



### **Metadiscourse and the Recall of Modality Markers**

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# Metadiscourse and the Recall of Modality Markers

## Abstract

**M**any studies of discourse and discourse processes assume that informative texts convey only propositional or referential meanings. This paper identifies and classifies several kinds of metadiscourse, which convey not propositional but textual or interpersonal meanings. In beginning to explore how the kinds of metadiscourse that convey interpersonal meanings affect readers, an immediate recall test on two informative paragraphs with some modality markers added to them was run. In the light of these results, some possible roles of modality markers in discourse processes are discussed.

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**M**uch of the recent work on the nature of informative texts and on the processes that readers apply to them proceeds as if there is only one kind of meaning in such texts, the referential, ideational, or propositional. And to represent this meaning researchers have devised various kinds of propositional analysis. As Spiro notes, "Almost all recent Anglo-American research [in cognitive science] has focused on aspects of mental activity that can be put into words or at least represented in some discrete propositional form" (1982b, p. 29). This work assumes that the meaning of informative texts is in some way reducible to or expressible as an ordered list, network, or hierarchy of propositions. And these propositions convey a message "which has specific reference to the processes, persons, objects, abstractions, qualities, states and relations of the real world. . ." (Halliday, 1973, p. 8).

It is easy to find influential studies relying on some form of propositional analysis in investigations of the structures of texts or of the various mental processes that readers apply to them. For example, Kintsch (1974) and Kintsch and Keenan (1973) provide evidence that readers process and store texts in terms of their underlying propositional structures. Meyer (1982) has shown that these propositional structures are hierarchical, with some propositions superordinate to and better recalled than others. Marshall and Glock (1978-1979) have tested the effects on comprehension and recall of variations in the logical network of propositions and in the staging of propositions. And Clark and Clark (1977), Frederiksen (1977, 1986), Kintsch and van Dijk (1978), Kintsch and Vipond (1979), Vipond (1980), and van Dijk and Kintsch (1983) have all discussed and experimented with various other aspects of the propositional structure of texts and of readers' memory structures as they have worked on models of text production, processing, comprehension, storage, and recall.

But there are some linguistic elements in many informative texts that convey meanings that resist classification as referential, ideational, or propositional. For example, consider the following short excerpts from texts:

| The organization of this article is as follows: First, the semantic structure of texts, including their macrostructure, is discussed briefly, mainly with reference to our previous work. Then, a psychological processing model is described |

that is based on these ideas about text structure. (Kintsch and van Dijk, 1978, p. 364)

The above digression had no other purpose than to call the reader's attention to the important line of demarcation between the Prague and Copenhagen conceptions; it was not intended to solve the very difficult problem of the interrelation of internal and external factors of language development. This problem will have our closer attention later on in the present chapter. Here, we go back to the main line of our discussion—comment on the therapeutic changes in the development of language, as conceived by Jakobson in the late twenties. (Vachek, 1966, p. 23)

But there is no doubt in my mind that animals can do very many complex things of which we have not the faintest inkling, and I think even the study of vocalization is still promising for the linguist. (Kalmus, 1966, pp. 276–277)

Yes, my countrymen, I own to you that, after having given it an attentive consideration, I am clearly of opinion it is your interest to adopt it [the Constitution]. (Hamilton, Madison, and Jay, 1942, p. 12)

Clearly, to consider the elements of these excerpts that comment on text structures, on the actual or alleged validity of information, and on authorial attitudes as propositional discourse would entail a severe wrenching of the meaning of propositional discourse. Such elements are better considered examples of what Williams (1981a, 1981b) calls metadiscourse. Metadiscourse is “discourse about discourse, words and phrases and clauses—even sentences—that refer not to the subject matter ‘out there’ but to the act of discoursing, to the speech event that discourse and its readers create” (Williams, 1981b, p. 195). Or, in Dillon’s words, it is writing that “calls attention to the act of discoursing itself. . .” (1981, p. 114).

These statements imply that as writers proceed, they “usually have to write on two levels” (Williams, 1981a, p. 47). On one they supply information about the subject of their text; they expand propositional information. But “. . . whenever *I* or *we* appear, or the reader is addressed (with or without *you*), there is a second plane, one that represents a writer writing and a reader reading the presen-

tation. . ." (Dillon, 1981, p. 114). On this plane the writer helps the reader organize, classify, interpret, evaluate, and react to the propositional material.

Not much work in classifying kinds of metadiscourse has been done. However, if one follows the suggestions of Williams (1981a, 1981b), Lautamatti (1978), and Crismore (1983, 1984), he or she can see that there are at least seven kinds of metadiscourse, the exact boundaries of which will probably have to be more accurately mapped as research continues. Since the details about and examples of these kinds of metadiscourse are presented in Vande Kopple (1985), only a brief summary of their functions will be given here.

In the first place, there is a kind of metadiscourse that writers use to show how their texts are organized and how different parts of them are related to one another. Some of these connectives indicate sequences of material, and some indicate a logical or temporal relationship. Also belonging in this category are reminders about material presented earlier in texts, statements announcing material that one is on the verge of presenting, and announcements of material to appear later in texts. Finally, when writers reintroduce information that has already been included in texts or explicitly connect new information to information already presented, they often depend upon what Williams calls topicalizers. These are elements that "focus attention on a particular phrase as the main topic of a sentence, paragraph, or whole section. . ." (Williams, 1981a, p. 50). Since these too connect blocks of propositional information to each other, they probably also belong with the text connectives.

The basic function of a second kind of metadiscourse, the code glosses, is to help readers grasp the appropriate meanings of elements in texts. Sometimes writers use words that define or explain a word or idiom, that signal

rephrasings of portions of texts, that give cues to proper interpretations of elements, that comment on ways of responding to elements in texts, and that call attention to or identify the language or style that they are using.

