

PROPOSITIONAL ANALYSIS AND THE TEACHING OF READING *WITH* WRITING

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Perhaps the most difficult argument composition teachers have to make with students is the argument for what makes good writing good. The difficulty lies in the fact that students and teachers generally disagree, and in the fact that teachers disagree among themselves. Recent basic research in the psychology of readability addresses this difficulty and appears potentially able to resolve it. Although writer-reader-text interaction has been the focus of much recent work in composition,¹ the work of Walter Kintsch, a professor of psychology at the University of Colorado, offers a most interesting and usable approach to text analysis, and his ideas not only reveal what makes good writing good but also suggest techniques for teaching that to students.

Kintsch's research involves psychological studies of memory. His experiments test and investigate a particular theory about the way meaning is stored in human memory. Since reading is a process of getting meaning from print and storing it in memory, Kintsch has quite recently begun to study and write about his theory of meaning and memory and its relationship to reading. Actually, all of Kintsch's work is relatively recent. He has been publishing reports of his studies in the field of meaning and memory only since 1972, and only some of his results have been confirmed at this writing. Kintsch's work is also relatively new to practitioners in reading and writing because he has been publishing mainly in professional journals of psychology which are neither widely available nor easy to read.

In the latest version of Kintsch's theory, he represents the

meaning of a text at three levels: a micro-level of sentences, a macro-level of discourse, and a third level addressing the text-reader relationship. At the sentence level, meaning is analyzed as a series of short, abstract statements called propositions. Each proposition is made up of word concepts, which are also abstract, and which are different, in a variety of ways, from words. A word concept in a proposition may appear in a real sentence as a word or a phrase. The word concepts may serve one of two functions within the proposition: they may be predicator/relational terms (often verbs), or they may be arguments. In his analyses, Kintsch follows several conventions in the writing of propositions. First, the word concepts are always written in capital letters to avoid confusing them with words. The predicator is always written first, and the word concepts are separated from one another by commas. Finally, each proposition is enclosed in parentheses, and they are usually numbered, if a long text is under study, to make it easy to refer to them in discussion.

Since several more technical terms will be needed to understand the theory and its implications for reading and writing, perhaps an example will help clarify propositions and their basic form:

Mary bakes a cake.² (BAKE, MARY, CAKE)

Here, BAKE is the predicator, and MARY and CAKE are the arguments of the proposition. The abstract nature of this proposition is illustrated by the fact it might be the proposition underlying any of the following forms:

Mary bakes a cake.
 Mary is baking a cake.
 A cake is being baked by Mary.
 The baking of a cake by Mary.
 Mary's baking of a cake.³

The rules used to analyze a sentence or group of sentences for propositional content have been worked out in some detail,⁴ though there are problems with the system of analysis.

Despite the difficulties of using the system of propositional analysis, one of its key virtues with respect to questions about reading and writing is that it can be used to deal with larger units of discourse than the simple sentence, such as a complex sentence, paragraph or whole essay. At this macro-level or discourse level of analysis, pro-

positional analysis yields an ordered list of propositions, called a text base. In the text base, two interesting features of propositions become apparent. The first of these is the capacity for embedding. In a list of propositions, one proposition may be embedded in another by serving as an argument of it. Here is an example of this feature, using a complex sentence:

If Mary trusts John, she is a fool.
 (IF, (TRUST, MARY, JOHN), (FOOL, MARY))⁵

It should be clear that embedding allows propositional analysis to handle complex sentences with ease.

The text base also shows a distinction between two broad types of propositions, subordinate and superordinate propositions. The classification is made on the basis of the following definition: "a proposition β is subordinated to another proposition α if α precedes β in the list of propositions and if α and β have at least one term (relation or argument) in common."⁶ This system of classification leads to the formation of a hierarchical arrangement of propositions in the text base, and produces a measure of text coherence, an important feature of good writing. One more example will help illustrate the hierarchical ordering of superordinate and subordinate propositions, and summarize the theory to this point.

