

Minna Vihla. *Medical writing. Modality in focus* (Language and Computers: Studies in Practical Linguistics 28). Amsterdam – Atlanta, GA: Rodopi, 1999. xii + 170 pp. ISBN 90-420-0708-7. Reviewed by **Rainer Siemund**, ScanSoft Inc. and Chemnitz University of Technology.

There are only few books on modality having such a practical purpose as the one written by Minna Vihla on *Medical writing*. Vihla, herself a medical doctor in her pre-linguistic life, was once asked by a colleague “‘What can I answer a patient who is afraid of having cancer?’ The difficulty of finding a suitable answer reflects the relevance of modality in medical language. On the one hand, the categorical statement ‘you don’t have cancer’ is, strictly speaking, not acceptable if the answer is not supposed to surpass the limits of what can be verified. On the other, an utterance containing a modal qualification, ‘it is unlikely that you would have cancer,’ hardly has the right pragmatic effect.” (p. vii). *Medical writing* is of course not a guidebook on how to use medical language but rather a thorough analysis of how modal expressions are employed in the

medical domain. The book, a slightly revised version of her PhD thesis defended at the University of Helsinki in 1998, is firmly rooted in the corpus-linguistic tradition and uses as its empirical basis the self-compiled 400,000-word *Medicor Corpus* of American English, containing professional and popular texts spanning the large domain of medical writing. The findings Vihla presents are compared to other accounts of modality and corpora such as the *Brown Corpus* and the *BNC*. The book consists of three parts, bracketed by introduction and conclusion.¹ The four introductory chapters briefly anchor her study in the tradition of professional language analyses, wrap up the current state of research on modality and describe the materials and methods used. Part two (Chapters 5–11) presents quantitative accounts of modality in various contexts and compares them to other corpora as well as to previous studies on modality. The third part with Chapters 6–16, finally, discusses text- and genre-specific conventions, describes the pragmatic effects of modality and thus adds a qualitative perspective to the previous chapters before finishing off with a brief concluding chapter. I shall first briefly summarize the introductory part and then present the main findings per chapter and comment on them as I go along.

Vihla begins with an overview of her study's scope in Chapter 1, starting out from the assumption that medical writing is located on a continuum with scientific discourse on one end of the scale, and publications directed to laymen on the other (p. 2). This potential area of conflict, she argues, governs the domain of medical writing and is reflected, as she explains in Chapter 2, by a number of separate medical genres serving different communicative purposes. The genres she distinguishes are as follows

	DIRECTIVE	ARGUMENTATIVE	EXPOSITORY
Professional	handbook samples clinical textbooks	research articles editorial articles	scientific textbooks
Popular	guidebook samples	–	popular articles

Table 3: *Medicor*: classification of genres, p. 40.

As the table shows, Vihla distinguishes between directive, argumentative and expository styles, each of which, she will argue later on, is characterized by its own distinct use of modal expressions. The broad range of medical genres (contrasted by Vihla with text types, which are based on linguistic rather than com-

municative criteria; cf. Biber 1988) is also reflected in her selection of corpus texts, described in Chapter 4. *Medicor* consists of 179 publications in the shape of book chapters and articles published between 1983 and 1997 (p. 40). In terms of samples, the corpus is roughly equally divided into professional texts (research articles, editorial articles, textbook samples, handbook samples) and popular texts (newspaper/magazine articles, guidebook samples). In terms of word count, however, the popular section adds up to only some 22 per cent of the whole corpus – which is acceptable since all statistics in the book are based on items per thousand words. Vihla’s statistical gear in general is well suited to account for the composition and varying lengths of her texts and sub-genres. A further strength of *Medicor* is the incorporation of complete texts only, which allows for both quantitative and qualitative analyses of the data.

Vihla’s approach to modality, introduced in Chapter 3, largely follows Coates’ (1983) distinction between epistemic and root modality. Even though she acknowledges the further division of root into dynamic and deontic (and possibly other) modalities, she focuses on epistemic and deontic for the purpose at hand. Both kinds, she explains, may be placed on “gradable scales”, one depicting varying degrees of “impossible-possible-necessary/certain”, the other “forbidden-permitted-obligatory” (p. 35) – which leads over to the second part of her study, in which she moves along these scales by recording the frequencies of various modal expressions.