With a third kind of metadiscourse writers can make explicit what specific discourse act they are performing at certain points in their texts. For example, they can introduce something, hypothesize, claim, promise, give examples, and conclude, among other possibilities. To make explicit for readers what action they are performing at a certain point, an action that in itself can be significant when writers move from one action to another or when their actions might have important or unexpected implications for readers, they can use such phrases and clauses as *to introduce this section*. These elements of language can be called illocution markers.

A fourth kind of metadiscourse is used to show what assessment of the probability or truth of propositional content writers wish to express and to indicate how committed they are to that assessment. A good name for examples of this kind of metadiscourse is modality markers. Some of these hedge material. Some emphasize that the writer regards the material as true. Some establish a basis for readers' taking information as writers wish them to. And some are appeals for the suspension of judgment about the validity of information.

Functioning in a slightly different way are elements that constitute a fifth category of metadiscourse, the narrators. These exist in texts primarily to let readers know who said or wrote something; for these to be narrators and not modality markers, the truth value of the message must not be an issue.

Often, the source of information does not affect our judgment of its truth value. We simply accept it as true. After hearing "Tom just got back from lunch. He says

it's starting to rain, " for example, unless Tom has given us reason to distrust him, we would not challenge the "it's starting to rain" and would regard the "He says" simply as an indication of the source of the message.

However, sometimes the source affects our judgments about the truth of messages. Prefacing the message "Time is a relative construct" with "According to Einstein" would make us regard its truth value differently from the way that prefacing it with "According to some randomly selected kindergarteners" would. And sometimes statements attributing or not attributing messages to people are precisely what we argue about ("Chomsky never said that the grammar would have psycholinguistic validity"). In such a case, the "Chomsky never said" leaves the realm of metadiscourse and becomes the proposition we debate. All these distinctions depend on specific contexts and on histories of discourse participants.

The sixth kind of metadiscourse allows writers to reveal their actual or feigned attitudes toward propositional content. They can indicate their attitudes about the importance of material, about the interest of material, about the appropriateness of material, and about personal emotional concomitants of material.

Finally, there is a kind of metadiscourse best labelled commentary. The key to identifying commentary is that when writers use it, they address readers directly, usually appearing to draw them into an implicit dialogue. In sum, the specific kinds of metadiscourse include at least text connectives, code glosses, illocution markers, modality markers, narrators, attitude markers, and commentary. And it seems that some linguistic elements can fulfill the functions of more than one of these kinds. For example, phrases such as *in conclusion* probably function in most texts as both text connectives and illocution markers. Whether one function is more prominent than another

cannot be determined outside the context of a particular text. It also seems that some linguistic elements (for example, bits of commentary) might function as metadiscourse in some texts and as primary discourse in others, depending on the focus, force, and genre of particular texts.

What justifies considering these seven kinds of elements as functioning differently from primary discourse is that they do not add to the propositional information of texts. They do not refer to objects, actions, events, or states of affairs in the world outside the text and the interactions associated with the text.

As Halliday points out, “When language is used to exchange information, the clause takes on the form of a PROPOSITION. It becomes something that can be argued about—something that can be affirmed or denied, and also doubted, contradicted, insisted on, accepted with reservation, qualified, tempered, regretted and so on” (1985, p. 70). However, when language is used to perform a metadiscourse function, it is not subject to the activities and processes that Halliday delineates. That is, it is not language to be argued about, affirmed or denied.

Since this last statement in itself is probably debatable, we should consider some examples. I will draw examples from the modality markers, since in their function of signaling assessments of the truth and probability of propositions, they probably strike many people as being subject to the same kinds of evaluation that propositions are.

In Halliday’s grammatical system, modality can be realized in the clause in two congruent ways. The word *congruent* here refers to the fact that some linguistic forms are more literal or are more directly connected to what they represent than are others. For modality, one of the two congruent forms is the finite modal operator (“It *must* have snowed.”). The other is a modal adjunct (“It *certainly*

snowed.”). The clause, then, is really a proposition (*It snowed*) with a tag or adjunct indicating a speaker’s personal assessment of its truth attached to it. The clause expresses a proposition as well as shows a speaker intruding to offer a position on the truth value of the proposition.

But as Halliday also points out, speakers and writers often choose to express modality judgments in forms other than the congruent ones. They like to take the congruent forms and “dress them up,” express them as clauses in their own right. Thus many speakers and writers choose to dress up *It certainly snowed* as *I am certain that it snowed* or *It is certain that it snowed*. Thereby they give prominence to their own point of view, especially in the form with the personal pronoun *I*. But in so doing, they take what is a modal adjunct to a proposition (*certainly*) and make it look like a proposition by itself. They make it look like the main assertion in a sentence.

Thus hearers and readers are often tempted to think *I am certain that* and *It is certain that* are subject to the same processes of debate as true propositions are. But *I am certain that* and *It is certain that* are really not subject to these processes. We can see this most clearly if we turn the sentences of interest to us into tag questions. In such constructions, the tag will attach itself or refer to the proposition, not to a modality judgment. For example, in *It snowed, didn’t it?*, the tag applies to the proposition *It snowed*. When we add a modal adjunct to the sentence (*It certainly snowed, didn’t it?*), the situation remains the same. The tag applies to the proposition itself.

But when we consider a dressed-up form such as *I am certain that it snowed*, at first we might be tempted to think that *I am certain* is the proposition and therefore should be tagged. But we would not say *I am certain that it snowed, am I not?* Rather, we would say *I am certain that it snowed,*

*didn't it?* That the tag is properly *didn't it* and not *am I not* shows that even in a sentence like *I am certain that it snowed*, the proposition is still *it snowed*, and *I am certain that* is an expression of modality, not subject to the evaluative processes applied to propositions. In both *It certainly snowed* and *I am certain that it snowed*, then, we find a common proposition and two different ways in which speakers intrude into the speech act to assess it.

