

THE VALUE OF *MAY* AS AN EVIDENTIAL AND EPISTEMIC MARKER
IN ENGLISH MEDICAL ABSTRACTS¹

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ABSTRACT

Our article addresses the issue of the relationship between epistemic modality and evidentiality. Earlier works such as Lazard (2001) claim that English does not hold grammatical markers for the source of knowledge in contrast to other languages, e.g. Quechua, that seem to do so. Dendale and Tasmowski (2001), however, think that grammatical evidentials are possible in English, and Aikhenvald (2004) admits that modal verbs in English are a borderline case. In our article, we seek to explore the use of *may* and *might* in a corpus of medical abstracts to demonstrate (i) their value as grammatical evidential markers, and (ii) their value as epistemic markers that show the author's attitude to the proposition manifested. In doing so, we follow Cornillie (2009), who defines these two concepts as independent categories. The results of our analyses indicate that these modals may be used as grammatical markers of evidentiality, regardless of other semantic and pragmatic meanings.

1. Introduction

This paper studies the use of modals *may* and *might* both as epistemic and evidential markers in a corpus of English medical abstracts. Our main objective is to demonstrate that English modal verbs may constitute a grammatical evidential strategy. There is a lack of research in the field in this respect, probably due to the lack of consensus in the literature. A linguistic tenet supported by Lazard

¹ Dr. Francisco Alonso-Almeida and Dr. Laura Cruz-García are part of the Research Project Evidencialidad en un corpus multidisciplinar de artículos científico-técnicos en lengua inglesa, grant FFI2009-10801 (FEDER, Spanish Ministry for Science and Innovation). This grant is hereby gratefully acknowledged. We also thank the anonymous reviewers of SAP for their valuable comments and suggestions to improve the final draft.

(2001), among others, rejects the existence of the grammatical evidentials in English. Others, such as Dendale and Tasmowski (2001), suggest that grammatical evidentials are possible in this language. The case of English modal verbs is a point in question. For Aikhenvald (2004: 150-151), they represent a case on the borderline between lexical and grammatical evidentiality, although for others, modals cannot hold a grammatical evidential status. All in all, there is a general need for more research in the area to identify and categorize possible grammatical evidential strategies in English.

The whole panorama is complicated still further by the frequent association of the concept of evidentiality with epistemic modality and authorial stance. This traces back to former ideas on evidentiality being a subdomain of epistemic modality (Chafe 1986; Palmer 1990). Thus, evidentiality has been seen in relation to the degree of the authors' commitment towards their texts, rather than merely as source of knowledge. Although it is true that everything in language may imply other additional intentions to what it is barely stated, the disassociation of the epistemic and evidential categories may give rise to better results. To set our line of argument, we will follow both Carretero's (2004) intersective approach and Cornillie's (2009) disjunctive approach in the description of both categories.

In our description of evidentiality, we follow Chafe (1986), Dendale and Tasmowski (2001), and Marin-Arrese (2004), among others. Hoyer (1997), Palmer (1990, 2001), and Biber et al. (1999) will provide us with a working definition of modality and modal verbs in English.

The article is organised as follows: Section 2 gives a succinct account of the main theoretical tenets regarding evidentiality and epistemic modality. The following section offers a description of the corpus of scientific abstracts. Section 4 includes the analyses and discussion of samples, and the last section presents the conclusions drawn from this study.

2. Evidentiality and epistemic modality

Evidentiality and epistemic modality are often seen as two of a kind, but without being exactly reciprocal. All evidential markers are said to be essentially epistemic, while not all epistemic markers are considered cases of evidentiality. Traditionally, the study of these concepts overlaps, as in Chafe (1986), although there is certainly a distinction between them. Evidentiality is used "to qualify the reliability of information communicated in four primary ways. They specify the source of evidence on which statements are based, their degree of precision, their probability, and expectations concerning their probability" (Mithun 1986: 89). The ongoing debate as to whether evidentiality should be considered as a type of epistemic modality (Palmer 2001) has led to two different types of evidentiality: (a) broad evidentiality, and (b) narrow evidentiality.

