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Focus in the structure of concepts in analytic discourse

Julia Carlson Merrill

FOCUS IN THE STRUCTURE OF CONCEPTS

IN ANALYTIC DISCOURSE

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A Thesis

Presented to the

Faculty of

California State University,

San Bernardino

_____

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

English Composition

_____

by

Julia Carlson Merrill

June 2007

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ABSTRACT

Although limited research has been done on the global

structures of analytic discourse, propositional theory does

identify some key components. Among these are the

macropropositions that make up its macrostructure. The

macrostructure provides a skeletal framework within which

all the propositions of the discourse function to provide

semantic meaning. The smallest of the macropropositions

are topic sentences for paragraphs.

To find out what makes workable topic sentences

different from inadequate ones, I collected a group of

topic sentences written by my eighth grade students. The

difference that I discovered was that topic sentences

usually contain a phrase that categorizes the contents of

the paragraph. This phrase usually serves as the focus of

the text where it appears. Therefore, the important

constituents of a topic sentence are (1) the topic, (2) a

focus category phrase, and (3) a verb to connect the two.

These three constituents appear in all macropropositions,

as the only difference among them is the amount of text

they cover.

Therefore in this thesis, I explore the ways focus

category phrases are used in macropropositions to form the

macrostructure of analytic discourse. The macrostructure
of an analytic discourse usually embodies the hierarchical
structure of a concept that is built by synthesizing the
abstract traits of items of a topic that are categorized.
To sum up, focus category phrases in macropropositions form
the hierarchical macrostructure of a global concept in
analytic discourse. This global concept is often also
presented as the thesis of the discourse.

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CHAPTER ONE

STRUCTURES OF ANALYTIC DISCOURSE

Passengers on an ocean liner approaching a port often name which one it is by identifying some famous structure that appears on the horizon. New York City may be identified by the Empire State Building; San Francisco, by the Golden Gate Bridge; and Sydney, by its opera house. All of these structures were constructed by people who assembled materials to achieve a particular purpose.

In a similar manner, writers assemble words that describe people and objects in the real world and put them into discourse structures that communicate to others some particular idea or story. Even as the structure of a bridge and a skyscraper vary greatly, the structures of social scripts, short stories, and nonfiction articles vary considerably. Many nonfiction articles contain a hierarchical structure that reflects a main idea, or a thesis, that a writer is explaining. I gradually came to this understanding by analyzing various parts of discourse. All structures, whether they be buildings or bodies or essays, are made from smaller units. In almost all writing, except poetry, the paragraph is the basic small

unit used.

So what is a paragraph? Through time, people have answered this question in a variety of ways. One easy way to identify a paragraph is to look for a sentence that has been indented several spaces from the left margin of a page, a practice that goes back a few centuries.

According to a couple of fifth grade teachers, a paragraph should stick to one topic. They expressed frustration about their young students who still put unrelated material into their paragraphs. By the time these students reach eighth grade, their teachers complain, many of them cannot write a topic sentence for a paragraph. Does everyone need a topic sentence? By high school, when students are expected to write longer compositions, they are told to divide them into paragraphs. Since the only exact rule seems to be to start a new paragraph when the writer changes speakers in a dialogue, how do students decide when to start a new paragraph if they are not using dialogue?

To sum up generally, student writers are taught a few basic ideas about constructing expository paragraphs. A paragraph should stick to one topic. It should usually start with a topic sentence. A new paragraph should be

started when there is a change in time, space, or topic.

For decades, thousands of English textbooks and composition handbooks have been full of advice on topic sentences and ways to develop paragraphs. Another accepted method of teaching students to compose prose is to have them copy or imitate well-written paragraphs. Much of the instruction in English classes, during this time, seems to have been based on casual observations of well-written works and on finding out by practice what worked and what did not. Yet, unknown to most, behind much of the advice of teachers was sound analytic research of published texts.

This research, based on an early practice of analyzing texts to understand how prose was constructed, was done by Alexander Bain in Scotland. His book *English Composition and Rhetoric* was published for use by his students in 1866. This work was so influential, Bain is sometimes referred to as the architect of the modern paragraph. Revised and enlarged editions of his books sold widely for the next 20 years in the United States as well as in Scotland and England.

Although Bain expresses some of his observations about paragraphs in terms no longer generally used, the conclusions he reaches are still accurate and applicable to

the composition of discourse. Bain advocates that a paragraph stick to its topic: "Unity in a Paragraph [sic] implies a sustained purpose, and forbids digressions and irrelevant matter" (112). What was later called the topic sentence, Bain calls an "indication of theme. The opening sentence, unless obviously preparatory, is expected to indicate the scope of a Paragraph" [sic] (108). He also identifies the use of what linguists now call "cohesive devices" in the section "Explicit Reference." The bearing of each sentence of a Paragraph [sic] on the sentences preceding needs to be explicit" (94). Bain, refers to these statements as "paragraph laws." He bases them upon extensive analyses of published materials, giving many examples from them to support his laws.

Two other researchers who influenced the teaching of paragraph writing by analyzing texts were Francis Christensen and Richard Braddock. In 1965, in "A Generative Rhetoric of the Paragraph," Christensen explored how paragraphs are developed from topic sentences. In 1974, Braddock explored how widely topic sentences are used in 25 essays that he analyzes.

I became interested in the research of these three men

because one of those eighth-grade teachers I referred to earlier was frustrated. No matter what approach she took, by the end of the year, only 40% of the students could write adequate topic sentences for paragraphs. The 40% is not a guess; the teacher had kept actual records for three years.

To improve my teaching, I was taking graduate classes at California State University, San Bernardino, working toward a master's degree in English Composition. Therefore, for a class called "Problems in Writing," I chose as a project how to help more students write adequate topic sentences.

About the same time, I read several articles in *College Composition and Communication* on cohesion and cohesive devices in discourse. When several of these articles referred to *Cohesion in English* by Michael Halliday and Ruqaiya Hasan, I found their book at the University of California at Riverside and took extensive notes about their findings. Most of this research that analyzed texts was limited to a few adjacent sentences, but I was curious as to whether these findings could be applied to paragraphs and longer blocs of discourse. Consequently, I extended my research to find out the answer. With this

knowledge about the structure of paragraphs and cohesive devices among sentences, I eventually made three related discoveries.

First, by analyzing the topic sentences of paragraphs written by eighth-grade students in my classes, I discovered that they contain "focus category phrases." Usually appearing after the subject of a topic sentence for a paragraph, a focus category phrase names a category that covers the new information to be explained in the rest of the paragraph. This is what distinguishes most topic sentences from other kinds of sentences.

The second discovery occurred when I observed that the focus category phrases found in all the macropropositions of an analytic discourse form its hierarchical organization. I had planned to learn to what extent writers used focus category phrases in the topic sentences of paragraphs. However, when I identified all the focus category phrases in the articles of my research study, I realized that I had listed all the macropropositions of each one.

A macroproposition is a generalization about the information to be discussed in successive sentences. Therefore, topic sentences are also macropropositions, but

the term is applied additionally to sentences that perform a similar function for longer blocs of writing. When the macroproposition applies to an entire analytic discourse, it may be referred to as its thesis. In examining all the macropropositions that I had identified in the sample texts that I was analyzing, I observed that they were all formed in a similar manner and had a similar, although not an identical, construction.

I made the third related discovery when I asked, "Why are hierarchical organizations used in all the sample articles of my research study?" I discovered that the hierarchical structure in an analytic discourse usually reflects the formation of the global concept being explained in it. Linguists apply the term "global" when they refer to the entire contents of a discourse (Tomlin et al 90). My use of the term *global concept* is just an extension of this use. The global concept is then put in a macroproposition that becomes the global theme of an analytic discourse. Sometimes the theme is also its thesis.

The relationships among these three discoveries leads to the thesis of this research study: Focus category phrases in macropropositions form the hierarchical

structure of a global concept in analytic discourse. This
thesis is built partly upon observations that Linda Flower
and her associates made about the relationship between
concepts and the hierarchical structures that underlie
analytic discourse:

> Writers structure their knowledge in minor ways
> all the time at the bottom of the hierarchy when
> they make transitions or see that two ideas are
> parallel or in opposition to each other. They
> restructure a large body of information when they
> draw inferences that create a sense of gist.
> When invention occurs at that level, the whole
> structure of a body of ideas may be involved.
> Some of the most extensive and most cognitive
> complex transformations come, as I would predict,
> when writers are attempting to forge a unique
> synthesizing concept ("Task" 65).

Since hierarchical structures in analytic discourse explain
concepts, a closer examination of how the two are
intertwined is warranted.

With all of the foregoing information in mind, I
report the rest of the results of my research study in the
usual format. Therefore in the rest of this chapter, I

summarize the results of prior research that is relevant to

my research study. In chapter two, I discuss the methods I

use, and I explain more fully how I made the three related

discoveries that form the basis of this report.

In the last portion of my report, I discuss the

findings that I made about the use of focus category

phrases in the macropropositions of analytic discourse that

has been published. Altogether, I found that they may be

used in seven places:

1. In a global theme, or thesis for a discourse

2. In subthemes of a discourse's topic

3. In major topic sentences for chunks of

   discourse

4. In topic sentences for divided-paragraph blocs

5. In topic sentences for paragraphs

6. In subtopic sentences of paragraphs

7. In concluding sentences

Therefore, in chapter three, I give more details about

focus category phrases in topic sentences and illustrate

the ways that they are used by professional writers in the

sample articles of my study.

In chapter four, I examine how writers use other kinds

of macropropositions, and I analyze how the hierarchical structure formed by the focus category phrases contribute to the global cohesion of an analytic discourse. In addition, I show how the hierarchical structure of an analytic discourse is related to its topical structure. Finally, I end with a summary of my research findings and make some observations of how teachers might use these findings to help students identify focus category phrases for the subject they are writing about and how to insert them into topic sentences and other macropropositions as they write an analytic discourse.

Analysis of Discourse Structures

The pieces lie scattered across the living room rug. Six-year-old Junior has successfully taken his first bicycle apart, but can he put it back together? To do so, he has to use his memory of what a bicycle looks like. He also has to see not only the place where each part belongs, but also must know how to firmly attach it to the frame. Basically, this is what those who analyze the structure of analytic discourse do. Because much of the underlying structure is unseen by the casual reader, the researchers analyze and explain what parts a discourse has and how they

are organized. With this knowledge, the writers may do a better job of structuring their own discourse.

Earlier, I briefly presented three discoveries about focus category phrases which appear in macropropositions and form the hierarchical structures of concepts that appear in discourse. In making these discoveries, I was guided by the results of researchers from three different disciplines. Among these were professors of composition who analyze topic sentences and paragraphs. Research by linguists that I found applicable to my studies had to do with cohesive devices, topical structure, and propositional theory. Work by cognitive scientists sheds light on how people's memories utilize information structures, including hierarchies. These are reflected in some kinds of discourse, especially exposition.

Since the simplest building block used to structure analytic discourse is the paragraph, I shall start my review of related research by looking at the relevant history and discourse analyses of these basic units. Historically, says Virgina Burke in *The Paragraph in Context,* the threads of three different views of the paragraph may be traced through the centuries. The first view was to use a paragraph mark as a sign of emphasis.

The second view was a mechanical one whose main purpose was to give a visual form to a piece of prose by indenting the first line. A third view saw the paragraph as "a unit of thought with a unified organized structure" (5).

In spite of the differences among these views, *Webster's Ninth Collegiate Dictionary* gives an inclusive definition: A <u>paragraph</u> is "a subdivision of a written composition that consists of one or more sentences, deals with one point or gives the words of one speaker, and begins on a new, usually indented line" (853). Obviously, the views of the paragraph as a visual and/or structural unit still prevail, sometimes within the same piece of writing. In analytic writing, though, the idea of the structural paragraph dominates.

The Structural Paragraph

Since the structural paragraph dominates in analytic discourse, how is it different from other kinds of paragraphs? Certain traits distinguish it. It usually starts with a topic sentence at or near the beginning of the paragraph. The rest of the information stays within the parameters set by it but expands upon its main idea by giving as much specific information as is needed for a clear explanation of the topic introduced. Furthermore,

the series of sentences in the paragraph form a
hierarchical structure. The work of three researchers of
topic sentences and paragraphs is relevant to the findings
of the research upon which I am reporting.