This same kind of analysis applies to other kinds of metadiscourse. For example, consider a sentence with an illocution marker introducing a proposition: *I conclude by noting that it snowed*. Is the illocution marker subject to the evaluative processes that we apply to propositions? If so, it should be what the tag in a tag question applies to. But we would not tag this sentence as *I conclude by noting that it snowed, don't I?* Rather, we would say *I conclude by noting that it snowed, didn't it?* This shows that here, too, the proposition is *it snowed* and the main clause is a dressed-up form of an illocutionary adjunct (*In conclusion* or *To conclude*).

None of these comments is meant to suggest that hearers and reader cannot or do not react to or judge elements of metadiscourse. Indeed, if a person were to say or write sincerely that *I am certain that the world is flat* or *I find it wonderful that the little boy slashed his hand*, we would probably react quite intensely. In addition, if a person were to say or write *He fell to the ground, clutching his chest; however, he died*, we would immediately react.

But how, to what, and on what basis would we react? In the case of the first of these three examples, we would react to the expression of modality. We would say that it is misguided, silly, or stupid, and we would do so on the basis of our knowledge of the world. We would not say that *I am certain* itself is false, since this person is sincerely certain. In essence, we would be reacting to the

speaker's or writer's personal judgment, calling it misguided, silly, or stupid.

Similar comments apply to the second sample sentence. In this case, we would react to the expression of attitude. We would say that it is inappropriate or cruel, and we would do so on the basis of acquired attitudes toward serious bodily injury. We would not call the expression of attitude false, since the person apparently has that attitude. Again, in essence we would be reacting to a speaker's or writer's personal attitude, calling it inappropriate or cruel. In the case of the third sentence, we would react to the *However*, calling it inappropriate or illogical on the basis of semantic relationships expressed in the text and derivable from experience in the world (dying is often subsequent to falling on the ground while clutching the chest, not contradictory to such falling). Again, we would not call the *However* false, just illogical. In essence, we would be reacting to a perceived flaw in the structure of a text, in the logical relationships within a text.

In sum, we use propositional material to convey information about objects, states, events, and actions in the world outside the text and the interactions associated with it. Our concern is whether the information is true or false of that world. On the other hand, some kinds of metadiscourse convey information about speakers' and writers' personal responses to (judgments about, beliefs about, attitudes toward) and uses of propositional information. Our concern is whether such responses are appropriate and wise. Other kinds of metadiscourse convey information about how parts of texts should be linked together to form a coherent whole. Our concern is whether the linkages are fitting and logical.

Thus as Halliday has shown throughout his recent work, when people use language, they nearly always

work toward fulfilling three macrofunctions. They do this by selecting options in three basic semantic systems, the ideational, the interpersonal, and the textual. Thus they convey at least three different kinds of meaning.

Options within the ideational system “are concerned with the content of language, its function as a means of the expression of our experience, both of the external world and of the inner world of our own consciousness. . . . (Halliday, 1973, p. 58).

Options within the interpersonal system are concerned with “language as the mediator of role, including all that may be understood by the expression of our own personalities and personal feelings on the one hand, and forms of interaction and social interplay with other participants in the communication situation on the other hand” (Halliday, 1973, p. 58). These options allow writers to reveal their personalities, to evaluate and react to the propositional material, to show what role in the communicative situation they are choosing, and to indicate how they hope readers will respond to their propositional messages.

And options within the textual system have “an enabling function, that of creating text, which is language in operation as distinct from strings of words or isolated sentences and clauses. It is this component that enables the speaker to organize what he is saying in such a way that it makes sense in context and fulfills its function as a message” (Halliday, 1973, p. 58). Without these options, writers would be able to form only lists of sentences, not cohesive texts, and they would not be able to express ideational and interpersonal meanings well.

Obviously, propositional meaning or primary discourse fulfills the ideational function of language. And it seems that the kinds of metadiscourse—along with other linguistic elements—can fulfill either interpersonal

or textual functions of language. That is, the illocution markers, modality markers, narrators, attitude markers, and bits of commentary probably work to fulfill the interpersonal function of language. And text connectives and code glosses probably work to fulfill the textual function of language.

Certainly the interpersonal and textual functions are important in linguistic actions. But there is very little agreement about how much of any particular kind of metadiscourse is appropriate and helpful in various parts of different kinds of texts. On these matters, as Lindgren (1982) points out, scholars and researchers differ widely. Some claim that all metadiscourse is a waste of words, comparable to "throat-clearing" in speech (see Wydick, 1979, p. 63). Others claim that metadiscourse helps make a text "friendly" (Singer, 1986), and that it can help writers "tune writing to an audience and to clarify how the parts of an argument fit together" (Lindgren, 1982, p. 177). And still others assert that the use of kinds of metadiscourse is merely a matter of personal taste.

In the light of many researchers' concern with only the propositional domain of texts, it is not surprising that the empirical work that might help sort through and respond to the claims cited above has not been done. Indeed, there has been little study of the effects of kinds of metadiscourse in various kinds of texts. Much of the work on metadiscourse and metacommunication has been on spoken, not written, texts, and often it is primarily taxonomic or suggestive of future research directions (see Rossiter, 1974; Hewitt and Stokes, 1975; Donaldson, 1976; Mittowch, 1977; Keller, 1979; Schiffrin, 1980; and Ragan and Hopper, 1981).

The empirical work that has been done on the uses and effects of kinds of metadiscourse in written texts has focused on what are here called text connectives and

illocution markers. This work includes studies by Robertson (1966), Stoodt (1972), McClure & Steffensen (1980), Crismore (1980), and Meyer (1982). These studies have generally found that explicit connectives enhance comprehension, although different readers may be affected differently by the same connectives.