Broad evidentiality refers to evidentials as showing the source of knowledge, and the inferred degree of certainty as to the propositions expressed. Narrow evidentiality refers exclusively to evidentials as a manifestation of the source of knowledge. This relationship between evidentiality and epistemic modality is further subdivided into three types (Dendale – Tasmowski 2001), namely: *disjunction*, *inclusion*, and *intersection*. A disjunctive relation matches with the concept of narrow evidentiality, and therefore evidentials imply the evidence of the speaker's utterance (De Haan 1999: 85). The inclusive type is supported by Palmer (2001), according to whom evidentiality is seen as a subdomain of propositional modality. Finally, the last relation, i.e. intersection, implies an overlap between inferential evidentiality and epistemic necessity (Van der Auwera – Plungian 1998: 86).

Carretero (2004) proposes a recent intersective approach to the study of evidentiality and epistemic modality. She understands this relationship in terms of a continuum from evidential to epistemic expressions. She then categorises them “depending on the commitment to the truth of the utterance in which they encode or implicate” (2004: 27-28). Her classification falls into the following major groupings with examples from the same source (see Carretero 2004: 33-35 for some specifications concerning her classification and for a detailed discussion of samples):

- a) quotation of the source of the evidence, without giving hints of the addresser's attitude: *The plaintiff says that the defendant came up from behind.*
- b) quotation of the source of evidence, giving hints of the addresser's attitude: *And he insisted that he saw no other car.*
- c) indication of a non-explicit source of evidence, and no indication of the addresser's inferences: *It's regrettable as has often been said when these accident cases particularly while an accident happens as it nearly always does in a flash, come to trial so late.*
- d) indication of the kind of evidence and of the addresser's inferences: *And then the matter for all I've been told went to sleep for another year until September nineteen sixty-three.*
- e) indication of an inference strongly based on evidence: *on the corner of which apparently there is a candy factory.*
- f) estimation of the probability of the utterance to be true, the estimation being strongly based on the extralinguistic situation: *which must have been some thirty forty or even fifty yards from the main road.*
- g) estimation of the probability for the utterance to be true, with no specification about the most influential factors on the inference: *Recollections are dim and maybe are dim on both sides.*

- h) subjective estimation of the probability for the utterance to be true, relying above all on common sense or knowledge of the world: *I' ve already said... that this accident happened as long ago as the tenth of August nineteen sixty-one.*

Cornillie (2009) presents a disjunctive view, and considers epistemic modality and evidentiality as two distinct categories. These are not mutually exclusive, and so a particular verb, such as *must* may present an evidential reading as well as an epistemic reading. Nuyts (2004) argues that modals cannot show more than one qualification per clause (as stated in Cornillie 2009: 54). For Cornillie, confusion in this respect arises from the frequent association of the *mode of knowing* with the *degree of the speaker's commitment* as to the proposition manifested. He concludes that modes of knowing do not imply any degree of certainty, commitment or likelihood of a future event to be true. Modes of knowing can be direct or indirect, depending on whether the speaker has obtained the information visually, through his own inferences or from others' inference processes. In this article, we follow Cornillie's view, and so, whereas evidentiality "refers to the reasoning processes that lead to a proposition" (2009: 47), epistemic modality "evaluates the likelihood that the proposition is true" (2009: 47). He rejects the inclusive and overlapping combinations to describe the relationship of epistemic modality and evidentiality.

With respect to modality, modals affect the meaning of the complete proposition in which they are embedded. According to Hoyer (1997), following the modal logic tradition in Von Wright (1951: 1-2), modals can reveal deontic or epistemic meanings. Epistemic modals are "concerned with matters of knowledge or belief on which basis speakers express their judgements about states of affairs, events or actions" (Hoyer 1997: 42). In the case of deontic modals, they refer to the "necessity of acts in terms of which the speaker gives permission or lays an obligation for the performance of actions at some time in the future" (Hoyer 1997: 43). This twofold distinction of modality coincides with Biber et al.'s (1999: 485) concepts of intrinsic and extrinsic modality.