Vihla begins each of her “quantative” chapters with a “non-semantic” (p. 46) overview of the items under investigation. This does not always make sense, as a mere list of tokens obscures the fact that many modal expressions either have also a non-modal meaning or can exhibit both deontic and epistemic qualities. However, her semantic accounts of epistemic and deontic modalities certainly do make sense. In her analysis of *Modals* in Chapter 5 Vihla interestingly observes that directive texts, professional and non-professional, exhibit the highest density of both epistemic (notably *may* and *might*) and deontic modal auxiliary verbs (*must* and *should*). The hierarchy for possibility modals across the *Medicor* genres is (in decreasing order) GB > TBcl > PA > HB > EA > RA², that of necessity modals TBcl > HB > EA, GB > TBsc > PA = RA (p. 46). Her observations on the distribution of modals are largely supported by data discussed in Chapter 6 (*Expressions of possibility*), in which she also examines semantically equivalent expressions of possibility such as *maybe*, *perhaps*, *possible* and a few others. She attributes this spread to the fact that for expository and argumentative texts an equal coverage of all potential scenarios appears to be less crucial than for directive texts such as manuals and clinical textbooks (HB > GB > TBcl > EA > PA > TBsc > RA, p. 55).

While expressions of possibility signal that writers want to leave open whether or not their statements should be regarded as true, they are more committed to the truth of a statement if they use expressions of likelihood and certainty. The expressions Vihla analyses in Chapter 7 (*Indicating a higher degree of commitment*) are of the type *appear, seem, certainly, definitely, evidently, likely* and *probably*. They also include *I/we think, I/we believe, and to my/our knowledge*, which are difficult to pinpoint on the possibility – certainty scale. They may, depending on their place in the clause, express doubt rather than certainty. Vihla explicitly excludes the modals *should* and *must*, which, she argues, “are usually non-epistemic [...] and are placed more justifiably in the non-semantic part of the analysis focusing on prescriptive items” (p. 56). Considering the rather low frequencies of epistemic expressions such as *possibly, possible* and *maybe*, each occurring one per thousand or even less per genre, some statistical backup from the modals would have been a nice-to-have. In general the picture of certainty-expressions presents itself somewhat different from the ones described in previous chapters. The highest frequencies of epistemic expressions were found in editorial and popular articles, which appear to be more assertive in style than other medical genres. The ranking here is EA > PA > RA > TB > GB > HB (p. 60). Among the expressions indicating a high degree of commitment are the so-called “experimental” expressions (p. 60), probably a form of evidentials, which Vihla briefly discusses in her introductory section (p. 22). Experimentals include references to data, evidence, observations and significance by which writers tend to add credibility to their statements. Not very surprisingly, the highest frequencies are to be found in research articles, which rely most heavily on empirical data of various kinds. The ranking here is RA > EA > PA > HB > TB > GB (p. 61).

Vihla’s Chapter 8, *Obligations and recommendations*, discusses deontic modals. Unfortunately, non-auxiliary expressions such as *require, recommend* and *demand* are only part of the non-semantic analysis preceding the semantic discussion proper. The semantic discussion therefore rests on counts of the modals exclusively and indicates that the highest density of deontic modality are professional and directive, the lowest number occurring in popular non-directive texts. The ranking is TBcl > HB > EA > GB > RA > TBsc > PA (p. 65).

When she writes about *Intratextual variation* in Chapter 9, Vihla briefly leaves the bird’s eye view of her corpus and concentrates on intratextual variation. It turns out that of all genres in *Medicor* the highest degree for formalization is to be met with in research articles, usually divided into abstract, introduction, methods, results and discussion. The highest frequency of epistemic modals (again the analysis leaves out non-auxiliary expressions)

occurs in the introduction and discussion sections, indicating first the formulation of hypotheses and potential conclusions to be drawn from the empirical part of the articles. The discussions also contain the highest frequency of deontic modals, which help phrasing the actions to be taken in everyday medical practice. No such clear separation could be found within the other genres of *Medicor*.

In *Comparing corpora* (Chapter 10), Vihla does precisely what the chapter's title suggests. She first compares some of her findings with semantically unclassified data drawn from the *Lancaster/IBM*, *BNC* and *Brown Corpora* and material drawn from Grabe and Kaplan (1997). In a second step she takes as reference semantic analyses of the modals by Hermerén (1978), Coates (1983) and Collins (1991). Vihla herself points at the fact that direct comparisons have to be taken with caution though, as semantic classifications in a highly ambiguous domain such as modality may vary among analysers (p. 82). However, the comparisons support the conclusions drawn from the *Medicor* corpus alone; i.e. directive medical texts in general use possibility expressions abundantly whereas it is particularly the professional publications in this category that contain high frequencies of items related to prescriptive language use. Expressions of certainty and likelihood are typical of editorials, which suggests that the use of modality in medical writing is different from "non-specialised" corpora.

Vihla rounds off her findings on modality by considering additional items such as pronouns and conjuncts in her last quantitative chapter (11, *Textual dimensions of medical genres*). First person singular pronouns, it turns out, are very infrequent in the *Medicor Corpus*. If they occur, they do so in editorials and popular articles, indicating, that in general writers on medical subjects tend to choose a rather detached view on the subject they write about. First person plural pronouns, on the other hand, are rather frequent in both research articles and editorials, creating, as Vihla points out, a peer group atmosphere and adding reliability to statements by referring to a support group for the hypotheses formulated. Second person pronouns are most frequent in popular articles and rather infrequent in other genres. Use of the third person, usually characterising narrative writing, is most frequent in popular writing. Concerning the use of conjunctions (in Vihla's terminology: "conjuncts"; cf. p. 84ff.), it is particularly the use of *or* that stands out statistically in the directive genres of *Medicor*, indicating a variety of choices that might be taken in putting medical theory into practice.