Therefore, it is still very much the case, as Crismore notes (1983), that little empirical work has been done on how the kinds of metadiscourse that fulfill interpersonal functions can affect the operations that readers apply to informative texts. Researchers face many significant questions about how such interpersonals affect readers as they perceive, process, comprehend, store, and recall texts conveying propositional meaning. Certainly an adequate model of the processes of reading and responding to texts should provide answers to these questions. And pursuing these questions might reveal interesting things about the structure of texts, the functions of elements of texts and the way in which different readers interact with texts.

There are several possible ways to begin pursuing the questions alluded to above. This study makes a beginning by examining how readers recall modality markers introducing clauses of propositional material. The main reasons for this procedure are that it is intuitively appealing to think that modality markers would have salient effects upon readers, that therefore the modality markers would at least be recalled, and that recall tests have been widely used in research on discourse processes.

#### EXPERIMENTAL MATERIALS

Two short informative paragraphs that were available from earlier tests on other problems were adapted for use in this test. One of these was a paragraph with a constant topic. In such a form either the same topic or a slight modification of it appears in each sentence. The

topic of a sentence is that which the sentence is about, that which the sentence comments on; it usually corresponds to given information and is expressed in the syntactic subject. To this common topic located near the beginning of each sentence are linked different bits of new information (information that is not expressed in, is difficult to derive from, or is relatively less accessible in prior sentences). Therefore, in such a paragraph each sentence after the first moves from a topic expressing identical or closely related given information to some new information. The particular paragraph of this form adapted (called paragraph *a*) reads as follows (with the topics of all sentences after the first italicized):

Research Writing is probably the most important course for college students. *The assignments for this course* are three short expository essays and two long and very difficult research papers. Thus *the course* requires a great deal of students' time. But *passing Research Writing* is almost synonymous with future success in college. *Some of the course's benefits* are a greater familiarity with the library and the development of organizational skills, analytic ability, and smooth writing style. *Some of its disadvantages* are cramped fingers, a sore back, and bloodshot eyes. *Research Writing* may be taken only by freshmen in the Humanities Division. (100 words)

The second paragraph adapted for this test (called paragraph *b*) was a kind of expository paragraph with "simple linear progression of topics" (Danes, 1974, p. 118). In such a paragraph, the information expressed near the end of the first sentence becomes (sometimes with some slight modifications) the topic and the syntactic subject of the second. The information expressed near the end of the second sentence becomes the topic and the syntactic subject of the third. This pattern continues throughout the paragraph, producing a chain of given and new information linking sentences. Again,

therefore, each sentence after the first moves from given to new information. The particular paragraph adapted appears below (with the topic of all sentences after the first italicized):

All high-school seniors who plan to go on to college must take the American Novels course. *This course's required reading list includes at least eight selected novels. One of these is Nathaniel Hawthorne's The Scarlet Letter. This novel's main character is a guilt-torn and extremely sensitive woman named Hester Prynne. She had been forced to wear a scarlet A by the Puritans of Boston. The Puritans' chief characteristics were ambition and a rigid morality. This rigid morality was one of the traits that Hawthorne criticized. However, his criticism was tempered by his open-mindedness.* (93 words)

To prepare for the test, a five- or six- word clause of metadiscourse was added to the beginnings of four sentences in paragraph *a*, which has seven sentences. These clauses are modality markers. The four clauses read as follows: *It is my firm conclusion that, Thus I can say without hesitation that, It is my private opinion that, and I am quite sure that.* These clauses were selected in order to be appropriate additions to sentences of paragraph *a*. The first of these clauses was added to the beginning of the first sentence of paragraph *a*, the second of these to the beginning of the third sentence, the third of these to the beginning of the fifth sentence, and the fourth of these to the beginning of the seventh sentence. Hereafter this paragraph with the metadiscourse added will be called *a-meta*.

Paragraph *a-meta* reads as follows:

It is my firm conclusion that Research Writing is the most important course for college students. The assignments for this course are three short expository essays and two long and very difficult

research papers. Thus I can say without hesitation that the course requires a great deal of students' time. But passing Research Writing is almost synonymous with future success in college. It is my private opinion that some of the course's benefits are a greater familiarity with the library and the development of organizational skills, analytic ability, and smooth writing style. Some of its disadvantages are cramped fingers, a sore back, and bloodshot eyes. I am quite sure that Research Writing may be taken only by freshmen in the Humanities Division.

A similar operation was applied to paragraph *b*, which has eight sentences, except that different individual clauses of metadiscourse were added. Again, however, these clauses are modality markers, and they were selected in order to fit the appropriate sentences in paragraph *b*. These four clauses read as follows: *It is the department's position that*, *It is an undeniable fact that*, *We can say without reservation that*, and *It has always been clear that*. The first of these was added to the beginning of the first sentence in paragraph *b*, the second of these to the beginning of the third sentence, the third of these to the beginning of the fifth sentence, and the fourth of these to the beginning of the seventh sentence. Hereafter this paragraph with the metadiscourse added will be called *b*-meta.

Paragraph *b*-meta reads as follows:

It is the department's position that all high-school seniors who plan to go on to college must take the American Novels course. This course's required reading list includes at least eight selected novels. It is an undeniable fact that one of these is Nathaniel Hawthorne's *The Scarlet Letter*. This novel's main character is a guilt-torn and extremely sensitive woman named Hester Prynne. We can say without reservation that she had been forced to wear a scarlet *A* by the Puritans of Boston. The Puritans' chief characteristics were

ambition and a rigid morality. It has always been clear that this rigid morality was one of the traits that Hawthorne criticized. However, his criticism was tempered by his open-mindedness.