In the following sections, we will try to analyse the value of modal verbs *may* and *might* in a corpus of specialized medical abstracts in English to see whether these two verbs may encode evidential meaning as well as other meanings, following Cornillie's (2009) view, and whether they may be said to represent an evidential strategy.

3. Data

The data for analysis have been extracted from the *Corpus of Specialized Papers in English (Evycorp)*, currently under compilation and tagging in the *Insti-*

tuto Universitario para el Desarrollo Tecnológico y la Innovación en las Comunicaciones (IDeTIC) [University Institute for Technological Development and Innovation in Communication] at the Universidad de Las Palmas de Gran Canaria, for the study of evidentials in academic prose. This corpus contains scientific articles from three different disciplines, namely medicine, computing and law. The corpus is divided according to these registers, and subsequently according to chronology, as the corpus covers a time span of ten years: 1998-2008. For the present paper, we have included a total number of 41 abstracts preceding scientific articles in the medical register, amounting to a total of 12,784 words.

The corpus texts were published in machine-readable soft format, and hence they have been retrieved online, although some can be also found in hard format. All the abstracts are written by native speakers of English, and this allows for a unified account of the findings. In our research prospects, we envisage dividing analyses by time and genre in the diachronic dimension of a decade (1998-2008) to examine the degree of variation in the use of modals for this genre. The quick changes in scientific thought and technological advances may have a considerable effect on scientific methods and procedures, and this in turn will affect language use.

Although the research team *Tecnologías emergentes Aplicadas a la Lengua y a la Literatura* (TeLL) [Emerging Technology Applied to Language and Literature] is developing the online tool for corpus management (ONICOM¹) to accompany *Evycorp*, for the time being we have analysed the corpus using Yasu Imao's *CasualConc* software for data retrieval, available online at <http://sites.google.com/site/casualconc/>. We have firstly produced a list of occurrences in the corpus to discover the presence of modal verbs in the texts. Secondly, we have interrogated and analysed the corpus for the items *may* and *might*. All the examples quoted in the discussion are referred to as they have been labelled in the corpus. This indicates first author name, year of publication, and a descriptive word from title.

4. Results and discussion of findings

The analysis of modal verbs in the texts gives the following results:

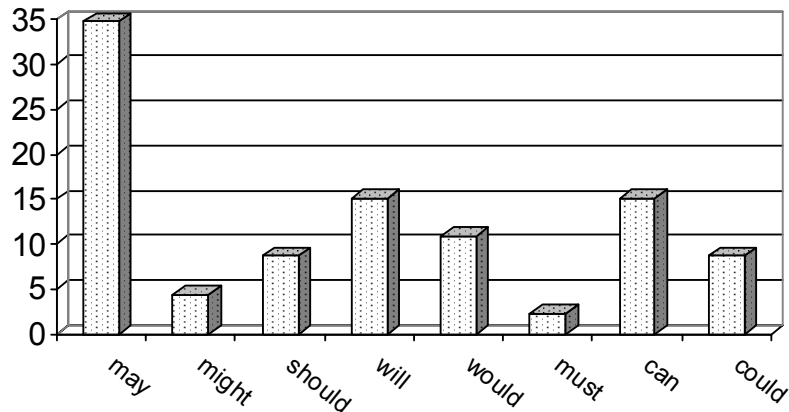


Figure 1. Distribution of modal verbs in corpus (percentages)

The results shown in the above figure reveal the predominant presence of *may*, 35% of the cases, with respect to any other modals marking possibility. Other modals in the possibility/probability/permission sphere are *might*, which constitutes less than 5% of occurrences, and *can* and *could*. These last two modals appear in barely 34% of the cases altogether. This significant occurrence of *may* may be closely connected with the type of genre, i.e. the abstract. This textual genre normally serves the purpose of presenting the ideas and intentions developed in the article in a very short space. For this reason, the modal *may* lessens the burden of excessive description and justification, especially if used in an epistemic sense. The meaning of *may* as marking possibility/probability makes it ideal to introduce new knowledge at the stage of the scientific paper in which this genre is embedded without fully committing to it. Readings of *may* to show sources of knowledge are also possible, as we will show below.