Bain's Paragraph Laws. Alexander Bain, considered the
main architect of the modern paragraph, analyzes the prose
of the nineteenth century writers to formulate his laws of
paragraph construction. Andrea Lunsford describes his
method of research:

> Bain's intensive reading of prose, in particular
> the contemporary essayists, coupled with his
> intensely analytic turn of mind and the fact that
> he was working hard to prepare a practical and
> efficient course on rhetoric, caused him to
> "discover" his principles empirically. Bain
> approached any subject by searching for first
> principles and definition. In a later work he
> says, "The most obvious way to arrive at the
> definition of a general name is to survey the
> individual things denoted by the name; to compare
> them to one another, and to find out the points
> wherein they agree, (Bain in *On Teaching English*
> p. 207) (296).

In fact, Bain's careful analysis of published works could well be why his paragraph laws were generally accepted.

Bain's textbook was widely used for several decades and had a lasting effect on the teaching of paragraph writing in the United States as well as in Great Britain. Bain's first discussion of the paragraph rules appears in his 1866 edition of *English Composition and Rhetoric*. The information given here is from the enlarged edition of 1888.

Of particular importance are Bain's ideas about the paragraph. His definition reads, "The division of discourse next above the sentence is the <u>paragraph</u>. It is a collection, or series, of sentences with unity of purpose" (91). Bain lists seven "laws" of paragraph development that contribute to the unity of structural paragraphs. What he called an "Indication of Theme," now usually referred to as a "topic sentence," had the most influence on the teaching of composition. However, his other laws show how all the sentences in a well-constructed paragraph are related.

According to Bain, a key element in the unity of paragraphs is at or near the beginning. He titles the section about it, "Indication of Theme," and writes, "The opening sentence, unless obviously preparatory, is expected

to indicate the scope of the paragraph." He also refers to it as "a general statement" (109-110). Bain analyzes Macaulay's introduction to *A History of England* to illustrate how general opening statements function:

> Of the second paragraph, the first sentence runs thus: "Nor will it be less my duty faithfully to record disasters mingled with triumphs, and great national crimes and follies far more humiliating than any disaster." This sentence is the introduction to a paragraph that broadly sketches these disasters and crimes, and is therefore a very fitting indication of theme.
>
> So, also, in the next case: "Yet, unless I greatly deceive myself, the general effect of this chequered narrative will be to excite thankfulness in all religious minds, and hope in the breasts of all patriots." The paragraph thus introduced enforces the idea that the nation has made great progress on the whole (110).

Although Bain sometimes cites individual paragraphs, taken from a piece of writing, he also gives, as examples, whole texts. Besides the introduction to Macaulay's history in

the section on the paragraph, he analyzes all of Help's essay "Friends in Council."

In his other paragraph laws, Bain observed typical features of structural paragraphs that have since been modified by other researchers who have analyzed texts. For example, for his law of "Explicit Reference," Bain states: "The bearing of each sentence of a Paragraph [sic] on the sentences preceding needs to be explicit" (94). He explains 17 ways to be explicit and gives examples from essays showing how the relationships between sentences are indicated. A common way is by the use of specific words, now generally referred to as "transitions." Another method of explicit reference, says Bain, "may be made by repeating either literally or in substance, the matter referred to" (100). Yet, he also observes: "In cumulative statements, the omission of conjunctions prevails extensively", as the relationships between them are clearly implied (98).

Furthermore, Bain explores co-ordinate and subordinate relationships among the sentences that develop paragraphs. His law of "Parallel Construction" states that when sentences "illustrate the same idea they should be formed alike" (105). And in his law of "Consecutive Arrangement," Bain states: "The nature of the subject and the style of

composition usually dictates a plan in the bringing forward of successive particulars" (115). The particulars are usually on progressively lower levels of abstraction than the general information in the topic sentence.

Bain makes careful observations about the structural paragraph that opens with a theme, what is now often called a topic sentence. He says that it occurs mostly in expository writing, although occasionally he notices a paragraph here and there in narrative or descriptive writing that starts with a topic sentence. He also notes that a general statement does not start all expository paragraphs.

The Topic Sentence. The use of the term "topic sentence" to name the general opening statement of the structural paragraph gained acceptance gradually. In his article, "The Topic Sentence Revisited," Frank J. D'Angelo traces how this happened. John McElroy in *The Structure of English Prose* was the first to use the term in 1885. Yet the term "topic sentence" did not seem to come into general use until 1902 when Sara E. H. Lockwood and Mary Alice Emerson emphasized it in their textbook, *Composition and Rhetoric* (432-33).

Up until the early 1900s, the rules of the structural

paragraph with its topic sentence were analyzed and refined

by several rhetoricians. Here I will mention three of the

more prominent ones. Barrett Wendell, of Harvard, evidently

combined Bain's rules of explicit reference and consecutive

arrangement to get his rule of coherence.

At the end of the nineteenth century, Fred Newton

Scott was the most influential scholar of applied rhetoric,

composition, and the teaching of English. He worked at the

University of Michigan and along with Joseph V. Denny of

Ohio State, published *Paragraph-Writing*. One of the more

important laws added by them was the law of selection which

states that "only those points be chosen for mention in the

sentence which will best subserve the purpose of the

paragraph" (qtd. in Burke 23). Today it is generally

accepted that paragraphs have unity and coherence. In the

last several decades, some linguists have analyzed

discourse and discovered more precisely how this is

achieved. I will discuss their work later as it applies

across paragraph lines.

With the influx of more students into the nation's

high schools and colleges in the early 1900s, the attention

of scholars turned to how to teach them English

composition. No additional substantive research was done on either the structural paragraph or topic sentence for over 50 years.

Christensen's Generative Paragraph. The second major contributor to increase knowledge about structural paragraphs by using discourse analysis was Francis Christensen in 1965. In his article, "A Generative Rhetoric of the Paragraph," he uses selected examples from "discursive" writing to explore the development of paragraphs by showing their hierarchical structure. Christensen defines a paragraph "as a sequence of structurally related sentences" (21).

Christensen relates that his idea for a generative rhetoric came from John Erskine who in his essay, "The Craft of Writing," states, "When you write, you make a point, not by subtracting as though you sharpened a pencil, but by adding" (1). In this article, Christensen explains that the "four principles" of generation he proposed for cumulative sentences may also be applied to paragraphs. The topic sentence serves as the base to which modifiers, clusters, relative and subordinate clauses may be added. Thus the first principle of (1) "addition" is satisfied. As each supporting sentence is added, "both the writer and

the reader must see the (2)<u>direction of modification or</u>
<u>direction of movement</u>". Sentences added to developing the
top*ic* "are usually at a lower (3) <u>level of generality.</u>"
Finally, "the more sentences the writer adds, the (4)
<u>denser</u> the texture" (21).

Christensen identified three paragraph patterns that
result from using a generative rhetoric: (1) The process of
making a general statement progressively more specific in
each succeeding sentence results in a "subordinate sequence
paragraph" (23); (2) a "co-ordinate sequence paragraph"
occurs when the sentences supporting the topic sentence are
parallel to one another (22); and (3) a "mixed sequence
paragraph" occurs when a series of subordinate sentences is
interrupted or by sentences that are co-ordinate to one
another (25). By using examples, Christensen illustrates
how his generative process produces a wide variety of
paragraph formats.

Christensen devised a format to illustrate how
successive sentences in most structural paragraphs move to
lower levels of generality. He placed the top [topic]
sentence of a paragraph against the left margin of a text
and numbered it one. To show that the next sentence was
lower and subordinate to the first, he indented two spaces

from the left before starting the sentence and numbered it

two. If the third sentence was subordinate to the second,

it was indented another two spaces and numbered three.

However, if it was co-ordinate to the previous sentence, he

indented it the same amount and kept the same number. By

using this method, Christensen shows how the development of

most paragraphs move down the ladder of abstraction. In

the following example, Christensen applies this scheme to a

paragraph with a mixed sequence of both subordinate and co-

ordinate sentences:

1 This brings me to the third failing of eighteenth

century science, which I find most interesting.

2 A science which orders its thoughts too early is

stifled.

3 For example, the idea of the Epicureans about

atoms 2000 years ago was quite reasonable; but

they did only harm to physics which could not

measure temperature and pressure and learn the

simpler laws which relate them.

3 Or again, the hope of the medieval alchemists

that the elements might be changed was not as

fanciful as we once thought.

4 But it was merely damaging to a chemistry

which did not yet understand the composition

of water and common salt.

J. Bronowski, *The Common Sense of Science,* p. 47

(quoted in Christensen 31)

By this method, Christensen clearly shows the hierarchical nature of the structural paragraph although he never referred to it as a hierarchy.

In his article, Christensen states that he did not attempt to analyze all the consecutive paragraphs of a discourse. He thought some paragraphs might be structured differently to achieve a particular purpose, such as making an introduction. Christensen confined his analysis to selected structural paragraphs.

In addition, Christensen makes some general observations about the uses of topic sentences in paragraphs. First, they usually appear as the first sentence of the paragraph. The common exceptions he cites are when a topic sentence is preceded by sentences of introduction or transition. Most of the time, though, he observes, a transition is embedded in the topic sentence. Another exception is when the topic sentence is at the end

of the preceding paragraph. He also found that some paragraphs do not have topic sentences.

In advancing his ideas of generative rhetoric to produce certain kinds of sentences and paragraphs, Christensen was one of the first researchers to comment on part of the process of writing composition. Other researchers respond to his idea by acknowledging that it has some merit but say it is not broad enough to encompass all composition. However, in the mid 1960s when Christensen introduced the idea of a generative rhetoric, other researchers were just beginning to investigate the processes of writing instead of just analyzing texts, the products of the process.

This scientific approach to composition also called into question common advice in some English handbooks that were given to students. In particular was the advice that all paragraphs should start with a topic sentence. Keen observers of professional discourses note that this advice is probably faulty, so one of them, Braddock, decides to research to what extent the advice about the use of topic sentences to start paragraphs was valid.

Braddock's Topic Sentence. The next researcher to use discourse analysis to learn about the topic sentences of

paragraphs is Richard Braddock. His article, "The Frequency and Placement of Topic Sentences" appeared in 1974. He decides to do research on some of the claims being made about the importance of topic sentences because he feels that they might not be true. In particular, he questions statements found in many textbooks which say that most paragraphs have a topic sentence at or near the beginning. Therefore, he asks two questions and seeks the answers to them.

1. What portion of the paragraphs contain topic sentences?

2. Where in the paragraphs do topic sentences appear (311)?

Before he starts analyzing 25 essays randomly selected for his research, Braddock has to make some decisions on how to proceed.

A crucial decision Braddock makes is what definition to use for the term "topic sentence." In starting his research, Braddock states that when he looked for a definition to use, he ran into a variety of ideas and some confusion about what a topic sentence is. Furthermore, he states that when he looked at each paragraph in the essays he was analyzing, he sometimes had trouble picking out

which sentence was the topic sentence of the paragraph. Therefore, he states, "It seemed to me that the test of a topic sentence is the test a careful reader might make, the test offered when one constructs a sentence outline of the major points of an essay" (314). Apparently, Braddock is thinking of a topic sentence as containing the "main thought" or "central idea" of a paragraph.

To find out if a paragraph had a topic sentence, Braddock writes a sentence outline of each article that forms that basis of his research. As much as possible, he uses the words of the writers. Then he looks to see which sentences, or parts of sentences, correspond with his sentence summaries of the various paragraphs.

From these sentence summaries, Braddock decides he has identified four different types of topic sentences:

1. A "simple topic sentence" is "one which is quoted entirely or almost entirely from one T-unit [clause] in the passage" (315).

2. A "delayed-completion topic sentence" begins in one T-unit [clause or sentence] but is completed in another one (315).

3. An "assembled topic sentence" is put together by
   assembling quotations from throughout a paragraph
   (316).

4. Lastly, a topic sentence might be inferred (317).
To answer his research questions, Braddock tallies the
number of topic sentences that he finds in the 25 essays he
analyzes.