In sum, four of the seven sentences in paragraph a-meta begin with clauses of metadiscourse, as do four of the eight sentences in paragraph b-meta. In all of these particular sentences the clauses of metadiscourse serve as main clauses. In the remaining sentences in these paragraphs, the main clauses express propositional material.

## SUBJECTS

The subjects ( $n=38$ ) were sophomores from a middle-class, predominantly white, moderately-sized high school in the suburbs of Chicago. They were academically heterogeneous; some of the best and some of the poorest students in that sophomore class were represented. At the time of the test, nearly fifty percent of these students indicated that they intended to go on to college.

## EXPERIMENTAL PROCEDURE

Two groups of nineteen subjects were assembled at random. First, so that they could adjust to the experimental task, they were taken through a practice session. All of them read a practice paragraph chosen from a college catalog because it is about as long (98 words) as a-meta and b-meta, and not because of the nature of its propositional or interpersonal meanings.

The subjects were told to read the paragraph at their own speed as attentively as possible, trying to remember as much of it as possible. Moreover, they learned that they were to read the paragraph only once; they were to try to keep their eyes from flitting back to sentences that they had already read. Their reading times varied very slightly. Immediately after they read the paragraph, they were to attempt to reproduce it in writing as fully and accurately as possible, trying to keep the

sentences in order, but recording whatever phrases and words they could recall in any order once they started to encounter gaps or questions about elements and the order of elements in their memories. Their writing time was unlimited.

A few minutes after all finished this practice session and without reviewing how well they did recalling the practice paragraph, each one of the two groups read one of the paragraphs with metadiscourse. They were instructed to proceed exactly as they had in the practice recall session.

When their written protocols were examined, counts were made of the number of correct words of propositional discourse in each, the number of correct words of modality markers in each, and the number of modality marker intrusions. Individual words of modality markers rather than idea units or propositions were counted primarily because it probably is misleading to think of clauses functioning interpersonally in terms of idea units or propositions. And thus for the sake of consistent later comparisons between metadiscourse and propositional discourse, individual words of propositional discourse were also counted. Finally, a tally was made of the number of subjects who recalled no metadiscourse whatsoever, and the number of subjects who recalled metadiscourse from only the first or the seventh sentence of the paragraph that they had read. The recall of these latter subjects could be due principally to primacy or recency effects.

## RESULTS

The results were analyzed and evaluated as follows: first, for each subject a percentage was derived by dividing the number of propositional words each recalled from a paragraph by the total number of propositional words in that paragraph. Another percentage for each

subject was derived by dividing the number of words of modality markers each recalled from a paragraph by the total number of words of modality markers in that paragraph. Then the mean percentage of propositional words and the mean percentage of words of metadiscourse recalled by the nineteen subjects who read and recalled one of the paragraphs were calculated. Finally, for each paragraph a dependent *t*-test was used to determine whether the difference between the mean percentage of propositional words and words of metadiscourse was statistically significant. These data would help compare how well readers recalled propositional material with how well they recalled modality markers. And thus these data would give the first clues about how modality markers affect readers.

The nineteen subjects who read paragraph a-meta recalled a mean of 29.77% of the propositional words and a mean of 25.4% of the modality markers. Running a dependent *t*-test on the difference between these mean percentages produced a *t* of 1.14 (*p* = .269).

The nineteen subjects who read paragraph b-meta recalled a mean of 20.59% of the propositional words and a mean of 16.67% of the modality markers. In this case the *t*-test produced a *t* of 1.35 (*p* = .193).

**Table 1** Recall of propositional material and modality markers from full paragraphs

	mean percentage of propositional material recalled (standard deviation)	mean percentage of modality markers recalled (standard deviation)	<i>t</i>	<i>p</i>
para a-meta	29.77 (.137)	25.4 (.144)	1.14	.269
para b-meta	20.59 (.082)	16.67 (.108)	1.35	.193

In both cases, subjects recalled a smaller percentage of metadiscourse than they did of propositional discourse. However, in neither case were the differences between the mean percentages statistically significant. On the basis of these data, therefore, it is impossible to begin discussing whether the modality markers used in these tests affect readers' memories any differently from the way that propositional material does.

On closer examination of the two experimental paragraphs, though, it was discovered that there was probably a built-in bias in their structure in favor of the modality markers. That is, each paragraph begins with a six-word clause marking modality. And Gomulicki has shown that at the beginning of a passage "attention is paid to everything. The opening words are thus likely to be well recalled, whatever their nature" (1956, p. 91).

Therefore, it is possible that the mean percentages of modality markers recalled are fairly high simply because each paragraph begins with six such words. A glance at the numbers of subjects who recalled modality markers from only the first sentence of the paragraph they had read adds credibility to this possibility. For in the case of each paragraph many subjects who recalled some modality markers did so from only the first sentence. The numbers are as follows: 10 subjects for paragraph a-meta, and 14 for b-meta. To count all the words of metadiscourse recalled, then, probably leads to a false impression of how it actually affects readers' memories.

Thus it was decided that a more appropriate way to examine the results of the recall test was to derive new percentages, this time not counting any of the words conveying modality judgments and propositions from the first sentence in each paragraph. The counts were started with the second sentence, with comparisons of the number of propositional words recalled to the number

possible and of the number of modality markers to the number possible. The governing assumption was that by the second sentence the kind of special attention that readers give to the first few words of passages would have largely changed into the kind of attention they normally give material within a passage. And starting the counts with the second sentence led to some striking data.

From the beginning of the second sentence to the end of paragraph a–meta, the subjects recalled a mean of 24.32% of the propositional material and a mean of 7.43% of the modality markers. The dependent *t*–test produced a *t* of 5.16 ( $p < .001$ ).