The following sentence was used in an early study done by Kintsch and one of his colleagues: "Romulus, the legendary founder of Rome, took the women of the Sabine by force."⁷ This sentence is based on the following propositions:

1. (TOOK, ROMULUS, WOMEN, BY FORCE)
2. (FOUND, ROMULUS, ROME)
3. (LEGENDARY, ROMULUS)
4. (SABINE, WOMEN)

There are several features of this text base to be noted. First, the predicators (TOOK, FOUND, LEGENDARY, SABINE) are not all verbs. Predicators are often, but not always, verbs. Even though there are no embedded propositions here, there is a superordinate proposition, number 1, which shares at least one term with the subordinate propositions 2, 3 and 4. Propositions 2 and 3 share the word concept ROMULUS with proposition 1, and proposition 4 shares the word concept WOMEN. Though both super- and subordinate propositions

and embedded propositions share arguments, there are two key differences. In embedding, a whole proposition becomes an argument of a second proposition, whereas in subordination, propositions (with or without embedded propositions) form an ordered list in the text base. Second, embedded propositions involve relationships within the sentence, whereas subordination deals with relationships within the sentence but also beyond it.

The hierarchical ordering of propositions in the text base is handy when the goal of an analysis is to reveal the gist or sense of the text, which Kintsch calls its macrostructure. The hierarchy makes it possible to group propositions from the text base list so that the subordinate propositions are all attached to their superordinate propositions. Each grouping of one or more superordinate propositions and its subordinates can be labelled with an arbitrary name, and the larger structure of a longer text is arrived at as follows:

Whole lists of propositions may be given arbitrary names, and these names can likewise be linked by the symbol &. Each name can be expanded as a list of other names and eventually propositions. Thus, the macrostructure of a text can be recursively defined simply by combining propositions into ordered lists and then constructing lists of lists, until the desired level of organization has been achieved.⁸

The macrostructure is something like an outline, using propositions or groups of propositions with an arbitrary name as the elements of the outline. Kintsch provides a detailed example of how the macrostructure of a brief psychological research report can be derived from its text base.⁹

A brief description of this example illustrates how the macrostructure can be derived. It is important to understand how the macrostructure is produced, since it is a formal and objective device that clearly reveals the coherence of the text or lack of it, along with other features. In the passage on which the example is based, Kintsch gives a brief report of a psychology experiment done using reading time to test the validity of propositions. The report is divided into standard sections: an introduction, method, results, and discussion. If the concept of a macrostructure is clear, the reader can probably guess that these divisions appear in the text base as superordinate propositions. The subordinate propositions are those that represent information in the passage about how many subjects there were, what they were asked to do, what results were obtained and what the results

showed. The macrostructure looks approximately like this:¹⁰

Reading Time (INTRO, METHODS, RESULTS, DISCUSSION)
INTRO (1,2,3,4)

METHODS (5,6,7)

RESULTS (8, 9, 10)

DISCUSSION (11, 12, 13)

Each number refers to yet another superordinate proposition, and under each of these are the subordinate propositions.

In this macrostructure, all of the superordinate propositions are stated explicitly and this is true of all of the propositions in the text base of the research report. But in other kinds of texts, and especially in student writing, many propositions are not stated explicitly, and the reader must infer them by reading between the lines. In a text base, both implicit and explicit propositions must be stated to provide a complete representation of the meaning of the text. Kintsch's research studies show that the implicit propositions have important implications for reading and writing. First, readers can and do infer implied propositions, and these propositions appear to be remembered just as well as those which are stated explicitly.¹¹ However, a second study shows that when readers are required to make inferences to form a coherent representation of a text, the text is much more difficult to read.¹²

Insights into what makes a text easy or hard to read tell us important facts about the reading process which carry over to writing and what to teach about writing. There are two additional points to be made about reading and Kintsch's system before its usefulness for writing problems can be examined. The first of these has to do with the unbelievably complex area of reader reaction to a text.

At the outset, it is easy to see why the evaluation of the reader's reaction is difficult: a particular topic may or may not be interesting to a particular reader depending not only on the text itself and how it is written, but also depending on a variety of subjective factors in the reader (motivation, fatigue, distractions, light, heat, and interest, which is the trickiest of all to measure objectively) and a variety of factors in the text itself (writing quality, clarity, neatness, and so on). An additional complicating factor is the reader's background or prior

knowledge both of reading as a skill and of the topic of the passage. This latter factor is widely acknowledged by the best researchers in reading as being crucial to the process of getting meaning from print.¹³ Ultimately, as Kintsch says, readability or the difficulty of a text is

not somehow a property of texts, but it is a result of the interaction between a particular text (with its text characteristics) and particular readers (with their information-processing characteristics).¹⁴

Readers construct the meaning they get from a text as a result of their interaction with it, in the form of a text base, and many factors affect this process. This statement confirms the standard writing teacher's maxim: writers must know their audience.