At the end of his research report, Braddock answers
the two questions about topic sentences that he poses. In
answer to the question of what proportion of paragraphs
have topic sentences, he reports, "Even when simple and
delayed completion topic sentences are combined into the
category 'explicit topic sentences' — a broader concept
than many textbook writers had in mind — the frequency
reaches only 55% of all the entries in the outlines" (320).
In answer to his question about the placement of topic
sentences in paragraphs, Braddock estimates, "...only 13
per cent of the expository paragraphs of contemporary
professional writers begin with a topic sentences, and that
only three per cent end with a topic sentence" (321). In
addition, he makes a few general observations about the
uses of topic sentences in longer chunks of discourse.

Summary of Research on Structural Paragraphs. A useful
way to summarize the research of Bain, Christensen, and
Braddock is to compare and contrast their conclusions about
structural paragraphs. Since Braddock's idea of a topic
sentence is different from Bain's and Christensen's, he
probably found fewer topic sentences than they would have.
Since Bain's and Christensen's purpose was to show how
paragraphs are developed from topic sentences, they both
choose as a topic sentence, one at or near the beginning of
a paragraph. Christensen also use selected paragraphs and
passages in discussing the structure of paragraphs instead
of considering all the paragraphs in a discourse.

All three researchers base their research primarily on
what is generally referred to as expository writing. In
this type of discourse, the structural paragraph, as a
single unit of thought, is usually concurrent with the
visual paragraph. All three researchers use structural
paragraphs as their examples. Christensen writes: "Is the
paragraph a logical entity, a sequence of structurally
related sentences, or is it a visual unit, with the first
line indented and the last line left incomplete? Clearly it
is both and the two jostle" (32). Christensen goes on to
conclude that paragraphing the structural paragraph as a

single unit seems logical. However, the researchers who analyze the topic sentences of expository discourse observe paragraphs were not always divided this way.

Blocs of Paragraphs

One rather new observation that the researchers of paragraphs make is that some topic sentences serve semantic, structural units that are two or more paragraphs in length. Since very few paragraphs exist in isolation, the question becomes - How do topic sentences affect several paragraphs? Although the researchers who specifically identified topic sentences for paragraphs make that their primary focus, they did make a few observations about how topic sentences relate to blocs of paragraphs.

According to the researchers, topic sentences may impact several paragraphs at a time in two different situations. One is that two or more successive paragraphs are sometimes developed from a single topic sentence appearing in the first one. Bain "notes, for instance, several occasions in which a series of paragraphs all relate to only one thematic unit or topic sentence" (Lunsford 297). Braddock also notes that sometimes several paragraphs were developed from one topic sentence (318). Additionally, he notes a particular combination of two

paragraphs: "Or sometimes a thesis is stated in a one-sentence paragraph and the following paragraphs explain the thesis without restating it" (314). In other instances where several paragraphs function as a unit, more than one topic sentence appears in a passage. In some examples, the first primary topic sentence provides a way to connect two or more paragraphs; the second one serves the immediate paragraph.

Researchers have observed three methods writers use to connect paragraphs. One method is to use a "major" topic sentence as a roof to encompass a group of paragraphs. All three researchers make brief references to this type of topic sentence. Christensen refers to runs of "four or five paragraphs totaling 500-600 words...with the paragraph divisions coming logically at the subtopic sentences" (31). In writing sentence outlines of topic sentences for the paragraphs of the discourses on which Braddock bases his research, he routinely finds these (in 23 of the 25 essays). "I was also keeping an eye out for what we might call "major topic sentences" of larger stadia of discourses. That is, a series of topic sentences all added up to a major topic sentence" (317). On a chart he shows that he found 117 major topic sentences along with 533

topic sentences (319). In addition, Bain recognizes that thesis statements function as topic sentences for entire discourses. He writes, "...the opening paragraph announces the theme of the whole composition" (110).

A second method for joining paragraphs, observed by the researchers of topic sentences and paragraphs, is the use of a transition referring to previous information. It may be embedded in the first part of a topic sentence as Bain and Christensen observe:

> The first part of the sentence may often be fittingly occupied with matter intended to indicate the connection with the preceding paragraph. (Bain 109).

> Transitions from paragraph to paragraph are ordinarily embedded in the topic sentence, a single word or a phrase, a subordinate clause, or the first part of a compound sentence (Christensen 30).

None of the researchers goes beyond simple observations, so to say anything more would be to impose my own ideas about "major topic sentences." Therefore, I will go on to another method used to join one paragraph to another. The third method of connecting paragraphs in a discourse is by

using a variety of cohesive ties that have been identified by linguists.

Features that Unify Texts

One frequent standard for paragraphs is that they have unity and coherence among the ideas of an analytic discourse. Coherence may be defined as how well the parts of a discourse stick together. As I have already shown, the hierarchical structure of a discourse helps hold a discourse together. Yet, without the nuts and bolts known as "structural ties", the parts of a discourse are not tightly fastened together. Some of these ties are known as different types of cohesive devices.

Structural Ties

The parts of a discourse must be both in proper relationship to each other and have cohesion. An understanding of how the various elements of a discourse are tied together is mainly the work of modern linguists. The means by which one part of a composition is joined to another is called a cohesive tie.

Furthermore, by crossing from one sentence to another, cohesive ties integrate the information they contain. The cohesive devices that perform this task might be compared

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to Lego blocks. Lego blocks became a viable building system
when the manufacturer put bumps on one side of a block and
matching concave dents on the other side, so when the bumps
of one block fit into the corresponding dents of the other
one, they become an interlocked unit. How is a similar
interlocking of sentences accomplished? In much the same
way, a piece from an idea in one sentence is repeated so
that it acts like a bump and fits into the concave dent - a
place made for it - in the succeeding sentence, thus
creating cohesion between the elements of a text.

Many of the cohesive devices are identified and
defined by Michael Halliday and Ruquiya Hasan in their book
Cohesion in English. They state that one of the
characteristics of a text is the semantic relation of
cohesion:

> Cohesion occurs where the INTERPRETATION of some
> element in the discourse is dependent on that of
> another. The one PRESUPPOSES the other, in the
> sense that it cannot be effectively decoded
> except by recourse to it. When this happens, a
> relation of cohesion is set up, and the two
> elements, the presupposing and the presupposed,

are thereby at least potentially integrated into a text (4).

Halliday and Hasan call "one occurrence of a pair of cohesively related items" a tie.

Lexical Reiteration. According to Halliday and Hasan, the primary means of achieving cohesion is with "lexical reiteration", by which one item refers back to another one. Since most of the discussion of their scheme of cohesion illustrates the uses of reiteration from conversational and literary discourse, Sandra Stotsky later modified the system to make it fit better with expository passages. She calls lexically related items "semantically related words" and goes on to say that they form "a type of cohesion in which one lexical element is systemically related to a previous one" (440). There are five ways this might be done:

1. Repetition

2. Synonymy or near-synonymy

3. Opposition or contrast

4. Inclusion as a coordinate, superordinate, subordinate, member in an ordered or unordered set (general or specific)

5. Derivation or repetition of a derivational
   element (440).

She also gives examples showing how lexical reiteration may
be applied to expository or analytical paragraphs to help
achieve cohesion. The use of collocation in the same text
may increase the number of cohesive ties in it.

Cohesion by Collocation. In a similar manner, Stotsky
modified Halliday and Hasan's idea of cohesion by
collocation in texts. She states that "collocationally
related words" form a type of cohesion in which "words are
related to one another only through their association with
the topic of the text" (438). On the other hand, words used
frequently in a variety of settings do not constitute
cohesion by collocation. Stotsky concludes that lexical
cohesion "appears to depend more on the reader's knowledge
of word meanings than on his reading experience," while
collocation depends "more on his reading experience than on
a knowledge of the words' meanings" (439). Both kinds of
cohesion are partly dependent on a reader's ability to see
relationships as a text is processed.

Cohesion by Reference. A third kind of cohesion occurs
when a word refers back to a previous idea in the text.
This is usually a grammatical connection. Halliday and

Hasan sorted these into categories they named "reference,"
"substitution," and "ellipsis." A useful synopsis of these,
made by Dale Holloway, explains each one and gives examples
of words commonly used in this manner:

> Reference: These devices are divided into three
> types - personal (words like "I, you, she"),
> demonstrative (words like "this, these, those"),
> and comparative (words like "same, similar,
> better") (211).

Notice that words falling into this category are mostly
pronouns, although comparative words may also refer back to
some previous words or group of words. So do words that
substitute for another one.

> In substitution, certain words are used as direct
> substitutes for another (sometimes more precise)
> one, and repetition of the first term is avoided.
> There are nominal, verbal, and causal
> substitution words.

Instances of cohesion by substitution do not occur very
often.

In the last category, "ellipsis," a word is implied; a
cohesive tie is made when the reader mentally adds the
missing word.

Ellipsis can act structurally to imply a referent

from a previous sentence; for example:

Would you like to hear another verse?

I know more [_].

Ellipsis also occurs in nominal, verbal, and

causal forms (211).

Since these three categories refer back to something

previously said, as a group they may be thought of as

referential ties.

Cohesion with Transitions. The last type of cohesive

tie is made by transitions that provide a connection

between two parts of a text by indicating what kind of

semantic relationship exists. Several researchers have

discussed the role that transitions play in discourse.

Among them are Halliday and Hasan who give a comprehensive

listing of transitions, which they refer to as "conjunctive

relations." While it is comprehensive, it is also an easy

system to use. The simple list (Figure 1) I made from

their more complex chart serves my purposes.

ADDITIVE	however	with this in mind
	in fact	
alternatively	in any case	TEMOPORAL
and	instead	
and also	nevertheless	after that
and. . .nor	on the contrary	at first. . . in the
besides	on the other hand	end
by contrast	only rather	at last
by the way	whichever way it	at the same time
for instance	is	at this point
furthermore	yet	finally
in addition		first. . .next
in other words	CAUSAL	first. . .then
incidentally		from now on
likewise		here
more	arising out of this	in conclusion
on the other hand	as a result	just then
or	because	next
or else	consequently	previously
similarly	for	secondly
that is	for this purpose	then
thus	hence	up to now
	in consequence	
	in such an event	
ADVERSATIVE	in that case	SUMMARY
	it follows	
	on this basis	
actually	otherwise	briefly
and	so	in short
anyhow	that being so	to sum up
at any rate	then	to resume
at least	therefore	to return to the
at the same time	to this end	point
but despite this	under other	
	circumstances	

Figure 1. List of Transitions

Halliday and Hasan define a <u>conjunctive relation</u>, also known as a <u>transition</u>, as a semantic relation brought about by a word which specifies the relationship between two parts of a text. Notice the following example:

' He was very uncomfortable.

Nevertheless he fell asleep (227).

"Nevertheless" is the word showing the relation of adversity. The <u>relation</u> of adversity is the cohesive tie, not the word. The cohesive tie or conjunction lies solely in the semantic relation between the two elements of a text.

In their "Summary Table of Conjunctive Relations," Halliday and Hasan identify only four major categories: additive, adversative, causal, and temporal:

For the whole day he climbed up the steep mountainside, almost without stopping.

a. And in all this time he met no
   one. (additive)

b. Yet he was hardly aware of being tired.
   (adversative)

c. So by night time the valley was far
   below him. (causal)

d. Then, as dusk fell, he sat down to rest.

(temporal)

The words "and," "yet," "so," and "then" can be taken as typifying these four very general conjunctive relations, which they express in their simplest form (238-39).

In some instances when the relationship between two parts is obvious, the conjunctive transition is left out, making it implicit. Halliday and Hasan say they chose to put transitions into a few categories because they thought "a detailed systemization of all the possible subclasses would be more complex than is needed for the understanding and analysis of cohesion" (239). Furthermore, remembering all the subcategories would be a daunting task. Fortunately, a person does not have to know the exact relationship a transition shows to use it correctly. Therefore, a simple listing of all the examples Halliday and Hasan put in their four major categories makes a reference that is usable. The lists do not include all possible transitions, but they do show a variety of words and phrases used to form a cohesive tie by showing the relationships between two elements of a text.