The analysis of evidential and epistemic *may* and *might* in our corpus gives the following distribution:

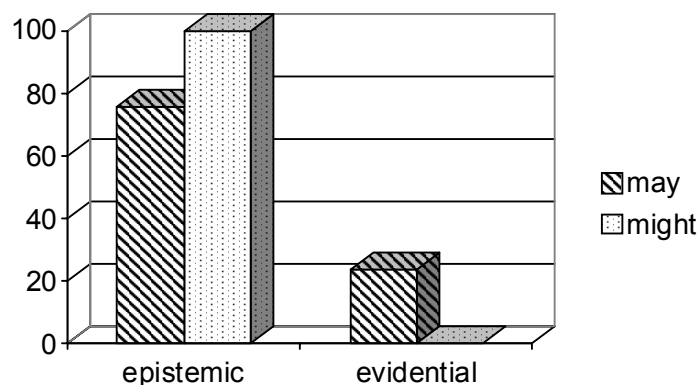


Figure 2. Epistemic and evidential readings of *may* and *might* (percentages)

Figure 2 shows that the primary readings of both *may* and *might* are epistemic, and the secondary meaning in the case of *may* is evidential. Sometimes, a blend between the epistemic and the evidential category has been identified in the case of *may* in our corpus. Faller (2002: 87) labels this blending as *epistential*. It is also related to Coates's indeterminate category (1983), although she uses the term to refer to those cases in which the distinction between deontic and epistemic cannot be clearly established.

No examples of *might* with an evidential meaning have been clearly attested in corpus. Examples of epistemic *may* and *might* are the following:

- 1) The review further focuses on protein aggregates as they affect an immunogenicity risk assessment, the use of animal models and studies in uncovering effects of protein aggregates, and changes in product manufacture and packaging that *may* affect generation of protein aggregates (rosenberg2006protein).
- 2) Ultimately, through rational genetic therapy targeted to correcting the underlying molecular defect, altering the natural history of melanoma development *may* be possible (gibbs2002genes).
- 3) This review focuses on a framework for understanding how aggregate species potentially interact with the immune system to enhance immune responses, garnered from basic immuno-logic research. Thus, protein antigens presented in a highly arrayed structure, such as *might* be found in large nondenatured aggregate species, are highly potent in inducing antibody responses even in the absence of T-cell help (rosenberg2006protein).

- 4) Thus, a comparative analysis of affected versus naturally protected muscle cells should lead to a greater knowledge of the molecular pathogenesis of inherited neuromuscular disorders. Furthermore, rationalising the protective cellular mechanisms *might* help in developing new treatment strategies for muscular dystrophy. The rescuing of extraocular and toe muscle fibres has previously been attributed to the special protective properties of fast-twitching small-diameter fibres (dowling2004muscle).

The modals *may* and *might* in all instances clearly show epistemic meaning, and there is no intention to convey an evidential reading. In the case of (1), *may* is used to introduce the possible consequence following from the preceding proposition, if considering only the linguistic environment. Therefore, the modal form functions as an indicator of the writers' stance towards the text, rather than source of knowledge. Similarly, the use of *may* in (2) indicates a mitigation of the degree of commitment towards the proposition manifested. This is also supported by the presence of the stance lexical item *probable*, which confirms our epistemic reading of *may*. This use of *may*, therefore, shows authorial hesitation as to the proposition expressed, even if they are convinced about its truth thanks to previous argumentation.

Concerning *might*, Palmer (2001: 58) claims that it has the same status as *may*, but "it merely indicates a little less certainty about the possibility", and so it is used as "the unreal form of MAY". In the case of this modal verb in samples, it marks the degree of uncertainty as regards the information given. According to Biber et al. (1999: 489-491), *might* is used much less frequently than *may* in academic writing to express the permission/possibility/ability dimension. In their findings, *might* is used to show logical possibility, as also happens in our corpus. Example (3) shows an epistemic use of the verbal form, and so a sense of possibility is expressed. However, an epistemic interpretation of *might* does not seem to fit really well here. If we depart from the epistemic/deontic dichotomy, this instance may represent what Van der Auwera and Plungian (1998: 82) call *non-deontic participant-external possibility*, since "the possibility does not reside in the subject, and is not a matter of social authority or appropriateness" (Goossens 2003: 152). The interpretation of *might* depends on whether or not protein antigens have already been found in large nondenatured aggregate species. If the first assumption applies, then it is clearly a case of participant-external possibility, as stated earlier.