Kintsch captures the importance of knowing one's audience with his third and broadest level of analysis of meaning, using the concept of a schema. A schema provides a structure for organizing a text base into its macrostructure propositions. The schema also helps to provide a context in which inferences can be made to complete the meaning of a text. The concept of a schema is related to various psychological and information processing theories which emphasize the completion of a picture or view, such as Gestalt theories. The schema is defined formally by Kintsch as

a representation of a situation or of an event; it is a prototype or norm and specifies the usual sequence of events that is to be expected. Just like other concepts, schemata are fuzzy and imprecise. A part of the schema can reintegrate the whole schema, and once a schema is activated, its components are available and need not be specified separately.¹⁵

Kintsch provides a simple example to illustrate the schema further: the schema for a children's birthday party implies presents and guests. A more detailed example of a schema will be given below, but it is important first to see how this concept fits into the theory as a whole.

The schema is thought to provide, in comprehension, a structure in which both the macrostructure and the individual propositions within the macrostructure can be placed. Both implicit and explicit propositions are controlled by the schema. It appears that the schema provides an outline in which the meaning of the text can be put, and the propositional text base fills in the outline. Individual propositions that form the text base are reorganized into the macrostructure, which

in turn represents groups of individual propositions (or what Kintsch calls the microstructure of the text). In the previous example of the psychological research study report, the schema the reader has is the set of open spaces in the outline of the usual research report. The macrostructure propositions, or macropropositions for short, fill in the outline with the elements of INTRO, METHOD, RESULTS and DISCUSSION. These in turn are filled in by the individual subordinate propositions of the text base.

Before the reader gets lost in the blur of terminology which explains Kintsch's propositional theory, a real writing class example may make the relevance and use of these concepts clear. Kintsch observes, in studying the role of schemata in reading comprehension, that a familiar schema facilitates comprehension.¹⁶ His point is not that texts based on unfamiliar schemata are incomprehensible—only that they are harder for the reader to understand than a text based on a familiar schema.

A writing student of mine provided me with an experience which confirms this observation in an impressionistic way. The class was assigned a review essay. The subject reviewed was up to each individual student, and the student in question wrote a review of a play called *Buried Child*. In this course, as I teach it, the students bring rough drafts of their papers and present them for comments and critique by the whole class. Having already dealt with several other students' drafts for this assignment, we were all prepared for the *Buried Child* review with a twofold schema.

Our schema was shaped in part by previous essays, which had generally dealt with TV shows or movies with relatively conventional plots and characters. Thus, if "Little House on the Prairie" was the subject, we heard a summary of the plots of a few episodes, a discussion of the acting, characterization and sets, and perhaps a comparison to other shows of the same genre. Our schema was also shaped by my in-class emphasis on certain conventional aspects of good writing: the statement of a clear thesis at the outset, transitions between paragraphs, and a complete summary of the main ideas of the essay at the end. Previous essays had conformed to the schema so that their meaning was clear, and elements of the schema that could not be filled in were quickly noticed by the student critics: a poor thesis or a weak summary were always pointed out.

The *Buried Child* paper left us in a muddle, because it followed an unfamiliar schema in two ways. First, the play is not, apparently,

organized into a conventional story line. It aims, if I ever did understand the review, to represent the isolation, disconnectedness, and despair of modern life. Thus characters appear and disappear, relate to and ignore one another according to a very unusual pattern not found in conventional dramas. Moreover, the essay lacked a clear thesis, and perhaps because of the unconventional shape of the play itself, did not follow any of the sort of developmental strategies we expected. Thus, the paper's comprehension required the use of an unfamiliar schema in terms of both substance and organization, and the students' comments to the author of the paper reflected their lack of comprehension of the gist of the essay.