Measurements of Cohesion. Halliday and Hasan go on to explain that mere identification of the types of cohesion

in a text gives a rather limited knowledge of how cohesive devices are used by writers to tie a text together. By adding measurements to the identification of the kinds of cohesion, Halliday and Hasan demonstrate that significant knowledge about the operation of cohesive ties in discourse could be gained. The additional measures they suggest are a count of how many cohesive ties a text contains and a notation of how these are spread throughout a discourse.

In looking at how cohesive ties are spread throughout a text, a measurement of the amount of space between two elements of a cohesive tie is taken. In a simple cohesive tie, the cohesive element and its presupposed one are practically adjoining, either in the same sentence or an adjacent one. Such ties are "immediate" ones. If the presupposed item is not in an adjacent one, but can be resolved by referring to a nearby prior sentence, it is called a "mediated" tie.

If the distance between the items is even further, the tie is called a "remote" tie. Sometimes a tie may be both mediated and remote. In other instances, "the presupposed item itself may be cohesive, presupposing another item that is still further back; in this way there may be a whole chain of presuppositions before the original target item is

reached" (330). The more distant ties, of course, cross over sentences and occasionally paragraphs.

Considerably more is known about how cohesive devices are used in discourse. Yet, the overview given here is sufficient to show how cohesive ties join the different parts of a text.

Information Structuring Discourse

One of the primary purposes of most analytic discourse is for writers to introduce new information about a major concept to readers. Besides demonstrating how writers tie the different parts of a discourse together, Halliday and Hasan begin to reveal how writers manage the conceptual, semantic flow of information through a text by referring to what was said earlier when they discussed cohesive ties. Since most discourses are written to introduce new meaning into a topic by revealing new information, it is helpful to writers to know how that is accomplished.

Given-New Information. Some of the earliest research about how information is placed in a discourse came from the Prague School of Linguistics in the late 1920s. Vilem Mathesius labeled "what the sentence was about" its theme. From there a speaker or writer proceeds with an "enunciation," adding new or unknown information about the

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topic. The theme is generally what is already known, or given, about a situation. Many of the concepts about given and new information were developed in the theory of Functional Sentence Perspective (FSP).

There are several different kinds of old information that may appear in a discourse. At first this shared knowledge, or given information, usually arises out of the context of the discourse. Many times given information may be based on "assumptions of shared background knowledge," some of which may be inferred. For example, if a supermarket is mentioned, it may be inferred that it has shelves (Yule 39, 13). In addition, William J. Kopple states, "References to things in the world that are unique and that are known to all those who have normal experience of the world — references to such things as the "sun" and "moon" or to processes such as birth and death — will be treated by readers as conveying given information" (1).

Later in a discourse, "given information" more likely refers to what the writer has already said. New information becomes old information when it is referred to as a text progresses. Then it is usually "conveyed in a weaker and more attenuated manner than new information" (Chafe qtd. in Kopple 2). Therefore, old information often

may be "represented anaporically by means of reference (pronominals and demonstratives), substitutes (words like *one* and *do*), and ellipsis" (Halliday qtd. in Kopple 2).

The given information about the topic is typically placed in the first part of the sentence. Frequently, it is put in the noun phrase (NP), although it may be put in some other part of the sentence. Since the given information is in the NP, the rest of the sentence is open to new information. Linguists have shown that the new information may appear in a variety of grammatical constructions. In many instances, the new information is where the writer wants readers to place their focus. Therefore, "new" and "focus" often refer to the same phrase of a sentence, while "given" and "topic" refer to the noun phrase (NP) that starts a sentence. The noun phrase also frequently identifies the topic of the sentence.

Topic. In context, linguists have identified certain aspects of considering a topic. In her book on "focus," Nomi Erteschik-Shir says that a definition of topic may be "derived from Reinhard (1981) who in turn draws from Strawson (1964:97). According to Strawson, the topic has three central properties:

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- The topic is what a statement is about.

- The topic is used to invoke 'knowledge in the possession of an audience.'

- The statement is assessed as putative information about its topic" (9).

In other words, the idea of "topic" carries with it information that is commonly accepted or supposed about it.

In this sense, the mention of a topic brings with it all the underlying facts and ideas that form the concept being named by the topic. For example, the topic of "transportation" is a big concept that carries with it a large complex of related categories developed from a multitude of items that somehow contribute to the movement of people and goods. Thus, when a writer names a topic, he brings to the conscious minds of the readers whatever they remember about it. The prefrontal cortex of the brain "appears to have a hierarchical organization ... maintaining progressively more integrated and abstract representations of relevant information" (Courtney 512). It is usually upon this common information, also known as "common ground" that new information is introduced.

Focus. Once the topic is introduced, the next step is for a writer to start giving new information. Because the writer tends to consider this information what is the most valuable or relevant, he asks readers to place their focus there. Focus, an action of the mind, comes from the "attention selective aspect of information processing" which allows some information to stand out at the expense of other information (Ochsner and Kesslyn 327). In conversation, the information being focused upon would be stressed by making it louder than the rest of the sentence. In written discourse, readers determine the focus of a sentence mainly by its semantic meaning and its syntactic position. "The topic of a sentence is excluded as a focus because it is by definition already in the hearer's attention" (Erteschik-Shir 12). Added information, therefore, is where the writer usually asks readers to place their focus.

Since the information in the focus position is usually new information in the discourse, the idea of topic and focus is similar to, and sometimes identical to, what would be considered given-new information. The given information relates to the topic, while the new information also

becomes the focus of the sentence. Typically, a sentence

contains only one main focus.

At the same time, "focus" places information into the

foreground, or top of the readers' minds, as older

information retreats into the background. In this respect,

Lappin and Erteschik-Shir conclude:

> ...all modes of perception are organized into
>
> foreground and background constituents. Focusing
>
> is viewed as a single task-specific mechanism
>
> which identifies the foregrounded constituent in
>
> representations of all modular systems. Focusing
>
> is therefore a nonmodular process which provides
>
> the interface between the modular system and
>
> central cognitive mechanisms (236).

Because topic and focus are both essential in presenting

information, Erteschik-Shir considers that a focus

construction includes both of them. To date, most research

on "focus" has been limited to an oral sentence or a small

cluster of related sentences. On the other hand, the

distribution of references to topic has been studied in the

formation of paragraphs.

Topical Structure. Similar in nature to cohesive

ties, but not identical to them, is the repetition of

references to the topic of a discourse throughout it. This approach of looking at the structure is known as thematization or topical structure. Mathesius, Firbes, and Dantes of the Prague School and M.A.K. Halliday in England, "have developed theories of sentence organization based on 'thematization' to deal with paragraphs and longer pieces of writing" because the meanings "transcend sentence boundaries" (Holloway 207). In writing about topic structure, Stephen Witte distinguishes between sentence topics and discourse topics because, even in the same passage, they are not necessarily the same (317). In discussing topical structure, many linguists tend to use the words "theme" and "topic" interchangeably. "Theme or topic as aboutness dominates current research" (Tomlin et al 85). The main way the topic is carried throughout a text is by referring to it by name frequently, although sometimes it may be referred to by pronouns or synonyms or a subpart of the topic.

References to the topic of an analytic discourse seem to continue through the portion of a text being studied. Stephen Witte illustrates three basic text patterns earlier identified by Danes of the Prague School of Linguistics in the late 1920s. In one pattern, "successive sentences

express the same theme or topic" (315). Holloway represents this pattern by using an "A" for the old information. Graphically, the pattern reads: "A-B. A-C. A-D. A-E." The letters "B," "C," "D," and "E" represent new information (209). In the second text pattern, the new information becomes the old information in a succeeding sentence. Graphically, this pattern reads: "A-B. B-C. C-D. D-E. E-F" (208). In the third pattern, the sentences are related to a "hypertheme" that is implied rather than stated.

The understanding of topic in paragraphs and blocs of paragraphs is based on the interaction of the discourse with the readers' prior knowledge of the subject. In his article on topical structure, Witte goes on to explain studies on how sentences work together. He refers to studies that were carried out by Lautamatti, Grimes, and Clements. Several ideas emerging from these are relevant to this report. First, successive sentences, regardless of their structure, are the vehicles by which information is distributed. Lautamatti identified three progressions of sentence topics in a text, although there are likely more. They are "parallel progression," "sequential progression," and an "extended parallel progression" which is a parallel

progression interrupted by a sequence of sentences. These progressions, though not identified by these terms, were also noted by Christensen as he gave examples of paragraphs developed by coordinate and subordinate sentences or by a combination of them.

Second, a description of the progression of an idea through a text may also become a description of the structure that is formed. "Quantitative approaches to information flow often treat the text as 'flat,' an unstructured series of clauses; but in fact texts are structured" (Cummings and Ono 115). Furthermore, Witte noted, the topics of sentences in these "progressions" develop a semantic hierarchy (315-19). Linguists have studied extensively these ideas of given-new information, topic and focus and how they operate in various types of discourse. Here, I have given only the information that I deem relevant to or helpful in understanding the research findings I am presenting.

Hierarchical Structures in Discourse

Although hierarchical organization in some kinds of discourse has been observed for decades, it has generally been by writers whose main focus was on some other aspect

of reading or writing. Comments from these sources seem to be based upon the assumption that the readers are familiar with such structures because they are so common. This is true in the sense that large portions of our world are organized accordingly. Every time shoppers go to the grocery store, they deal with items hierarchically arranged. When the shoppers get home, they probably store the items they bought according to some hierarchical plan they devised for themselves. At the store the hierarchy may be said to be static, but as people devise and tweak hierarchies of their own making, they become dynamic. In addition, writers may use them as a dynamic tool to help produce a discourse. First, I shall look at information concerning the structures of hierarchical organizations, then I shall show their dynamic nature, and I shall end with brief observations about the relationship of hierarchical information to cognitive thinking.

Hierarchical Organization

Hierarchical organization is a characteristic of analytic writing which divides a topic into parts and analyzes the relationships among them. Additionally, Flower states that analytic writings share two things: "They are designed with a reader in mind and they have an underlying

hierarchical organization that gives the reader (1) a top-level organization idea and (2) a logical presentation of the idea's subparts" (11-12). She also states, "The best way to think of a hierarchy is as a large system with a number of working parts" (10). She observes the relationships among these:

> In a hierarchy, the top-level idea is the most
> inclusive. All the other ideas are a response to
> it or a part of it like subsystems in a larger
> system. This does not mean they are less
> important (a subsystem of the body, such as the
> brain, can be crucial), but they are less
> inclusive. (*Problem-Solving* 88)

In later research, Flower refers to the top-level idea as a controlling idea that is the result of a plan that synthesizes a body of information from varied sources. She states that it includes "a clearly articulated 'synthesizing concept' ... [which] works as a controlling concept that governs the selection of information and the organization of the entire text" ("Task" 47). The top-level controlling idea that Flower names as an essential feature of analytic discourse is referred to by several different names.

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When they talk of the top-level idea of a discourse, many teachers of writing use the more common term of "thesis". The advice that Diana Hacker gives students in *A Writer's Reference* is typical: "For many types of writing, the central idea can be asserted in one sentence, a generalization preparing readers for the supporting details that will follow. Such a sentence, which often appears in the opening paragraph, is called a thesis" (9). This term has been in general use for decades.

Still another term for the top-level, inclusive idea of an analytic discourse, used by linguists, is "global theme". The idea of a global theme is an extension of clause level and paragraph level themes. The difference is that a global theme extends to all of a discourse. The term "is also related to the notion of what the overall discourse is about. In this case, the global theme has the form of a proposition (Jones, 1977; Keenan and Schieffelin, 1976; van Dijk, 1985). Although not as strong as the claims on local sentence level themes, there has been a recognition of the importance of global theme" (Tomlin et al 90). This discussion reflects the observation by linguists that all the subparts of a hierarchical organization for discourse also start with themes.

Linguists have also observed that although discourse is arranged in lines that are read sequentially, the information of many is based upon an underlying hierarchical organization. "Discourse is neither flat nor linear in its organization; it is hierarchical, with clauses forming higher order structures, paragraphs, which in turn combine to form larger episodes or sections of discourse" (Tomlin et al 66). Although the size varies, each unit is structured in the same way.

Furthermore, the hierarchical structures of analytic discourse exist and produce coherence on different levels. Global coherence carries a sense of what the overall discourse deals with. Episodic [or sectional] discourse relates to smaller units "which contribute to global coherence but which display an internal gist of their own." Local coherence refers to the sense "contribution of individual sentences" (Tomlin et at 66). Tomlin also remarks that discourse units longer than paragraphs have not been studied much.