From the beginning of the second sentence to the end of paragraph b–meta, the subjects recalled a mean of 13.52% of the propositional words and a mean of 1.17% of the modality markers. Here the *t*–value is 6.05 ( $p < .001$ ).

**Table 2** Recall of propositional material and modality markers from partial paragraphs

	mean percentage of propositional material recalled (standard deviation)	mean percentage of modality markers recalled (standard deviation)	<i>t</i>	<i>p</i>
paragraph a–meta	24.32 (.138)	7.43 (.124)	5.16	<.001
paragraph b–meta	13.52 (.082)	1.17 (.051)	6.05	<.001

From this perspective, what is striking about the recall tests is that the modality markers are recalled far less well than the propositional material. In fact, very few modality markers are recalled. In this connection, it is interesting that in the case of both paragraphs some students recalled no modality markers whatsoever. Two

recalled none from paragraph *a*-meta, and four recalled none from *b*-meta.

It is tempting to conclude that modality markers affect readers differently from the way that propositional material does. If this is true, then an interesting question to ask is whether the modality markers in these paragraphs functioned as an aid to memory of the propositional material. To seek an answer, thirty-eight different high-school sophomores were assembled at random. These students were similar in academic skills and goals to the students described above. They were randomly divided into two groups of nineteen, each of which went through a recall experiment identical to the one described above but on one of the paragraphs *a* or *b*, those without the modality markers. In these subjects' protocols the number of correct words recalled was calculated. Then these figures were compared with those for all of the words of propositional material recalled in the experiment on paragraphs *a*-meta and *b*-meta. Paragraphs in their entireties were considered in order to give all of the clauses marking modality, including the first in each paragraph, all possible credit that they might deserve for aiding in the recall of propositional material.

In both cases subjects recalled fewer words of propositional material from the paragraphs with the modality markers. The means are as follows: from paragraph *a* 30.33 words, from paragraph *a*-meta 26.79 words; and from paragraph *b* 37.42 words, from paragraph *b*-meta 21 words.

To be even fairer to the modality markers, the numbers of words of propositional material recalled from the first, third, fifth and seventh sentences—the sentences beginning with the clauses marking modality—of the two paragraphs *a*-meta and *b*-meta were calculated and compared with the numbers of words of propositional material

recalled from the corresponding sentences in paragraphs *a* and *b*. Perhaps modality markers function as an aid to memory of the propositional material expressed in the same sentence that they are.

Again, however, the figures argue against this. In all cases, certain subjects recalled fewer words of propositional material from the sentences beginning with modality markers in *a*-meta and *b*-meta than others did from the corresponding sentences in *a* and *b*. The mean numbers of propositional words recalled from the appropriate sentences in the corresponding paragraphs are as follows: from paragraph *a* 16.67 words, from paragraph *a*-meta 13.47 words; and from paragraph *b* 26.21 words, from paragraph *b*-meta 16.63 words. Apparently, then, in these cases modality markers did not serve as an aid to the recall of the propositional material expressed in sentences with them.

## DISCUSSION

Before discussing these results at length, several caveats should be noted. First, the data reported here emerged from only one kind of test. Second, the subjects, all of whom were high school sophomores, probably did not employ as many kinds of reading styles and strategies as larger and more diverse groups of readers might employ. Finally, it is also true that the materials used in this experiment contain a higher concentration of full-clause modality markers than one would find in most naturally occurring texts.

Nevertheless, this experiment, with two different paragraphs and a fairly large sample of subjects, provides good evidence that modality markers such as are used here are scarcely recalled and do not help subjects recall the propositional material that is associated with them. And from one point of view one could argue that subjects should recall a significant number of modality markers.

After all, the modality markers are heavily represented in the paragraphs, they appear in rather marked or noticeable form (*It has always been clear that* rather than *clearly*, for example), they appear in the rather prominent beginning portion of sentences, they are quite evenly distributed throughout the paragraphs, and the subjects were instructed to try to recall all of a relatively short paragraph.

How, then, can one explain the results? There are at least six possible explanations, the last of which is the most probable one.

In the first place, since the modality markers do not expand propositional material, do not contribute to the gist of a passage, it is possible that readers classify them as unimportant to the gist and disregard them. Perhaps this happens very quickly. It is conceivable that readers are able to distinguish modality markers from propositional content as soon as they perceive and comprehend them, that the readers then disregard the modality markers, and that all of this happens so quickly that the readers' processing of the propositional content is not affected in any measurable way.

However, since the strings of modality markers occupy the slot or slots in the experimental sentences where readers probably look first to discover the topics of those sentences and good clues to the gist of the experimental paragraph, it may be that readers process sentences beginning with modality markers by starting with the belief that these elements are what the sentence is about. Quickly they realize that the modality markers are not what the sentence is about and decide that they can disregard them. Through these processes, however, their attention to the propositional material is delayed and perhaps vitiated. There is evidence for this in that the modality markers apparently interfered with subjects' memory for propositional material expressed in the same sentence with them. As readers proceed farther and

farther into a text, though, they might have to spend less time distinguishing modality markers from propositional content, primarily because they become more and more confident about the gist of the text.

The common element in both of these scenarios associated with the first explanation is that readers disregard modality markers since they do not contribute to the propositional gist of a passage. A second and closely related overall explanation is that readers disregard modality markers if the situation of or purpose for reading does not demand that they pay close attention to them.

In this experiment, subjects were asked to recall paragraphs. But recall might have been directly associated in the subjects' minds with propositional meaning, not with interpersonal meaning. For this reason subjects could have disregarded the modality markers.

But this might not have happened in another kind of experimental situation. Suppose that the subjects had been asked to read and evaluate the truth value of the experimental texts. After doing this, they might have recalled a significant number of modality markers, primarily because the modality markers would be intimately involved with the experimental task.