The final draft of the essay was more comprehensible to me because the author revised the paper to make it conform to the expected writing schema. The thesis was made more precise, and the introduction stressed the fact that the play was unconventional. The final paragraph reiterated these points and did a better job of summing up the aspects of the play that the author had enjoyed. However, the play still remains somewhat of a mystery to me. In part, no doubt, this comprehension problem lies in the fact that neither I nor any of the students had seen the play, and this, too, meant an unfamiliar schema in which to try to organize the meaning of the essay.

This example (and I am sure it is not a unique experience) is intended to illustrate that when Kintsch's ideas about reading comprehension and the underlying meaning of a text are applied to real teaching situations, their use and relevance are clear. In the case of this example from my advanced composition class, Kintsch's notion of a schema seems to provide objective confirmation of the writing teacher's dictum "know your audience." In fact, the schema does much more: it is a specific construct which can be worked with in an objective and measureable format, and it serves to explain further what makes some texts easier to read and understand than others. In addition to giving empirical support for facts about writing that we already know, then, Kintsch's theory also provides important new insights helpful in both reading and writing.

The central connection of reading to writing is suggested by the definition of the term discourse as "communication of thought by words."¹⁷ Writing involves the production of written text and reading involves the comprehension of it. If we know, as Kintsch claims to, that certain characteristics of text or of readers can make a text more or less comprehensible, then we know something also about writing.

Kintsch's research has recently begun to focus quite specifically on reading, and he has begun to speculate about the application of his theory to the reading process. One of his more recent essays, co-authored with Doug Vipond¹⁸ may be his most accessible essay on the theory, and is an attempt to begin to explore the practical use of propositional analysis. The essay looks at a very old issue in reading, readability or the difficulty of text. The essay is wholly speculative and, as the authors point out, provides only a partial analysis of the complex issues involved in readability. However, since readability is linked to pedagogical issues in writing, the essay is quite pertinent to the key issue of what makes good writing good, and how to teach that. (It is also recommended to readers of this essay who want to read Kintsch's work, because it summarizes much of the research he has done and is not overly technical.)

Readability is an old and troublesome educational problem which can be easily summarized in one question: what makes a text hard to read? Actually, this simple question conceals several questions within it: what makes a particular text hard to read? What is meant by hard? and hard for which reader under what circumstances? We have noted above that Kintsch finds that readability involves both the text and the reader as they interact, and propositional analysis allows him to break up the factors in readability into these two areas: factors in the text itself, and factors within the reader.

In reading studies carried out by reading specialists and some psycholinguists,¹⁹ readability was measured by formulas which Kintsch notes have good predictive validity, but do not really explain what makes a text hard. That is, the formulas can predict that a particular reading book will be just right for second graders, but they do not explain why the text will be too hard for first graders. The factors usually used to measure difficulty in the formulas include, most commonly, word difficulty and sentence length. Sometimes other factors are also considered.

Kintsch suggests that reading difficulty can be measured better by assessing reading rate, recall and question answering following the reading. Easy texts are read faster and remembered better by readers, and they can also answer questions more accurately after reading an easy text. Kintsch's studies usually judge readability by using reading speed and either recall or answers to questions. For the concerns of writing teachers, it is interesting that in the research, Kintsch often has his subjects recall a text they have read by writing down as much as

they can remember about it. This written recall is then analyzed in terms of propositions. The use of recall or retelling is quite common in other research on reading—notably in Kenneth and Yetta Goodman's research with miscue analysis.²⁰ The Goodmans use oral retelling, while Kintsch uses written recall, but either kind of summary could be subjected to propositional analysis. Kintsch's research techniques are well grounded in reading theory, and examine readability in propositional terms.

To get the most complete view of readability available through propositional analysis, Kintsch relies on a propositional analysis of the text to reveal factors within it, and reading rate and recall to reveal factors within the reader which contribute to difficulty. Keep in mind that Kintsch and Vipond state explicitly and emphatically that the resulting view of readability is by no means complete. Readability is quite complex and, even with propositional analysis, is poorly understood. Even the limited claims about reading difficulty that Kintsch makes are open to question and require further study.