Researchers have observed the hierarchical structure of the most common subunits, paragraphs. "Each paragraph within these sections is another subsystem — a functional working part of the whole" (Flower, *Problem-Solving* 10).

Anita Brostoff states, "A structured paragraph is a hierarchic system composed of an inclusive controlling thought pattern and subsidiary thought patterns" (288). She also observes that Christensen's method of writing paragraphs offers a visual picture of this structure as it shows the subordinate relationships among sentences. In other words, every unit in an analytic discourse is hierarchically organized.

Functions of Discourse Hierarchies. From observations about hierarchical structures in analytic discourse, it has become apparent that they serve several useful functions:

- They define global content.

  (van Dijk, 236)

- They create a focus.

  (Flower, *Problem-Solving* 137-38)

- They let you visualize the whole argument and see how all the parts fit together.

  (Flower, *Problem-Solving* 88)

- They are an important key to text coherence.

  (Graesser et al. 296; Tomlin et al. 62)

- They reflect a way people learn.

  (Smith 43)

- They can organize conceptual knowledge

  (van Dijk 234)

- They can generate concepts

  (Vygotsky 64)

These last two functions indicate that by building a

hierarchical structure with the information they have

gathered, writers may create new concepts about their

topic.

Medin and Heit also note eight distinct functions of

concepts: categorization, understanding, learning,

inference, explanation and reasoning, conceptual

combination, planning, and communication. Obviously,

hierarchical organizations, by reflecting concepts, serve a

variety of functions and purposes.

Using Hierarchical Structures in Writing. Some

observations by researchers about hierarchical organization

in discourse relate to its dynamic character. First of

all, the use of a hierarchical structure to organize

analytic discourse allows a writer to make logical

generalizations about groups of objects or ideas. The

global topic comes first. "From this global topic more

specific topics can be derived and be arranged in

hierarchical order" (van Dijk 284). Writers need to use "thought patterns such as classification, analogy, or comparison...[to] get at the internal relationships of an object or event, to see how the parts are related to the whole, to perceive a kind of logical hierarchy in things" (Brostoff 219). And in her book for student writers, Flower gives other examples of dynamic uses of forming a hierarchical organization for analytic discourse.

Flower does this by explaining how students may use the ways hierarchies are organized to help guide them throughout the writing process. She tells writers, "By defining a problem and a set of subissues or subproblems, you have created a hierarchical organization of ideas" (*Problem-Solving* 25). Furthermore she says, "Hierarchies...create focus by distinguishing major points from minor ones and they show how ideas are related to one another" (*Problem-Solving* 137-38). Constructing a hierarchical organization can help generate new ideas and concepts, help spot missing links, and signal when you must stop and look for relationships and create new unifying ideas. "Writers do this by working in two directions, from the bottom up and from the top down" (Flower *Problem-Solving* 88, 89, 92). After the discourse is written,

recreating its hierarchical organization may help the writer spot weaknesses that need to be addressed (Flower *Problem-Solving* 94-8). In other words, writers may use the construction of a hierarchical organization for their discourses as a useful tool to guide them throughout the process of writing analytic discourse.

In the same book, Flower illustrates how a graphic sketch may be made to show briefly the hierarchical organization of a discourse. She compares it to an upside down tree (*Problem-Solving* 88). In graphic form, the main topic of a discourse is written at the top, then the subtopics into which it has been divided are shown below it. If they have equal value, they are shown on the same plane. From the subtopics, more specific information may be shown on a lower level of abstraction. Because the amount and kind of information used is different from one discourse to another one, the items and lines in the hierarchical sketches vary accordingly. Her model is shown in Figure 2.

```
                    The Road Problem for the Country


              causes                        solutions


    conditions        limited      short-term   long-term   better
                      funds          plan         plan      public
                                                            relations
```
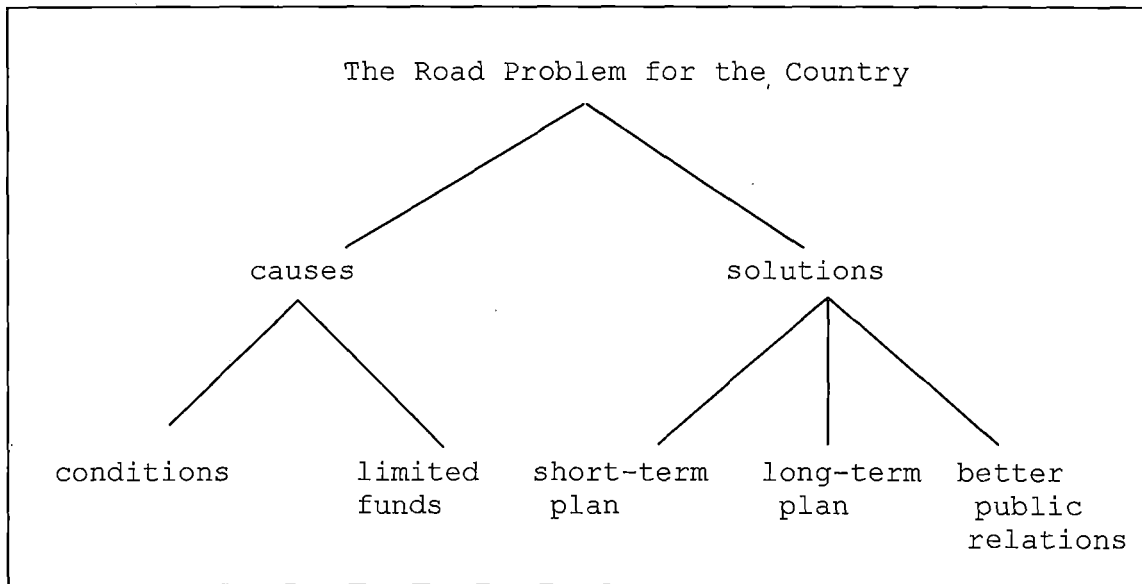
Figure 2.   Flower's Hierarchical Sketch

(Flower, Linda. *Problem-Solving Strategies for Writing*. New York: Harcourt Brace Jovanovich, 1981. 11).

Cognition of Using Hierarchical Organizations.   People are able to access and create hierarchical arrangements in every day life because they carry in their memories a prototype of how they look, how they are formed and how they are used.   Flower based her book for student writers partly on research about the composing process that she had done with John R. Hayes.   To gain new information they used a method called protocol analysis in which a writer is asked "to compose out loud near an unobtrusive tape recorder" ("Cognitive Process" 368).   By reading and

analyzing a number of such protocols, they were able to

gain a model of the cognitive processes writers use when

presenting information on a topic. One important

observation they made is that "the processes of writing are

hierarchically organized, with component processes embedded

within other components ("Cognitive Process" 375). As

Flower and her colleagues continued this type of research,

she enlarged upon her original findings.

Other cognitive researchers have discovered that

writers and readers are able to process hierarchical

information because they have developed schemata in their

memories that they call up into conscious memory when they

need to use them. Tuen A. van Dijk says that this is

possible because people have a superstructure stored in

their memories to guide these processes (127-28).

Furthermore, the brain stores schema organizations of

prototypical knowledge — the way properties and events are

organized (e.g. linearly and/or hierarchically) (van Dijk

233). Stephen Kucer adds additional comments about these

structures: "Schemata contain both global and local

information that is hierarchically arranged. The schema at

the highest level in the hierarchy represents knowledge in

its most global and abstract form. Those that are embedded

and lower in the structure contain information of a more specific nature" (Kucer 321). Researchers have learned in more exact detail how all this occurs, but the information is not needed for the purposes of this discussion.

Subunits: Categories or Concepts

Most subunits of a hierarchical organization are decided when writers divide the material they have gathered about a topic into categories. Some of these categories generate concepts about the topic, but they still function as categories. Throughout the rest of this discussion, the term category may refer to a simple category or to one that is a concept.

Categories act as the building blocks for the hierarchical organization of analytic discourse. They contribute to the meaning of a discourse as a writer searches for similarities and differences among the details of a topic. From these, categories of information may be placed in a hierarchical structure. They are arranged within it according to their levels of abstraction. This arrangement helps reveal the meanings that arise from the relationships among them.

Theories of Categorization. A primary method of organizing many diverse entities is to group them according

to observed similarities among some of them. This process, known as categorization, has been studied by many different researchers who have developed a variety of theories about categories.

Some categories of collected items may have very loose, one dimensional, and perhaps temporary, connections. Some categories may be based on one trait that connects them. Examples of such categories are items worn on the ears called earrings, and items worn on the feet referred to as socks. Other categories may express personal preferences: lists of "favorite books" or "my travel wardrobe." The latter is also an example of items collected together because some person or group often uses them together.

Other categories may have multiple, logical bonds and fit into a larger permanent hierarchical system. Examples of this kind of category would be the "traits" that separate dogs from cats or "vehicles" used in public transportation. These kinds of categories almost always function as concepts.

The processes of categorization have been studied by many different researchers who have developed a variety of theories. These theories do not always distinguish between

those that produce simple one-dimensional categories and those that can produce concepts.

Douglas Medin and Evan Heit discuss some of these different ideas, writing that: "What the similarity-based models (abstraction, exemplar, connectionist, and rule-based)...have in common is they form categories with bottom-up, data-driven processes" (126). This process produces only one kind of category because it is based only on what people observe. Other kinds of categories may be internally derived from some mental process of inquiry. Furthermore, "a complete description of a particular model must refer not only to its form of representation but must also develop its processing assumptions" (Barsalou, qtd. by Medin and Heit 126).

Theorists have different viewpoints about the sources of the categories and concepts used by writers. Susan Condor and Charles Antaki explain: "Mentalist approaches to social cognition assume categorization "to be a basic of human mental processes" used to simplify the task of explaining the immense amount of stimuli people receive from the world...[other] approaches to categorization...do not treat it as a given of the human mental system." Instead, they view the rules by which categories and

concepts are developed as being variable (325). This last view implies that it is possible for the same entity to be placed in different categories as the situation where it is used changes.

Other ideas come from "discourse functional linguists [who] have proposed a number of other models of categorical structure, using a variety of other terms including hierarchies, scales, continua, and prototypes" (Cumming and Ono 128). Obviously in discourse, the criteria for membership in a category may vary considerably. In fact, Sharon Crowley and Debra Hawhee conclude, "Almost any items can be grouped together into a class, depending on the rhetorical situation" (166). In discussing academic subjects, though, writers almost always use labels for categories that represent concepts.

Observations about Concepts. Since writers of analytic discourse almost always use categories that are concepts when they divide a topic, it is helpful to know how to distinguish them from more loosely formed categories. L. S. Vygotsky, in *Thought and Action,* studies how children gradually learn to form concepts. He notes some distinguishing differences between loosely arranged items

into categories he called complexes and the traits of items

grouped so that they become concepts. (See Figure 3.)

COMPLEXES (may have)	CONCEPTS (must have)
• concrete and factual bonds (61-2) • associative (family) bonds, perhaps by proximity (62) • a chain carrying meaning from one link to another (64) • a collection based on one differing trait (63) • a grouping based on participation in a function (64)	• abstract and logical bonds (61) • a view apart from concrete experience (76) • a rise above its elements (64-5) • synthesized abstract traits (78) • elements forming a hierarchy (64)

Figure 3. Differences Between Complexes and Concepts

Adapted from Vygotsky, L. S. *Thought and Action*. ed. and trans. by Eugenia Hanfmann and Gertrude Vakar. Cambridge, MA., MIT Press, 1962.

Many complexes are based on a single trait or a

"family" relationship, while concepts are based upon

synthesized abstract traits that form a hierarchy.

Vygotsky observes, "The sensory material gives birth to a

concept" (52). He concludes, "A concept emerges only when

the abstracted traits are synthesized anew and the resulting abstract synthesis becomes the main instrument of thought" (78). Medin and Heit reflect this conclusion in their definition of a concept. "By concept we mean a mental representation of a category serving multiple functions, one of which is to allow for the determination of whether or not something belongs to a class" (100).