Although both the first and the second explanations are consistent with the experimental results, both are somewhat startling and counter-intuitive. For they suggest that elements that writers use in texts to signal their assessment of the truth value of propositional content are disregarded by readers, either in all cases or in cases that do not call attention in some way or other to such truth values.

Must we assign no role or a very limited role in discourse processing to such modality judgments, judgments that seem to be necessary for healthy debate,

refined discernment, the acknowledging of various perspectives on things, and ethical worlds of discourse? It is somewhat difficult to accept such an assignment since modality markers appear often in the most admired prose, and since it is easy to bring to mind speakers or writers who have become embroiled in arguments since they used modality markers that their addressees regarded as inappropriate. At the same time, it is easy to think of people who have avoided or have worked their way out of harsh arguments through the tactful use of modality markers. Moreover, some writers go so far as to assert that the "major content of an utterance is often found in the modal operations rather than in the ostensible content" (Kress and Hodge, cited in Ruthrof, 1981, p. 196).

A third possible explanation is that readers disregard the exact words expressing a modality judgment almost as soon as they comprehend them but that they retain a kind of modal tag that they attach in long-term memory to the propositional information that they store. They could, therefore, hold a proposition in long-term memory with a tag indicating uncertainty attached to it. Or they could hold a proposition in long-term memory with a tag indicating high probability attached to it.

If this is the case, such tags would not be revealed in a recall test, mainly since the exact words from which they are derived are lost and since bracketing a statement with something like an uncertainty tag on a recall test would strike subjects as odd or impossible. To get at such tags, we would have to add to recall tests a task requiring subjects to indicate what level of validity they attach to the propositional information that they recall.

Moreover, if such tags exist, it would be important to determine whether or not they decay over time. In other words, would a process similar to the sleeper effect

(see Hannah & Sternthal, 1984) operate on the tags? Would the tags erode and leave readers only with propositions that they regard as certain, not with some that are certain, some probable, and some doubtful?

A fourth possibility is derivable from generalizing ideas associated with the third. Perhaps as people read they try to do two things: (1) comprehend and remember the propositional information, and (2) establish a modal framework within which all the propositional information is to be viewed.

Perhaps when no indications of modality appear, readers regard all the information that they encounter within the modal framework of "Truth." But if they read some explicit modality markers, they use them to set their modal frameworks appropriately (for example, "Highly Probable," or "Doubtful") and then drop individual words of the modality markers. The modal framework then stays the same until other modality markers appear and cause a change in it.

In this experiment, the readers could have used the first clause marking modality to set their modal frameworks to something like "Most Certain," or "To be Stressed." They then could have forgotten the exact words of the first modality marker (although since in this case those words were the first in the passage, subjects often remembered them), and could have disregarded all subsequent modality markers after a quick inspection since they do not call for changes in the modal framework.

The third and fourth explanations can account for the experimental results, but neither of these is the most probable explanation. There is insufficient experimental evidence—here or elsewhere—for such tags or frameworks. And the fifth and sixth explanations seem more compelling.

The fifth explanation rests on the assumption that there are several different "planes" or "domains" of experience in texts (see Dillon, 1981, p. 114). One of these would be the propositional or ideational domain. Another would be the interpersonal domain. And since modality markers carry essentially interpersonal meanings, they would have effects within the interpersonal and not the propositional domain. Thus they would not be recalled, since recall of exact words is a process directly linked to the propositional domain.

Instead, modality markers could operate on a purely interpersonal level, in which exact words are not nearly as important as the feelings and attitudes that they stimulate. On this level, the interactions between a mind and a text could be very similar to the interactions between people (cf. White, 1984, p. 15). Thus modality markers could affect readers' feelings about the propositional material, their reactions to the voice projected in the writing, their attitudes about the writer's apparent overall purpose, their decision whether or not to share fully in the "cooperative experience" (White, 1982, p. 433) that the text offers. The modality markers could do all this without being recalled themselves.

If readers do indeed react to texts in a manner similar to the way in which they react to other people, how might they have responded to the paragraphs used in this experiment? Obviously, they would have tried to recall the propositional information. But at the same time, they would be reacting to the tone of or voice in the paragraphs. And in both experimental paragraphs the voice—using several emphasizing or stressing types of modality markers in a relatively short space—probably struck them as somewhat irregular. They could have viewed the writers as people trying too hard to get their point across and accepted, thereby belying a lack of confidence or a hidden agenda. In terms of this explanation, then,

the readers would be simultaneously engaged in two different kinds of processes—trying to comprehend and store the propositional information, and forming a personal reaction to the piece and its writers. The first process would reveal itself in a recall test; the second would not.

If this explanation is correct, researchers will have to devise and implement other kinds of tests. These tests, for example, would be designed to reveal such things as readers' reactions to and attitudes toward writers, subject matters, treatments of subject matters, roles that they are asked to play in texts, and roles that they are asked to play after reading the texts. Moreover, researchers may find that they have to classify their subjects much more finely than they do now. Different personality types may react differently to different kinds of roles within the interpersonal realm of meaning. Finally, researchers will probably have to be especially sensitive to potential interactions among all these kinds of variables, for in interpersonal matters, many forces can interact.

But even more important, an explicit model of the interpersonal domain, of interpersonal interactions in texts, should be developed. This could be used to construct many more questions for research than are detailed here. At the least this model should cast light on the following aspects of communicative interaction: that real people try to perform very specific kinds of actions on others, that they often do this by conveying different kinds of meaning symbolically in language, that they usually form this language into connected texts, that in these texts the different kinds of meaning can have complex relationships to each other, that writers or speakers project themselves in many ways into the texts and adopt stances on the meanings in the texts, that other people of particular natures engage the texts, that they have particular purposes for doing so, and that all

of this happens within a particular context, which may influence the transaction profoundly.