Kintsch and Vipond's essay shows, despite these cautions, how directly useful propositional analysis can be. Starting with factors in the text, a propositional analysis provides a measure of proposition density, or how many propositions are in the abstract text base underlying a text. Proposition density is different from word length, and seems to have a direct effect on difficulty. The more propositions there are in the text base, the harder the text is in the sense that more propositions take longer to read. Kintsch established this point early in his research, when he compared reading speed on two passages of equal length with different numbers of propositions.²¹ The passage with more propositions took longer to read.

This evidence suggests, first of all, that one of the classic readability formula factors, length, does not really account for difficulty. The evidence also reveals a practical point of use in the teaching of writing, when taken together with an additional text factor, argument density. Remember that a proposition is made up of word concepts which are either relational terms (usually verbs, stated first), or arguments. The more different arguments in each proposition in the text base, the more difficult the text in the sense that higher argument density requires more reading time.²²

It is easy to confirm these points about density of propositions and arguments subjectively. A text in theoretical physics, for example, is harder for the average person to read than an Agatha Christie

mystery. The complexity of the subject matter would probably be revealed by propositional analysis: the physics would probably have a higher propositional or argument density than the Christie novel. Difficulty involves other factors which the propositional analysis would not consider, like motivational and background knowledge of the topic, and thus, clearly propositional analysis does not explain everything.

In the teaching of writing, however, these two features of text difficulty might be quite useful. Often, writing students get into trouble in an essay because they try to pack too much information into each sentence, paragraph, or into the essay as a whole. One way of trying to resolve this problem is to tell the student to write shorter sentences. Kintsch's research on propositional and argument density suggests that shorter sentences will not really solve the problem. A propositional analysis might reveal to the student that there are too many propositions in the text, or too many arguments in each proposition. Since the evidence from Kintsch's research suggests that these factors contribute to difficulty, the student writer might need to learn to lower the propositional argument density. Here, propositional analysis might provide an objective analysis to support the writing teacher's subjective judgement. The analysis might show the student quite graphically what the problem is in the writing.

Furthermore, this research issues a caveat to advocates of sentence combining. Although sentence combining exercises contribute to greater fluency in writing, combined sentences may be so dense in propositions or arguments that they actually reduce the comprehensibility of text. An awareness of this problem can help instructors use sentence combining more carefully to enable students to write better papers.

There are two further points to be made here. First, it's not at all clear that all writing teachers should learn to conduct propositional analysis. It makes the propositional system seem like another trick or panacea like transformational grammar or sentence diagramming. A teacher's awareness of the system will shed light on writing problems, and research along these lines is needed to find out whether such use of propositional analysis will really help students in a direct way.

A second point involves the mysterious nature of the pedagogy of writing. As a writing student, it was rarely clear to me on what specific grounds my writing was being judged. Many of my own writing students express a similar frustration, especially when they

move from instructor to instructor and find widely differing views and preferences concerning writing quality. More research into propositional analysis may help to take the mystery out of good writing for both students and their teachers, as it may provide clear and objective measures of what makes good writing good.

Research is needed, in particular, on propositional and argument density. Teachers need to know how to spot these two features of text as problems in student writing. The research might also look into the possibility of developing ways to help writers lower the density factor, with specific techniques, so that instead of telling students to write shorter sentences they could be given more specific writing techniques to lower density. Perhaps as computerized text analysis becomes more sophisticated, it will be possible to program a word processing computer to measure density and report it to the writer. For now, Kintsch's system offers no such techniques, so much work remains to be done.

Another factor in the text which has an effect on difficulty is coherence. This statement, like the first two points, seems obvious on a superficial level. Kintsch's system provides a specific measure of text coherence, and explains in several ways why incoherent texts are harder to read. First, the definition: coherence is established in the text base by shared arguments between propositions or by the embedding of propositions within one another.²³ A text is judged to be coherent if, in its text base, each proposition shares at least one argument with another proposition, or if propositions are embedded in one another.