Different ideas about how concepts are constructed still exist. The probabilistic and exemplar views deny the idea that concepts must have defining properties. Instead they may be organized in terms of properties that "are only characteristic of a category" and thus "membership may be graded." In addition, the exemplar view of concepts claims that classification of a member may be determined by similarity "to one or more of the categories' known exemplars" (Medin and Heit 100).

As I noted previously, one distinguishing trait of a concept is that it has a hierarchical structure. Ray S. Jakendoff (34) has identified three major subsystems within conceptual structure:

- major category system and argument structure
- organization of semantic fields

- conceptualization of boundedness and
  aggregation

Because it is formed from observation and reflection, a
concept is the product of a generative process of the mind.
"Once category membership has been established, the
knowledge stored in the category representative becomes a
resource for generating inferences about the new member"
(Kurtz et al 167). Furthermore, Jackendoff refers to the
generation of two kinds of concepts. "We have argued (1)
that sentential concepts cannot be listed, but must be
mentally generated on the basis of a finite set of
primitives and principles of combination; (2) the lexical
concepts cannot consist of instances, but must consist of
finite schemas that can be creatively compared (i.e. rule-
governed fashion) to novel inputs" (24). In addition,
smaller concepts may be used to create larger ones. Thus,
when a writer discusses a major concept based upon others,
a hierarchical organization — reflecting the structure of
the concept — may be built into an analytic discourse.

Propositional Theory

Knowingly or unknowingly, writers use the elements of
propositional theory as they embed the hierarchical

organization of a global concept into analytic discourse.

Much of propositional theory, first suggested by linguists,

has been validated by cognitive research (Graesser,

Gernbacher, and Goldman 295). Writers employ propositional

theory by using propositions and macropropositions in

appropriate positions. Basically, propositional theory is

concerned with four discourse structures: propositions,

macropropositions, macrostructures, and microstructures.

A proposition is an assertion that carries the

specific meaning of a clause in a sentence of discourse.

However, the terms proposition and sentence are not

necessarily synonymous terms as many sentences contain more

than one proposition. Frank Smith observes that

propositions cover a wide range of ideas:

> Our heads can also contain a host of
>
> propositions, ranging from simple facts (Paris is
>
> the capital of France, two time two equals four)
>
> through proverbs and other compact ideas or
>
> common sense, to complex verbal formulas and even
>
> entire segments of prose and poetry (13).

In fact, propositions are "the primary functional unit for

segmenting text" (Graesser et al. 295). In order to carry

meaning in an analytic discourse, propositions appear in

groups. Readers see relationships that produce meaning among the sentences.

On the other hand, a macroproposition is a generalization about a topic in a sentence of discourse. It names a topic and gives it a focus for a chunk of discourse containing a series of more specific propositions related to it. In a narrative, the semantic unit begun by a macroproposition is usually an episode. Tomlin et al explain:

> An episode, as a semantic unit subsumed under a macroproposition, is the textual manifestation of a memory chunk which represents sustained attentional effort and endures until an episode boundary is reached. (81)

In analytic discourse, the semantic unit usually seems to be a paragraph, or a small group of related paragraphs, where a macroproposition appears at or near the beginning.

A macrostructure consists of all the macropropositions of a discourse. As a group, macropropositions form macrostructures that are elaborations of the organizing hierarchical plans which guide writers in explaining a major concept as they construct an analytic discourse. The macropropositions function "as labels for segments of the

text by virtue of world knowledge and general schemata"
(Graesser et al. 296). Another part of a discourse's
structure, referred to as its microstructure, consists of
all the propositions of a discourse. The propositions
carry the details, examples, etc. that support, explain,
and enlarge upon the general information conveyed in the
macropropositions.

Another related idea of propositional theory has to do
with the background and foreground of an analytic
discourse. All the propositions in the microstructure are
considered to be the background of the discourse. In
contrast, the macrostructure provides the foreground of a
text. This may be inferred from research by Hopper who
defined the foreground of a narrative as "belonging to the
skeletal structure of a discourse" (qtd. in Tomlin et al.
92). Since all the macropropositions make up the
hierarchical macrostructure of an analytic discourse, they
relate, directly or indirectly, to its global theme--or
thesis.

The cognitive process of embedding a hierarchical
macrostructure using propositional theory into an analytic
discourse is not fully understood. However, the embedding
of a hierarchical organization into an analytic discourse

appears to be possible because a correspondence exists between the hierarchical macrostructure of propositional theory and the hierarchical structure that forms a major concept.

All of these ideas about analytic discourse may be better understood by analyzing articles published in modern periodicals. The purpose of this research is to explore how ideas in focus category phrases form the hierarchical structures used by professional writers of analytic discourse.

CHAPTER TWO

THE RESEARCH STUDY

Methods of Research

Different methods of research reap different results,
so choosing which method to use depends to some extent on
the purpose of the research. This research report on focus
category phrases in the hierarchical structure of analytic
discourse covers two quite different purposes and thus
approaches to acquiring new information. My initial
purpose is to find out why over half of the eighth-grade
students in my classes seem unable to write adequate topic
sentences for paragraphs. Looking for this answer results
in five small interrelated projects that occur in stages,
somewhat like a chain reaction. However, while all the new
information in these small projects appears to be valid
within the narrow context of where it is found, the general
value of the information can be determined only by testing
its applicability to a broader group of professionally
written articles. Therefore, that becomes the second
portion of the research whose findings are presented here.

This research on the uses of focus category phrases
that are part of the concepts expressed in the

macropropositions of analytic discourse consists of a
series of small projects during which I collect samples
from the published materials in my research sample. Each
one is designed to reveal data about some particular aspect
related to the uses of focus category phrases in the
hierarchical structures of analytic discourse. Often, the
findings of one project raise the question that is asked in
the next one, etc. In this manner several different views
of them are gained.

Although a variety of methods are used in exploring
the research questions raised, each project follows the
usual process many researchers generally use. Each project
starts by posing a question about something that I want to
know. Then I collect information introduced by the topic
posed in the question. Sometimes the collection is a group
of notes I have gleaned from the research findings and
observations of others, and sometimes the collection
consists of samples of a particular kind of discourse. My
third step is to analyze the contents of the collection to
determine how and to what extent they answer the research
question for that project. Then, I report on my findings.

The methods primarily used in the analysis of
discourse are observation, simple counts of various related

items, and analysis of the results. Gradually, I arrive at a structural description of an analytic discourse. A structural description involves "describing the forms and arrangements of the forms in the language without reference to meaning or communicative function" (Yule 306). At the end, all the threads of ideas from the small projects intertwine to explain the formation of the hierarchical structure of most analytic discourse.

On the other hand, I use four items in large portions of this report as I analyze discourse and report my findings. First, to test the extent to which professional writers use focus category phrases, a group of expository articles from periodicals is randomly chosen to serve as a base for analyzing portions of text. Secondly, Christensen's method of presenting discourse in paragraphs is extended to entire discourses. Thirdly, the use of generative rhetoric and propositional theory by a writer forms the hierarchical structure of analytic discourse, so the macropropositions used to form it are then more fully explained. This section ends by explaining the ways that I mark certain aspects of the examples I use to illustrate how focus category phrases are used in the macropropositions of analytic discourse.

Selection of Published Articles for a Research Sample

Since the discourse I use in making the discovery about focus category phrases is limited, the second portion of this research report explores how professional writers use focus category phrases in expository discourse. It is limited to modern expository prose since, from a superficial survey of current writings, it appears that writers of expository prose use focus category phrases in topic sentences more than in other types of writing.

The articles that became the research sample were chosen randomly. By using a list of random numbers from a table of "Random Units" from the *Handbook of Mathematical Tables*, 2nd edition, the articles are chosen by finding the numbers that correspond to the random ones from a numbered list of the approximately 2000 current periodicals subscribed to by the library at California State University, San Bernardino.

In addition, the latest issue of each periodical on the library shelves is used. In each periodical, the main articles are numbered from one to six. From the first periodical on the list, article one is taken. Article two is taken from the second periodical, etc., to the seventh

periodical where article one is taken again and so on.

Thus, the articles are chosen from a total of 125 that

appear in these periodicals. However, excluded from this

count are 54 subjects addressed in the *Congressional*

Monthly Weekly Report as only a brief paragraph or two is

written about most of the subjects. The article from it

that fell into the research sample, though, is a page long.

For various reasons, some publications are excluded in

selecting articles for the research. A yearbook is left

out because it seems not quite to fit with more frequently

published periodicals. Also left out is a magazine

supplied by a state agency on microfilm because receipt of

it lagged four to six months behind the rest. This reduced

the list of 20 by two. Of the 18 periodicals left, four

are found not usable since the reading material is so

technical that small units such as sections and paragraphs

can not be easily understood without professional training.

These were, as follows:

Bulletin of the Seismological Society of America

Journal of Experimental Psychology

Journal of Linguistics

Journal of the Mechanics and Physics of Solids

In a fifth publication, the *California EIR Monitor,* the random article, "The 30-Day NoP-Making It Work" is basically a memo on how to follow cetain procedures in submitting information to the California Resources Agency and uses jargon whose meaning would not be clear to outsiders, so it was left out, too. A perusal of the articles left out of the final group, however, shows that to some extent, all the writers use focus category phrases in the topic sentences of paragraphs.

The remaining 13 articles appear to be an adequate sample on which to base my research as they comprise a fairly wide representation of different kinds of expository writing. The sample includes formal research papers, business reports, political news, recent health discoveries, and some personal topics. Obviously, the group represents several different genres of discourse. While they fit under the broad category of exposition, they are all the result of some kind of analysis of a topic by the writers. Therefore, I shall refer to the sample articles of the research study as "analytic discourse," as that is a more precise characterization of them. A list of the articles appears in Appendix A. All of these articles

also lend themselves to analysis as examples of a generative rhetoric as presented by Christensen.

Extension of a Generative Rhetoric

Part of my research is based upon the extension of ideas presented by other researchers. One idea that applies to all of it, is the idea of a generative rhetoric originally proposed by Christensen. Earlier, I discuss his ideas about a generative rhetoric of paragraphs. Then when I discuss the categories used by writers, the idea of generating ideas resurfaces. Both Kurtz and Jackendoff refer to the generation of ideas in the categorization process that forms concepts.

Apparently, the hierarchical organization of Christensen's paragraphs reflects the hierarchical structure of the concepts being discussed in his examples. Christensen did not extend his discussion of a generative rhetoric beyond paragraphs. However, as I analyze the articles of the research study, I find that his ideas can be extended to large blocs of discourse and even entire discourses. This is one method of presenting the ideas of the major concept being discussed within an analytic discourse.

Furthermore, van Dijk, in his book, *Macropropositions in Discourse*, suggests that the macropropositions of a discourse form its hierarchical structure:

> Sequences of macropropositions need further global interpretation by assignment of higher level macrostructures (226).

> At global levels such functional relations [as example, comparison, etc.] hold between whole sequences of propositions and, therefore, between the macropropositions derived from these sequences (127).

> Superstructures further organize the macrostructure of a text, by assignment of sequences of macropropositions to schematic categories (128).

From such statements, I conclude that it might be possible to apply Christensen's method of showing the development of discourse to just its macropropositions. Therefore, I limit my arrangement of some examples simply to part or all the macropropositions of some discourse in the research sample. By doing this, I demonstrate that by using the typical format of a generative rhetoric, the different levels of abstraction of all the macropropositions of an analytic

discourse may be shown. To illustrate these ideas, I next give the entire text of a short article, and then I follow it by an outline of the focus category phrases. I also put the focus category phrases in brackets with the main category capitalized.

New Treatment for Warts

Some warts just refuse to go away. That is because they are [CAUSED by a virus] and even though the wart is removed the adjacent skin area may still contain other wart viruses that can cause new warts. [A new TREATMENT] for selected cases has proved very effective. It is not a pleasant treatment. The wart is injected with bleomycin (Blenoxane). In all 123 warts treated with the injection, 81 per cent were cured (*J Amer Acad Dermatol* 9:1983, 91).

The treatment is recommended [only for ADULTS]. It does cause moderate pain of short duration. The wart blackens and undergoes thrombosis in the week after the injection. Within two months the area healed without scarring or discoloration.

