Widerspiegelung finden in unterschiedlicher Beurteilung dessen, was in der Wissenschaft ein Fakt und was lediglich eine Hypothese ist, die von akademischen Kreisen noch bestätigt und akzeptiert werden muss. Diese Unterschiede ließen vermuten, dass die von zwei Kulturkreisen abstammenden Verfasser werden eine andere Meinung davon haben, auf welche Weise, wie oft und an welchen Stellen der Argumentation ganz hypothetische Inhalte und Behauptungen mit hohem Sicherheitsgrad hervorgehoben werden sollten. In vorliegender Abhandlung hat man sich Mühe gegeben, nachzuweisen, ob es diese Unterschiede gibt und wenn ja – welche Anzeichen der epistemischen Modalität sie betreffen und worauf sie beruhen.

Die Arbeit besteht aus vier Kapiteln; das erste von ihnen betrifft die Forschungen über den akademischen Diskurs und dessen Rhetorik, das zweite ist der Sprachmodalität gewidmet, das dritte erläutert das Ziel der Abhandlung, das Forschungsmaterial und dessen Beurteilung und das vierte Kapitel präsentiert und analysiert die Forschungsergebnisse für drei Modalwerten in beiden Sprachen. Am Ende der Arbeit befindet sich ein knappes Resümee.

Den englischsprachigen Teil des Forschungsmaterials bilden 200 Artikel, die in den Jahren 2001–2006 in sprachwissenschaftlichen Zeitschriften von weltweiter Bedeutung: *Journal of Pragmatics*, *Language and Communication*, *Language Sciences*, *Lingua* und *Linguistic and Philosophy* veröffentlicht wurden. Polnischsprachiger Teil der Analyse basierte auf den in demselben Zeitraum veröffentlichten 200 polnischen sprachwissenschaftlichen Artikeln, deren Titel auf die im Jahre 2003 von dem Komitee für Wissenschaftliche Forschungen veröffentlichten Liste der anerkannten Zeitschriften kamen: *Acta Baltico-Slavica*, *Poradnik Językowy*, *Slavia Meridionalis* und *Studia z Filologii Polskiej i Słowiańskiej*. Beide Teile bilden das Korpus von ca. drei Millionen Wörtern. Analysiert wurden Texte, die digitalisiert und mit Tags hinsichtlich der Textsegmente mittels des Programms *Oxford WordSmith Tools 5* ausgezeichnet wur-

den. In der Forschung berücksichtigte man folgende Kategorien der Anzeichen: den epistemischen Gebrauch von Modalverben (samt epistemischem Gebrauch des Futurs im Polnischen), epistemische Adverbien, die die Nebensätze einleitenden Adjektive und Substantive mit epistemischer Bedeutung und epistemische lexikale Verben.

Die wichtigsten Forschungsergebnisse lassen sich in folgenden Punkten zusammenfassen:

- Englischsprachige Artikel beinhalten fast doppelt so viel Anzeichen der epistemischen Modalität als polnische Artikel; in englischen Texten ist die subjektive Orientierung fast doppelt so häufig als die objektive, in polnischen Texten dagegen überwiegt die objektive Orientierung
- In englischen Texten treten am häufigsten niedrige Modalwerte auf, zweithäufigste Gruppe bilden hohe Werte und Mittelwerte kommen am seltensten vor
- Hinsichtlich der Kategorie der epistemischen Modalität überwiegen im englischen Teil des Korpus Modalverben und im polnischen dagegen epistemische Adverbien
- In beiden Textgruppen kommen die Anzeichen der epistemischen Urteile häufiger im Schlussteil als in anderen Segmenten vor. Diese Bemerkung betrifft alle Modalwerte im Englischen und niedrige und mittlere Modalwerte im Polnischen; ein hoher Sicherheitsgrad wird im Polnischen genauso selten in der Einleitung und im Abschluss festgestellt.

Die Arbeit kann zur Diskussion über unterschiedliche Stile der für die einzelnen Kulturen und Disziplinen charakteristischen akademischen Argumentation beitragen und zum Bezugspunkt für weitere Analysen in Bezug auf andere Sprachen, Gattungen und Disziplinen werden.

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