Whenever a text introduces a wholly new proposition which is not coherent with the rest of the text base, a separate set of relationships is established. The incoherent parts of a text must be linked to the rest by inferences. The number of such separate and incoherent parts of the text is a factor in difficulty, in the sense that the incoherent parts are less likely to be recalled, and that inferences on the reader's part add to difficulty by increasing reading time.²⁴

A further point with respect to coherence and difficulty is that the way in which coherence is established makes a difference in the difficulty of the text such that

texts in which interconnections among propositions occurred throughout the text base were in fact easier to read than texts in which there was a more definite progression of topics, with interconnections largely restricted to neighboring propositions in the text base.²⁵

The specific, objective character of the definition of coherence makes this observation possible. These points about coherence seem to suggest several points about organization, as well as criteria by which to judge the quality of a piece of writing.

Ordinarily, students are taught to follow some pattern of logic in the organization or development of an essay. So, for instance, the process paper must follow a step-by-step organizational plan if the reader is to be able to carry out the process described. Kintsch's work says that this organizational strategy will be coherent in propositional terms only if each section of the procedure is tied to both what precedes and follows, and to the ultimate goal of the process, whether it is repairing the rust on a car or baking pineapple upside-down cake. To achieve such overall coherence, writers must use transitions between paragraphs, and they must also add sentences which make the connections between the separate steps and the final product clear. Teachers can use these concepts, especially in working with students in the revising process, to improve the coherence in the text. A clear definition and strategy for achieving coherence can produce much more readable writing.

Kintsch's work may enable teachers to go one step further in teaching composition by providing an objective means for bringing the points home to students. The use of sentences, or perhaps even whole paragraphs in a long essay, which tie each section to the thesis, may be more important than writing teachers have thought. Kintsch's work provides a new insight that can help student writers improve the coherence of their work. In classes using word processing, the search function in most programs might allow students to do a kind of coherence check by searching key words or phrases from the thesis in the rest of an essay. Using Kintsch's theory, precise definitions and particular strategies can lead to significant improvements in student writing.

Because coherence is established in part by inferences the reader must draw, coherence brings us to those factors within the reader which contribute to the difficulty of a text. As we have already noted, when the reader has to draw inferences to construct a coherent text base, difficulty increases in the sense that inferences require additional reading time. Thus, the more often propositions are stated explicitly in the text, the easier the text is to read.²⁶ Remember that both explicit and implicit propositions are used by the reader to derive the macrostructure or gist of the text. Readers' recall of text is based on both macrostructure and microstructure, or individual propositions.

Clearly, the more the reader must make inferences to derive the macrostructure, the longer the reading will take, and the less complete the recall. So, in terms of both reading time and recall, inferences make a text harder to read. Students in advanced composition classes where peer review is used can read one another's papers seeking the ideas which are implied by the writer but not stated explicitly. Asking for such an analysis makes paper exchange more profitable, and is yet another way in which propositional analysis can contribute to writing improvement without a great deal of technical knowledge on the part of student or teacher.

Two other factors "within the reader" appear to contribute to the difficulty of the text. First, if readers cannot construct a coherent text base through explicit and implicit propositions, they resort to searches of long-term memory to try to find propositions which will provide coherence. This point about long term memory searches in part of a model constructed by Kintsch and Teun van Dijk²⁷ to explain both reading comprehension and production of text in written forms. From their research, Kintsch and van Dijk suggest that when the text does not provide adequate information for coherent comprehension, readers try to make sense of the text by using what they already know about the topic. In this way, readers check their long term memory, or what they have stored from previous information received on this subject, to add propositions to the text under study in order to have it make sense. This prior knowledge or background may result from real world experience, pictures, other reading, lectures, or other vicarious sources. The more readers know about the topic of the text, and the more accessible the information is, the easier the reading. Searches of long term memory add to reading time, and so contribute to difficulty.

A second contribution the reader makes in comprehension involves the overall organization of the text base. Readers construct the list of propositions which represent the text's meaning in the comprehension process, using the schema or blank outline, and the hierarchical ordering of sub- and superordinate propositions. As the reading proceeds, readers often need to reorganize the propositional list several times, as the schema is filled in, and as the overall sense of the text becomes clear. Each reorganization of this text base adds to reading time, and so, like drawing inferences and searching long term memory, contributes to difficulty.