There are [other promising TREATMENTS] under

study. With the development of new antiviral

products such as interferon, some of these may

effectively rid the area of wart viruses and

eliminate recurrent warts. (Lamb 6-3)

Outline of the Macropropositions
With Focus Category Phrases
From "New Treatment for Warts":

This is because they [warts] are [CAUSED by a

virus] and even though the wart is removed the

adjacent skin may still contain other wart

viruses that can cause new warts.

[A new TREATMENT] for selected cases has

proved very effective.

The treatment is recommended [only for

ADULTS].

There are [other promising

TREATMENTS].

Additionally, the topic sentences of Christensen's

structural paragraphs correspond to the macropropositions

of paragraphs in propositional theory. Propositional theory

explains how the hierarchical organization of a topic is

placed in a text. This is further explained in the next

section about hierarchical structure.

Hierarchical Structure

Since the main concept of an analytic discourse is built upon a hierarchy of ideas, it may be helpful to understand how macropropositions are used to build the hierarchical structure that organizes it. Since a hierarchy represents different levels of abstraction, the various macropropositions that make it up are written on different levels of abstraction. One of the easiest ways to designate a hierarchical unit is to refer to its size by naming the type of macroproposition used with it. The term for the macropropositions that have been most widely used is that of topic sentences for paragraphs. The paragraph is the smallest of four general units. The other commonly named macroproposition is for the largest unit of an entire discourse; linguists consider it to be a global theme.

In the process of analyzing the articles in the research sample, I have identified two other units that use macropropositions in analytic discourse. They exist between the whole discourse and paragraphs. Tomlin et al explain:

> While the embedding of lower level units into higher ones is ultimately recursive, in most discourse studies one seldom looks beyond the

three levels of organization and development:

clause level or local level, paragraph or

episode; and overall text or discourse or global.

(90)

The largest unstudied mid-level unit is a subdivision

of a discourse topic. These are routinely used in analytic

writing, since analysis is taking apart a topic to examine

it. As no generally agreed upon term has been applied to

the macropropositions that head these large units, I

decided to refer to them as subthemes because the term

seems to show logical relationships to a global theme and

the sections, or subdivisions, developed from it.

The other mid-level unit is a chunk of several closely

related paragraphs headed by a macroproposition with a

focus category phrase that covers all the ideas within it.

In their studies of paragraphs and topic sentences, both

Christensen and Braddock became aware of such units and

made brief comments about them. Braddock referred to the

macropropositions for chunks of a few related paragraphs in

a discourse as major topic sentences. That seems to be a

fitting name, so I will continue its use.

As previously stated, the various units used to

construct a hierarchical organization of concepts for an

analytic discourse operate on different levels of abstraction. The global theme of the discourse sits at the top level, referred to as level one. Just below, subthemes for subdivisions of the discourse abide on a secondary level. At mid-level, major topic sentences for chunks of paragraphs may be found, but not always. They tend to appear in longer discourses. At the lowest level, topic sentences head paragraphs or divided-paragraph blocs. Occasionally a subtopic sentence is found within a paragraph. Because subtopic sentences are used sparingly, they cannot be considered a necessary part of a discourse. Used even less frequently are concluding sentences. (See Figure 4). When it is helpful in showing examples, I place the identifying name of a macroproposition in parenthesis immediately following it.

Methods of identifying the focus category phrases within them are explained in the next section.

```
┌─────────────────────────────────────────────────────────┐
│         discourse with a GLOBAL THEME                   │
├──┬──────────────────────────────────────────────────┬───┤
   │           sections headed by                     │
   │              SUBTHEMES                           │
   ├────┬─────────────────────────────────────────┬───┤
        │    chunks of several paragraphs         │
        │            headed by                    │
        │       MAJOR TOPIC SENTENCES             │
        ├────┬───────────────────────────────┬────┤
             │   paragraphs or divided-      │
             │     paragraph blocs           │
             │    headed by TOPIC            │
             │       SENTENCES               │
             ├────┬────────────────────┬─────┤
                  │  subtopics headed   │
                  │  by SUBTOPIC        │
                  │   SENTENCES         │
                  │   within a          │
                  │   paragraph         │
                  └─────────────────────┘
```
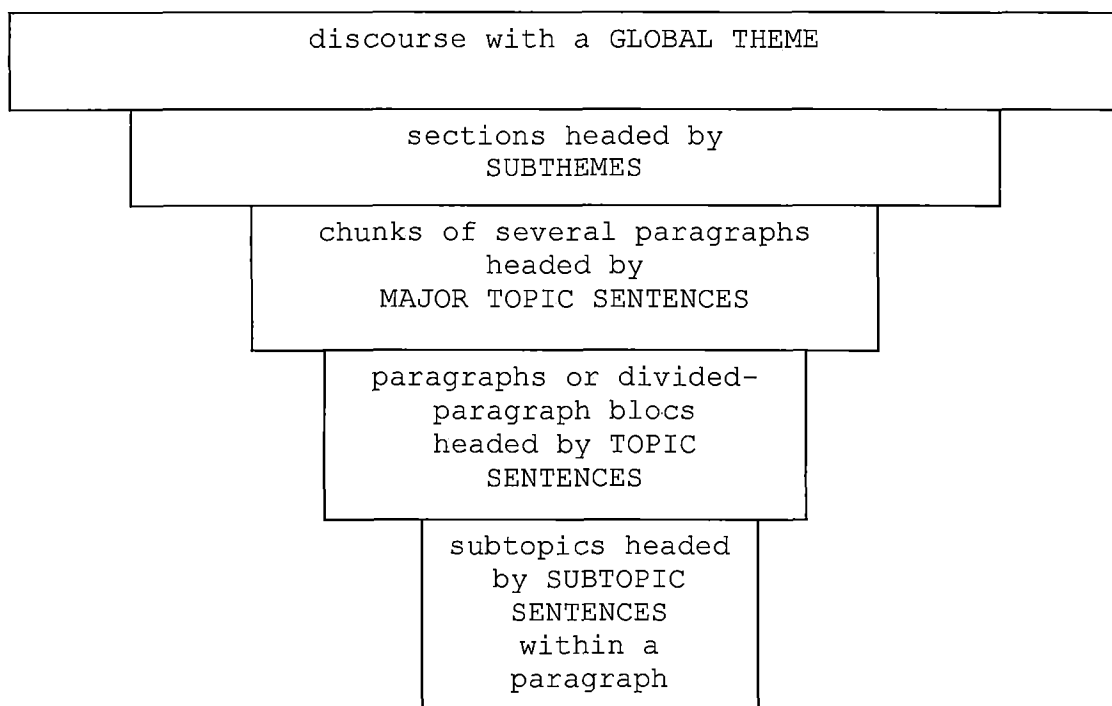
Figure 4: Hierarchy of Macropropositions by Their Level
         of Abstraction

The Marking of Discourse Examples

    Since this research report explores how writers use

focus category phrases in the macropropositions of analytic

discourse, I use many examples of written discourse to

illustrate their uses. Thus, I am able to explain the

basis on which I come to a conclusion that I have drawn.

    To prevent confusion, I feature the same kind of

layout of the written texts being used as examples

throughout the report, although I vary upon what aspect of

a text I am observing. Also I borrow and adapt methods
others have used in presenting discourse examples to
explain the way a particular feature of a discourse fits
into the rest of it.

Focus Category Phrases in Sentences. I start the
portion of the report on how writers employ focus category
phrases in analytic discourse both (1) by observing the
ways they fit into topic sentences and (2) by observing
their construction when they are pulled out of sentences.
Occasionally, a single word acts as a focus category
phrase, but more often they appear in phrases or clauses of
related words.

To show this, I first enclose the entire focus
category phrase in brackets. Within the brackets, I put
the main categorical term — or head — in all capital
letters.
For example,

The toxic shock syndrome can occur [with wound
INFECTIONS](Lamb, "Shock" 6-4).

Sometimes, I pull a focus category phrase out of its
sentence and show it alone, but it is still marked the same
way:

[his emergency POWERS to provide military aid to El

   Salvador] (Felton and Glennon 767).

Some focus category phrases are considerably longer than

others, so the brackets help readers to see when one begins

and ends.

   Focus Category Phrases in Paragraphs.   When I finish

discussing the uses of focus category phrases in topic

sentences, I turn to their uses in the subtopic sentences

of paragraphs.   In order to show the relationship between

the topic sentence and the subtopic sentence, I sometimes

show all or part of a paragraph.   To also show the

hierarchical organization of structural paragraphs, I have

borrowed Christensen's method of laying out the sentences

of a paragraph.

   His procedure for showing the hierarchical

organization of a paragraph is applied to the following

example.   The topic sentence, on the highest level of

abstraction, is labeled 1.

      1 At the same time [the sales FORCE was

         decentralized] it was [also upgraded].   (topic

         sentence)

      2 In addition, [an extensive training PROGRAM was

         undertaken.] (subtopic sentence)

3 Salesmen attended seminars and workshops,

                with particular emphasis on basic

                marketing:...

            3 State Printing also encourages its salesmen

                to attend classes in personality development,

                time management, and technical aspects of the

                graphic arts ("New Image" 58).

Notice the second sentence is indented with a 2 put in

front of it to show that it is subordinate to the first one

and on a lower level of abstraction. Likewise the third

sentence is indented with a 3 put in front to show it is

subordinate to the second sentence. However, the fourth

sentence is on the same level of abstraction and co-

ordinate to the third one. Therefore, the fourth sentence

is placed directly below the third one and retains a 3 in

front. Figure 4 shows how frequently used macropropositions

are related to the amount of text they cover.

    Cohesive Devices in Paragraphs. However, since

Christensen did not carry his method for showing the

development of paragraphs into longer blocs of discourse, I

add capital letters to the scheme. Since the capital

letters are used to show the location of a paragraph within

a discourse, I put capital letters by all the paragraphs of

the articles in my research sample, starting with A for
paragraph one and so on, to the end of the alphabet. When
an article went beyond 26 paragraphs, I labeled the 27th one
— AA, the 28th paragraph — BB, et cetera. After that I put
a dot followed by the number of the sentence in the
paragraph. Thus (J.2) refers to paragraph "J" in the
article and "2" refers to the second sentence in it.

One place that I found these added markers helpful is
in explaining the development of divided-paragraph blocs.
In addition, I show the cohesive devices that help bind the
sentences in different paragraphs to the topic sentence. In
the example that follows the cohesive device is lexical
reiteration. I have underlined words that form the lexical
cohesion.

1 (HH.1) <u>Lanny McJunkins, Time</u> Traveler. Adventure.
(one half hour; weekly) Canadian scientists in
Nukewaste, Ontario, have invented a <u>time</u> machine,
and now they need a human guinea pig [to TEST it].

2 (II.1) Enter <u>Lanny McJunkins</u>, fair-haired super-
star center for the Edmonton Oilers.

3 (JJ.1) Wayne Gretzky is <u>Lanny McJunkins, Time</u>
Traveler, the man whom scientists hurled back
in <u>time</u>, but can't retrieve.

4 (JJ.2) Every week, _Lanny_ appears at the

          scene of a historical disaster and tries to

          avert it.

     5 (KK.1) In the premiere episode, _McJunkins_

          lands on the deck of the S.S. Titanic...

                              (Pomerantz and Foreman 20)

Some other words are repeated in this example, but the

primary ones have been underlined to show that they all

relate back to information that appeared in the topic

sentence.

     Other types of cohesive devices are used in some

paragraphs. Yet they may also be highlighted simply by

explaining what kind they are in advance and then

underlining them in the text used as an example.

     Other times when it is appropriate, I use examples of

paragraphs in their usual format, although I still use a

letter at the start to show from what part of a discourse

they come. Although the linguistic ties in whole texts

could be shown in this manner, a simpler, less cumbersome

method for doing this is to show the hierarchical

organization of a text.

     Hierarchical Sketches of Texts. To show the

hierarchical organization of sample texts, I employ the

method Flower used to develop what she named "issue trees."
Often only part of a relevant focus category phrase is
shown, but the head is included and capitalized. The
following example is short and simple, but it shows how I
have adapted her method to fit the needs of my research
project.