The case in (4) hedges a proposition, i.e. *help in developing new treatment strategies for muscular dystrophy*, which is likely to occur but which is not guaranteed at all. In other words, *might* is used here to lessen the degree of authorial commitment as to the truth of this proposition. It could be argued that *might* is also used here as an evidential marker, since the context ambiguously

allows for this reading. However, *might* is so connected to the realm of tentative possibility in this instance that it is extremely difficult to disassociate it from a possible intention to manifest the mode of knowledge. We believe that the primary meaning and communicative purpose coincide in showing authorial hesitation.

The following extract shows the use of *may* in the negative:

- 5) Despite this progress, a less invasive approach to treatment is desirable. Patients with coexisting cardiovascular or pulmonary diseases *may not* tolerate aortic replacement under general anesthesia, particularly combined with extracorporeal bypass (kee2002thoracic).

The use of *may* is also epistemic in combination with the adverbial *not* in (5). The use of this adverbial clearly indicates the authors' position with respect to what they say, and so, whereas *may* seems to mitigate the effect of a bare, unmodulated declarative, *not* implies additional information, which suggests more confidence. Consider the following utterances:

- 6) Patients with coexisting cardiovascular or pulmonary diseases *may not* tolerate aortic replacement under general anesthesia (kee2002thoracic).
- 7) Patients with coexisting cardiovascular or pulmonary diseases *may* tolerate aortic replacement under general anesthesia.

In both cases, *may* shows an epistemic value. However, the use of the negative particle in (6) entails more authorial confidence than the use of *may*, alone. In the epistemic continuum, *may not* seems to make the claim more certain than *may*. This stands in sharp contrast with De Haan's view (1997) concerning the combination of modals and negative particles. He supports the idea that the negation of the proposition does not have an effect on the force of modality. However, in our view, the preference for the adverbial is to constrain the epistemic space of certainty, and to this end, background knowledge on cardiovascular or pulmonary diseases and anesthesia plays a fundamental role in their linguistic choice. This background knowledge should not be confused with the mode of knowledge, which is not manifested here at all. In other words, and departing from De Haan (1997), the use of *not* in this particular example does affect the force of modality at least with respect to the degree of certainty shown to be conveyed by *may*.

In fact, the absence of negation in other contexts may also be interpreted as implying a higher degree of certainty rather than a lesser degree. Note, for instance, that, between these two new propositions *Tay may come* and *Tay may not come*, *may* is inevitably interpreted differently by the hearer as showing (a)

the same degree of certainty, (b) higher degree of certainty in the case of *may* plus the negative, or even (c) higher degree of certainty of *may*. This very much depends on the array of contextual factors, including intonation, and the mutually shared knowledge of the state of affairs involved in the process. Given the context that the party is about to finish, a speaker may utter any of the above propositions, or even the two of them to convey a neutral epistemic position: *Tay may or may not come*.

It is also possible to hypothesise other alternatives. One may suppose that it is not worth arriving so late to a party, and so Tay is not expected to turn up: *Tay may not come*. However, Tay's friends know her well enough to understand that she normally comes to parties when they are about to finish to have her first drink of her long night-out. Here, the proposition *Tay may come* does not only allude to the possibility that she will finally appear, but also transmits a higher degree of confidence due to the absence of the negative particle. It is in this sense that we interpret the use of the negative particle *not* in (5) above as a manifestation of higher degree of confidence.