Vihla's qualitative analyses begin with a discussion of the reasons why writers tend to employ modal expressions in some genres, whereas they scarcely do so in others. The most obvious reasons, Vihla explains in Chapter 12 (*Pragmatic aspects of modality*), are acts of non-commitment, of increasing the reliability of

statements and of politeness – explanations already briefly touched upon earlier in her book. Modal expressions, she observes, may be used as hedges mitigating statements for one reason or other. Writers of medical texts may for example use them to show the relative and non-categorical character of scientific statements. Such statements acknowledge, she writes, that interpretations of symptoms or, in research, of empirical data, may look different from someone else's point of view. In terms of politeness, modal expressions are largely directed towards the face of the medical community.

The argumentative structure of medical writing further encourages the use of modal expressions, as Vihla observes in Chapter 13, *Argumentation in medical texts*. They are used to signal an interpretative argument strategy, emphasising the author's role as the construer of knowledge. References to previous texts ("quotative justification") and descriptions of methods and empirical findings ("experimental justification", p. 118), on the other hand, refer to sources of knowledge outside the writers themselves – another set of phenomena that probably fall within the domain of evidentiality. Editorials, therefore, tend to use interpretative strategies by employing a large number of likelihood-expressions, while research articles are generally expected to rely on experiments and a larger scientific framework, including the use of tables and figures emphasising the seriousness of the information presented, Vihla explains.

Chapter 14 takes a different view of the findings presented in the quantitative chapters by discussing *Modality and the disciplinary context of medicine*. Vihla relates her previous observations to three aspects governing medical language, i.e. the norm-governed character of clinical medicine, the difference between clinical and scientific sides of medicine, and the process of socialisation into the profession (p. 119). While the first two aspects were cursorily mentioned earlier (deontic modals stress the normative, epistemic modals the hypothesis-forming scientific side), she introduces the notion of a rather homogeneous group of medics adhering to traditions of the profession, both in terms of clinical practice and in their use of language. Even though Vihla briefly points at the historical development of medicine, a slightly more detailed account would have been in order – considering that it is particularly the Helsinki school that has undertaken research in this field.

Vihla's final chapter, followed only by the general conclusions and bibliographical apparatus, gives an outlook on possible extensions of *Medical genres*. Particularly the newly emerging abstracts culture, a tribute to the sheer unfathomable depths of publications in the medical field, has according to Vihla gained importance over the last years. Again she offers a (pre-semantic) quantitative analysis of a few modal expressions in some 8,500 words of running text,

spread over 30 commentary sections. Even though her sample is rather small, Vihla perceives similar tendencies in commentaries as in the editorials she analysed on the basis of more data, i.e. a comparatively high number of necessity modals (p. 131), which, according to Vihla, indicate that commentaries, like editorials, have a persuasive purpose and give recommendations to readers on how to assess the facts presented in the reviewed publication. Vihla furthermore perceives a “medicalization” (p. 132) of everyday life, in which particularly the food industry heavily relies on medical and health vocabulary to market their products (p. 133).

The outlook on newly emerging medical genres nicely rounds off Vihla’s well-organized study on modality in the medical domain, again summarized in her *Conclusions* chapter. The tripartite division of her book is as convincing as her interpretation of the data. In spite of the few shortcomings mentioned on the way, *Medical writing: Modality in focus* is a highly recommendable book for students of professional languages and of modality. Of equal interest should be the *Medicor Corpus*, which might help the linguistic community to come to a deeper understanding of professional and scientific language use. To my knowledge, *Medicor* is currently not accessible for general research, and it would be helpful if Minna Vihla or the Helsinki team could give a brief status report of its availability in one of the future *ICAME Journals*.

Notes

1. 1. Introduction, 2. Professional languages and genres, 3. Modality, 4. Material and methods, 5. Modals, 6. Expressions of possibility, 7. Indicating a higher degree of commitment, 8. Obligations and recommendations, 9. Intratextual variation, 10. Comparing corpora, 11. Textual dimensions of medical genres, 12. Pragmatic aspects of modality, 13. Argumentation in medical texts, 14. Modality and the disciplinary context of medicine, 15. Medical genres, 16. Conclusion.
2. RA = research articles, TBsc = scientific textbooks, EA = editorial articles, PA = popular articles, TBcl = clinical textbooks, HB = professional handbook, GB = popular guidebook.

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