In teaching writing, these facts reveal two important points

which can be discussed easily with students. First, writers help their readers follow their meaning if they provide a clear schema and if they can help readers bring to mind whatever knowledge of the subject they may already possess. For this reason, comparison of an unfamiliar concept to one that readers are likely to know can be helpful. Signals about the kind of information being presented help the reader establish or revise a schema at various points in the text, and should contribute to both speedier reading time and to better retention. Reviewing points already covered in a long essay can also help readers, and seems from Kintsch's research to be an aid to readability of text. All of these features can be taught to student writers, and are particularly well-suited to advanced writing courses and to classroom exercises, revision exercises and to classes using word processing.

These suggestions about classroom techniques are only springboards to incorporating our knowledge of text processing in the teaching of writing. Kintsch's theory of propositional analysis, complex as it may seem with its propositions and arguments, its schemata and density, is a theory with much to offer to the teacher of writing. Although the mechanics of conducting a propositional analysis are complex, and probably not especially helpful to composition teachers, the research based on the theory sheds much light on what makes good writing good. Good writing involves the presentation of propositions that are not too dense, in a schema that is familiar or explained carefully, requiring not much inference on the part of the reader, and in a pattern that is coherent from beginning to end. Having these criteria for good writing should make possible more agreement among writing teachers about what makes good writing good, and more success in teaching those elements to students.²⁸

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Notes

¹See, for instance, the collection of articles published in *College Composition and Communication*, December, 1983.

²Walter Kintsch. *The Representation of Meaning in Memory* (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1974), p. 13.

³Kintsch, 1974, p. 14.

⁴Althea Turner and Edith Greene, *The Construction and Use of a Propositional Text Base* (Boulder, Colorado: Institute for the Study of Intellectual Behavior, University of Colorado, 1977).

⁵Kintsch, 1974, p. 13.

⁶Walter Kintsch and Janice Keenan, "Reading Rate and Retention as a Function of the Number of Propositions in the Base Structure of Sentences," *Cognitive Psychology*, 5 (1973), p. 260.

⁷Kintsch and Keenan, 1973, p. 259. The propositional analysis of the sentence is theirs.

⁸Kintsch, 1974, p. 16.

⁹Kintsch, 1974, p. 17-21.

¹⁰I have altered the macrostructure to make it more clear to the reader. Kintsch uses numbers, referring to his text base.

¹¹Walter Kintsch and Janice Keenan, "Memory for Information Inferred During Reading," in *The Representation of Meaning in Memory*, ed. Walter Kintsch (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1974), p. 137-139.

¹²Walter Kintsch and Teun A. van Dijk "Toward a Model of Text Comprehension and Production," *Psychological Review*, 85 (1978), 363-394.

¹³See, for instance, Frank Smith, *Understanding Reading*, 2nd ed. (New York: Holt, Rinehart and Winston, 1978).

¹⁴Walter Kintsch and Doug Vipond, "Reading Comprehension and Readability in Educational Practice and Psychological Theory," in *Perspectives on Memory Research*, ed. L. G. Nilsson (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1979), p. 329 -366. (Reference to p. 43 of manuscript version.)

¹⁵Walter Kintsch, "Comprehension and Memory of Text," in *Handbook of Learning and Cognitive Processes*, ed. W. K. Estes (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1978), VI, 78.

¹⁶Kintsch, 1978, p. 57-86.

¹⁷*Random House Dictionary of the English Language*, unabridged ed. (New York: Random House, 1966), p. 410.

¹⁸Kintsch and Vipond, 1979.

¹⁹George Klare, "Assessing Readability," *Reading Research Quarterly*, 10, No. 1 (1974-1975), pp. 62-102.

²⁰Yetta Goodman and Carolyn Burke, *Reading Miscue Inventory* (New York: Macmillan, 1972).

²¹Kintsch and Keenan, 1973.

²²Walter Kintsch, "Reading Comprehension as a Function of Text Structure," in *Toward a Psychology of Reading*, ed. A. Reber and D. L. Scarborough (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1977), pp. 227-256.

²³Kintsch and van Dijk, 1978, p. 367.

²⁴Kintsch and van Dijk, 1978.

²⁵Kintsch, 1977, p. 254.

²⁶Kintsch, 1978, p. 71.

²⁷Kintsch and van Dijk, 1978.

²⁸The author gratefully acknowledges the assistance of Professor Marilyn Sternglass of Indiana University in the reading of an earlier draft of this essay. Errors and omissions remain mine alone.