Mode of knowledge can be also conveyed in the use of *may*. The following examples show both an evidential and an epistemic reading of *may*:

- 8) The findings suggest increased Cho signal intensity in the cerebellum of adult A-T patients. If this finding is shown through the course of the disease, it *may* assist in the differentiation of early A-T from other forms of ataxia and provide a marker for monitoring treatment efficacy (wallis2007 protein).
- 9) Thus the transient increase in renal IGF-I protein levels in acidosis, before the onset of hypertrophy, suggests that IGF-I *may* play a role in initiating kidney growth. Furthermore, it appears that reduced cathepsin B and L gene expression is a cause of the low renal cathepsin activity seen in acidosis. This likely contributes to the depressed renal proteolysis caused by acidosis (fawcett2002acidosis).

As seen in these examples, *may* clearly manifests the authors' deductive inferential reasoning from which they obtain their evidence leading to this proposition. As put forward by Cornillie (2009: 58), "inferences have generally been associated with strong speaker commitment, but ... such an association does not always hold". The reliability of the propositions in which *may* in (8) and (9) is embedded depends on how accepted or common these ideas are within the medical literature rather than with the degree of commitment or likelihood. As an epistemic marker, *may* is canonically used to refer to a weaker epistemic commitment (cf. Palmer 2001). It seems that inferential reasoning should be expressed by means of *must* rather than *may*, since the former appears to be more

reliable than the latter (Cornillie 2009: 58), as in *She must be there. The light is on vs. She may be there. The light is on*. Salkie (1996), in his article on *must* and *should*, follows Dendale's (1994) model for the study of evidential and epistemic French *devoir*. According to these authors, modals like *devoir* or *must* or *should*, can involve mental processes that give way to (a) set of premises, (b) inferring one or more conclusion from these premises, and (c) evaluating the conclusions and selecting one as the most likely to be valid (as in Salkie 1996: 385).

Thus, epistemic and evidential categories are identified as a basic meaning and a communicative purpose of a modal verb. In the specific case of *must*, this modal shows the basic meaning of inference, and an epistemic communicative purpose. *Should* presents the basic meaning of prediction but coincides with *must* in showing an epistemic meaning. Both Dendale and Salkie differentiate between the mode of knowing and authorial commitment. The value of modals as epistemic markers does not undermine their value as evidential markers.

In the specific case of (8), *may* indicates inferential reasoning which is further supported by the presence of the *if*-structure in topic position in the sentence. This same conditional structure also posits some uncertainty regarding the truth of the proposition. On the one hand, the condition given in the subordinate clause gives us a hint regarding the interpretation of *may* in the main clause. Thus, the cognitive and mental processes followed in the use of *may* are such that they allow for an interpretation of this modal, as given below:

Basic meaning of this modal: INFERENCE

Communicative purpose of this modal in this context: PROBABILITY

This last epistemic reading is, as put forward earlier in the paper, supported also by the use of the conditional clause. The truth of the second proposition depends on the truth of the first proposition, and so a maximum degree of certainty cannot be guaranteed. This is not necessarily true, since it is difficult to determine whether the condition in the first proposition affects the entire second proposition including *may*, or whether *may* is the result of the contextual implication of the conditional premise.

In example (9), the context plays a fundamental role in the interpretation of the modal verb. This is the case of the hedge *the transient increase... suggests that*, which functions as a strengthening factor. Hyland (1998: 5) uses the term *hedge* to refer to "the means by which writers can present a proposition as an opinion rather than a fact: items are only hedges in their epistemic sense, and only then when they mark uncertainty". Following his definition, the complete hedged proposition seems to be uncertain and it is in the realm of what is likely to happen. The verb *suggest* is categorised by Vartalla (1999: 185) as a hedging

reporting verb, although, in this case, it presents a deductive rather than a reportative function. The same can be said of *may*. The modal indicates an inferential process, and also a sense of probability. Thus, the whole string *IGF-I may play a role in initiating kidney growth* can be reanalysed as *IGF is inferred as probably playing a role in initiating kidney growth*, making clear the mode of knowing, as well as the epistemic meaning.