Such a model does not exist now. And since it will obviously be a very complex model, it will require a significant amount of time to describe and test. However, several researchers have begun to explore areas related to some of the aspects noted above. In particular, they have begun investigating how the nature of particular readers can affect discourse processes.

For example, Bruner (1971) reports on work that has explored the varying sensitivities of children from different social classes to expressions of uncertainty. Dutta and Kanungo (1975) have investigated how readers' positive and negative evaluations of different bodies of information affect their memory for that information. Van Dijk (1982) has examined how readers' beliefs, opinions, attitudes, and ideologies can influence their understanding of words, their formation of complex propositions, their establishing of local coherence, and their formation of global macrostructures. He shows how these processes may lead to a text representation that is different from what one might expect solely on the basis of a propositional analysis of the text. Additionally, Crismore (1984, April) has worked on how readers with different anxiety levels react to the projected presence of authors in texts. And Spiro (1982a, 1982b) has conducted tests that argue for incorporating readers' affective colorations and subjective evaluations of parts of texts into a model of discourse processes. \*

Although it appears that the model and tests of interpersonal interaction in texts that the fifth explanation calls for will be most helpful in working with many kinds of metadiscourse in the future, the fifth explanation may be more elaborate than the experimental results of interest here warrant. A sixth explanation is simpler.

This explanation assumes that modality markers stimulate an interaction between the propositional material that they are attached to and readers' knowledge and beliefs. And it proposes that modality markers will be recalled if they stimulate a clash between the claims of the propositional material and readers' knowledge and beliefs. Moreover, the explanation proposes that as the clash involves claims that readers have greater and greater stakes in, their memory for the modality markers will grow clearer and clearer.

On the other hand, if the modality markers stimulate no clash between the claims of propositional material and readers' knowledge and beliefs, they will probably not be recalled. And readers would probably pay less and less attention to them as they are associated with material that becomes even more removed from what they have a stake in.

For example, if people who know that the world is round were to read that "It is undeniably the case that the world is flat," they would probably recall the modality marker since it heightens a clash between what the propositional information of the sentence claims and what they know.

At the same time, if these people were to read that "It is undeniably the case that the world is round," they would probably wonder momentarily why someone would stress what nearly everyone knows to be a fact. But subsequently they would have no reason to hold the modality marker in memory. They would probably feel that it stresses needlessly what was obvious from the start.

Or consider an example that raises the stakes for some people. Those who believe in God and who were to read that "It is certain that God is dead" would most likely retain the "It is certain" and retain it well since it heightens a clash between the propositional claim and their

belief, and, even more, since that belief is supremely important to them.

However, if people who believe in the death of God were to read that "It is certain that God is dead," they would experience no clash between propositional claims and their beliefs and would therefore have no reason to retain the "It is certain" in memory.

The exact nature of how this would work is unknown. Perhaps readers hold the introductory modality marker in a buffer until they read the propositional information, then they judge to what extent the propositional information accords with their knowledge and beliefs. If the propositional information accords with their knowledge and beliefs, they disregard the modality marker if it stresses the propositional information, and retain it if it hedges the propositional information. Similarly, if the propositional information does not agree with the readers' knowledge and beliefs, they would retain the modality marker if it stresses the propositional information and drop it if it hedges the propositional information.

In this light, the results of the experiment reported here are what would be expected: the modality markers stressed propositional material, but that material was either known to subjects or in accord with their beliefs (for example, they already knew about the Puritans and Hester Prynne in *The Scarlet Letter*). Thus all their normal patterns of response to discourse gave them no reason to retain the modality markers, and these patterns provided a pressure stronger than that exerted by the demands of the recall test.

All of these explanations, of course, open up many possible avenues for future research, research designed to tease out the specific aspects of the nature of readers' actual responses to modality markers. The avenue of research that should perhaps first be pursued is that

leading to a delineation of subjects' knowledge and beliefs prior to a test. And the text passages should cause some clashes between propositional information and readers' beliefs that are heightened by modality markers. Material that readers do not believe should be stressed, and material that they do believe should be hedged. And other measures besides the recall test should be used. Reports from subjects about their reactions as they work through a passage sentence by sentence might be useful, as might post-test interviews with subjects about how they reacted to the modality markers.

Such research should answer the questions posed here. And it promises to answer other questions as well. Some of these have to do with modality markers. For example, when and why do people tend to "dress up" expressions of modality into full clauses? Are such forms more or less salient to readers than the congruent forms of modality? To what extent are dressed-up forms of modality associated with the verbal games that people play? (cf. Halliday, 1985, p. 340)?

Other questions for research have to do with other kinds of metadiscourse. For example, is it possible that some kinds of metadiscourse are especially appropriate or even necessary in some kinds of texts? If so, what conventions govern their use and how are these learned? How closely connected to the social and cultural order are uses of metadiscourse? On the other hand, are some kinds of metadiscourse essentially inappropriate in certain kinds of texts?

Finally, other questions are related to the relationship between metadiscourse and the psychology and skills of particular readers and writers. Might heavy or light uses of some kinds of metadiscourse be related to writers' grasps of their subjects or to their rhetorical, cognitive or emotional development? Or do readers at different

points on such scales react differently to different kinds of metadiscourse? Some suggestive work along these lines has been done. For example, Nelson (1975) provides evidence that some people from early childhood on seem to be more attuned to the interpersonal domain of meaning than are others. It would be interesting to study how people more attuned to the interpersonal domain develop their personalities and move through the educational system. Halliday (1970) suggests that language in its interpersonal function has an essential role in the development of personality and in the success of individuals at school.

All these questions will probably be difficult to answer. But the effort should be worthwhile. For it promises to cast light on modality markers, other kinds of metadiscourse, and the nature of human interactions in texts.

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