A similar function is fulfilled by the presence of logical operators *hence* and *thus* in the vicinity of *may* in the following instances:

- 10) We postulate that the activation of the survival factor NF-kB by bile may be linked to the previous cytogenetic data from our laboratory showing the amplification of NF-kB's chromosome (chromosome 4), during Barrett's cancer progression. Hence chromosome 4 amplification *may* provide a survival mechanism for bile exposed oesophageal tissues via NF-kB (jenkins2004acid).
- 11) Endogenous CD39 *may* thus have a hemostatic function by promoting ADP formation from released ATP, in addition to its antiaggregatory properties. A plasma nucleotidase hydrolyzes ATP directly to AMP. This prevents ADP accumulation and generates adenosine, a potent, locally acting inhibitor of platelet reactivity (birk2002extracellular).

The use of the item *hence* in (10) introduces the conclusion of a flow of reasoning, and so *may* appears to participate in the same inferential process, and this modal verb shows an evidential reading. In this case, this verb may be substituted for a deductive verb such as *deduce* or even *infer*. Why do the authors use *may* when they have an array of linguistic strategies to convey this information? In our view, this happens because *may* elegantly combines an evidential and the epistemic reading altogether, as we have argued above. The evidential reading to manifest inference is shared with other modals such as *must*, but the epistemic one is unique in that it shows only a very specific position within the certainty continuum. In other words, *may* allows for some indeterminacy as to the truth of the proposition to happen in the future.

In (11), the string *may thus* favours the interpretation of the modal verb as an evidential rather than an epistemic marker. The form *thus* does not convey manner, but a logical assumption. This strengthens our view that *may* is used to imply an inferential process rather than to simply evaluate "the likelihood of the proposition to be true" (Cornillie 2009: 47). The use of *may* might be considered as an example of positive politeness since the authors intend to protect their public self-image (Brown – Levinson 1987) avoiding external criticism from opposing views. Thus, this form is used as a shield, even when it is clear from the context that they are confident about what they say. However, Vihla

(1999: 93) states that this type of modal construction seeking to mitigate one's argument could be also seen as a case of negative politeness (Perkins 1983: 117), i.e. "the expression of restraint" (Brown – Levinson 1987: 2), because, in her words, "the writer appears less powerful and less all-knowing, and this diminishes the inherent inequality between the reviewer's and recipient's roles" (Vihla 1999: 94).

5. Conclusion

In this article, we have focused on the modal verbs *may* and *might* in a corpus of medical research abstracts to evaluate their value as both epistemic and evidential markers. As stated in the general literature on English modals, these two forms are used in academic writing to show probability and logical possibility. The same functions are attested in our corpus of abstracts, but complemented with an evidential use to mark the mode of knowing, especially in the case of *may*. The evaluation of the context has proven fruitful in the disambiguation of the types of readings presented by these verbs. The identification of the mode of knowing is frequently associated with the commitment of the author towards the text, and this has obscured their evidential value. Another important conclusion is the presence of linguistic cues surrounding the modal verb *may*, and these lead us to think of its evidential status.

The various cases in which context makes room for a definite conclusion also provide grounds for suspicion, and even in these cases, the authors employ either *may* or *might*. This presence of these modals argues that they are used for a different pragmatic effect rather than lack of commitment, in our view. If we interpret the modals from a genre-dependent perspective (see Vihla 1999: 110-112 for a complete discussion), we may conclude that the authors want to avoid face-threatening statements, which cannot be fully developed and justified. Abstracts appear at the beginning of an article, when authors tend to be cautious (Pho 2008) and aim to present their concepts in an attractive fashion, and there is no room for detailed discussion at this point of the article. For this reason, propositions are conveniently hedged by the use of modals to mitigate the effects of a bare declarative. The reiterative presence of these modal strategies in abstracts is seen as a conventionalised feature of the genre (Salager-Meyer 1992; Pho 2008).

However, another alternative pragmatic interpretation may be rightly called for, and this has to do with a pretended authorial courtesy to imply possibility and probability even when authors' threads of argument suggest the evidence. This idea needs refining, and so we envisage furthering our study with the analysis of a larger corpus of data comprising complete scientific medical articles.

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