Here, to indicate the position of the information in
the text, I continue the use of a letter followed by a dot
and number to show from what paragraph the information
comes. The numbers standing alone in front of the focus
categories indicate their level of abstraction relative to
the other focus category phrases given. (See Figure 5.)

```
                    New Treatment for Warts
                    A.  1 CAUSED by a virus



       A.4                              C.1
       2 TREATMENT, new                 2 TREATMENTS, other



              B.1
              3 for ADULTS only (Lamb 6-3)
```
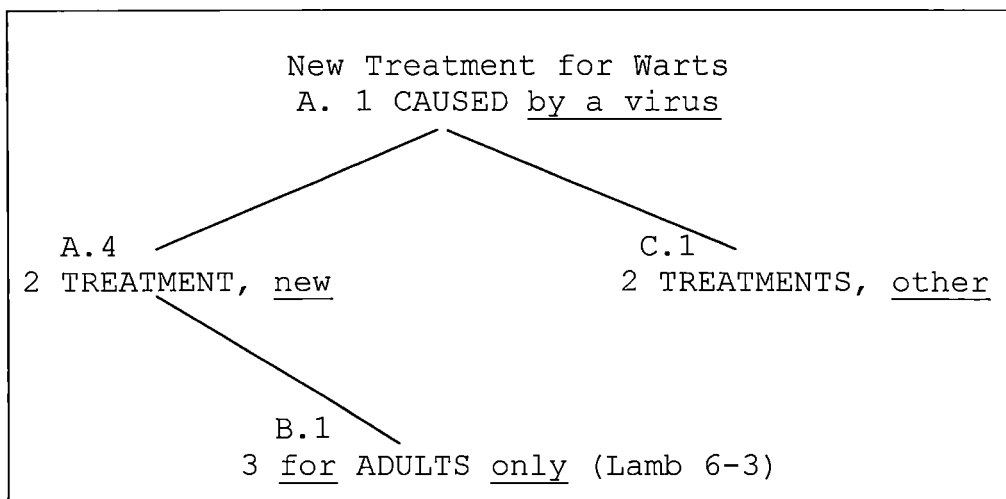
Figure 5: Sample of a Hierarchical Sketch

Although it would be possible to show all the focus category phrases from the paragraphs of a text, sometimes a hierarchical sketch would extend over more than one page and thus is would be difficult to view how all the parts relate to one another. I approach this problem in two ways. One way is show only the top portion of the hierarchical organization of a text, as that gives its major subdivisions. Another way is to take just a unit from the longer text and explain how that part is developed.

Finally, toward the end of this report, I explore how lexical chains of closely-related terms enhance the cohesiveness of the sample texts. These chains are easy to read because they are placed in charts where the words appear in vertical columns. To the side, corresponding letters of the alphabet indicate in which paragraphs the terms appear. The example, Figure 6, gives only one chain from an article, (Clugston 21).

A	complaints
B	unfair practices
C	complaints
D	report, critical
E	reassessments
F	report (on complaints)

Figure 6: Lexical Chain from "The Taxpayers'
            Litany of Complaints"

Notice that the chain shown in this example is composed of the repeated term "complaints," synonyms of it, and references to it. The chain covers a short article of one page. Because I have explained the marks I use in this section, I do not explain them again, knowing that you may refer back to here.

Key Discoveries

Frequently I drive by a big lot that has been vacant over a decade. One day I notice machines tearing down bushes; the next time, machines are pouring concrete; then soon cranes are setting girders in place for a multi-story structure — the typical process of building. Yet before

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this happens, an architect has drawn plans for the builders to follow. Drawing plans, though, occurs in the imagination of the architect, so the start of building a structure is a product of that cognitive process.

Likewise, any completed discourse is the product of a cognitive process in the writer's mind. In the 1970s, researchers started to study this cognitive process by using a method that asks writers to think out loud as they compose discourse. Then they studied the recordings of several writers' thoughts and started explaining the cognitive strategies writers use as they write. In an even later research study by Flower and others, the following conclusion is reached about tasks related to writing:

> The process of task representation [within the mind] begins when the problem solver begins consciously or unconsciously to represent the givens and constraints of this situation, the goals she would obtain, and the strategies or actions she might take, since together these constitute the problem she is solving (Flower "Task" 38).

This observation sums up the process I use to find new information about the structure of analytic discourse.

I start with the question: What is the difference between adequate and inadequate topic sentences being written by my eighth graders? Finding the answer is the task that I set for myself. Having set it, I try several different cognitive strategies to find the answer. In my search, I came to a number of dead ends, but I eventually find the answer to the question.

Some researchers include in their reports the processes they use to find new information; others just apply the new information by analyzing its effects upon appropriate published discourse. In this report I do both. I start the report of my findings by briefly describing the processes I follow in making the three key discoveries that yield new information. In reporting these, I rely upon my memory, my notes, and a diary I keep as I work. I report each discovery by first listing the question that identifies the task before me.

Discovery One: Focus Category Phrases in Topic Sentences

Question: What is the difference between adequate and inadequate topic sentences?

I make the first discovery about focus in the topic sentences of paragraphs when I decide to solve this

problem. Since I have not found the answer to in printed
materials, I decide to save both adequate and inadequate
examples of topic sentences from the eighth graders' tests
about the history of the English language as they wrote
essay questions that required paragraph answers. This
provides me with a group of examples that could be
compared.

After a couple of months of saving examples of topic
sentences, I laid out over twenty of them. I put the
"inadequate" sentences in a column to my left and the
"adequate" ones to my right (Se Appendix B). Next I asked,
"What is the difference between the sentences in the
inadequate and adequate columns?" I do not see any obvious
difference between them, so I begin by comparing answers on
similar subjects:

A. inadequate:

American English and British English are not

alike because people in England speak faster.

adequate:

American English differs from British

English in three major ways.

B. inadequate:

The words "calico" and "tea" were brought into

the English language by ships roaming the world.

adequate:

Several different factors contributed to the

growth of the English language.

C. inadequate:

Over time, changes were made in the pronunciation

of words like "fight" and "cake."

adequate:

Some changes gradually happened to Middle

English.

Eventually, I notice what might be a difference

between them. The adequate ones have in them "three major

ways," "several different factors," and "some changes".

These phrases name categories.

Do all the adequate topic sentences contain a category

phrase of some sort, and is this what makes them different

from the inadequate ones? Yes. Besides, those already

listed, I find in other topic sentences "different groups,"

"four periods," "some methods," "explorations of British

ships," "several reasons," "a combination of factors," and

"two fortunate circumstances." (See Appendix B for examples

of student topic sentences).   Still, are the category

phrases the only thing that made some topic sentences

adequate and some not? Perhaps some inadequate topic

sentences also have categories. I find some did, but they

contain other information that made them incorrect.

Consequently, I conclude that the use of categorical terms

as a focus was the primary difference between "adequate"

and "inadequate" topic sentences.

Because of this discovery, I informally extend my

research to noticing whether or not published writers use

categorical terms in phrases as a focus in the topic

sentences of expository discourse. I observe that their

use appears to be fairly common for a small bloc of two or

three paragraphs as well as with paragraphs. I wonder,

"How often does this happen?" Yet I know that conclusions

based on casual observations may be faulty. Therefore, I

decide to try to find answers to these questions as part of

my master's thesis in English composition.

Discovery Two: Hierarchical Structures in Discourse

Question: What constitutes a short bloc of writing

controlled by a topic sentence?

In my research proposal, short blocs has been

substituted for paragraphs because a topic sentence

sometimes controls several closely related paragraph. A
short bloc, I tentatively decide, is any obviously complete
unit of writing organized from a categorical term or phrase
acting as the focus of a topic sentence.

As I read, I mark the focus category phrases in the
topic sentences of the articles that are serving as the
base for my research. By the time I have worked with
several of the articles, I become aware that I am coming
across a number of instances where one category is actually
acting as a subcategory to a previous one. If some
categories are subordinate, then the focus category phrases
of topic sentences are on different levels of abstraction.

Then as I move from a categorical phrase in one topic
sentence back toward the beginning of an article, I find
another one that is superordinate to all the previous ones.
Soon I am finding passages where the categorical phrases in
topic sentences are on as many as four levels of
abstraction. When one of these obviously cohesive units of
writing extends to seventeen paragraphs, I know that I am
not going to find the boundaries of a short bloc of writing
without changing my approach to the problem.

Up and down the columns of print I look at the focus
category phrases in topic sentences, hoping to identify

clearly short blocs of discourse. I simply cannot spot a simple, obvious delineation that sets the boundaries on short blocs of writing. Finally, I look at an entire composition from beginning to end. I choose the shortest sample I have, a three-paragraph article titled "Hot Held Food Is Poor Food." I use Christensen's method of laying out paragraphs because his method shows that the sentences are on different levels of abstraction.

By using this type of layout, I hope to find out where one bloc of discourse separates itself from another, but instead I find a chain of focus category phrases made from all the macropropositions of the discourse.

The question now becomes, "Is the interlocking chain of focus category phrases in the discourse I have analyzed an unusual or usual occurrence?" As I look at the layout of the article "Hot Food...," I decide I do not need to write every word of an article. I can just write down the focus category phrases from the macropropositions showing which level of abstraction each is on, as apparently they are all interrelated. (See Figure 7, next page.) As I continue with another short article, "Some Calcium Supplements are Toxic," all I write down are the macropropositions. Again I have an interlocking chain of

focus categories. Then I do the third and fourth articles
from *The Health Letter.* In all of them, the focus category
phrases in the macropropositions form interlocking chains.
I still have not found the boundaries of a short bloc of
discourse.

```
                  Hot Held Food Is Poor Food
1 (A.1) [COOKING makes food safer] because it eliminates
   harmful bacteria.
   2 It also makes foods taste better.
   2 But cooking also destroys some essential ingredients and
      keeping food hot to serve makes matters worse.
      3 There are [many CIRCUMSTANCES that cause food to be
         held before it is consumed].
         4 Cafeterias almost always have to do this.
         4 So do hospitals where heated food carts are brought
            to the floors and the meals served from them.
            5 Reconstituted whipped potatoes were used as [an
               INDEX of the effects of holding food for 60
               minutes at 82 degrees C (179 degrees F) with a
               relative humidity of 50 percent].
               6 (B.1) Actual serving conditions may require
                  holding food much longer or under even less
                  ideal circumstances.
               6 The whipped potatoes product used was enriched
                  with vitamin C.
                  7 But within the 60 minute period the potatoes
                     had lost 36.2 percent of their vitamin C
                     content.
                     8 (C.1) It is important to recognize that
                        holding food [does RESULT in loss of
                        nutrients].
                  8 So does food processing.
```

```
         Outline of Focus Category Phrases in Text
1 (A.1) [COOKING makes food . . .]
   2 (A.4) [many CIRCUMSTANCES that cause food to be held
      before it is consumed].
      3 (A.7) [. . . an INDEX of the effects of holding food. .
         .]
         4 (C.1) [. . . [does RESULT in loss of nutrients].
                                                    (Lamb 6-3)
```

```
   Key: Each item indented to the right is on a lower
   level of abstraction than the preceding one.
   Letters refer to the order of paragraphs in the
   text. Numbers refer to the places of sentences
   within the text.
```

Figure 7. Outline Based on Levels of Abstraction

Next, I think, "Perhaps I can find breaks delineating short blocs of discourse developed from topic sentences in a slightly longer article. So I lay out the article, "The Taxpayers' Litany of Complaints" by Michael Clugston with the same results. Next I lay out other articles and get the same results. For longer articles, though, even using just the focus category phrases from topic sentences, thereby showing the relationships among them, extends over more than one page, which makes it difficult to see the relationships among them.

For a longer discourse, I need a method that would show all the relationships among the focus category phrases in the topic sentences of an analytic discourse on one page. Then I remember a kind of "family tree" arrangement Flower has used in her book *Problem-Solving Strategies for Writing,* and I think it might do the job because it will briefly show the various sections of a discourse (9-10). I apply her method to the abbreviated focus category phrases in the four articles from *The Health Letter* (Lamb 6-3). (See Figure 8). Evidently all the categories from the macropropositions not only interlock; they also form a hierarchy.

```
┌─────────────────────────────────────┬─────────────────────────────────────┐
│                                     │                                     │
│   Hot Held Food is Poor Food        │   Some Calcium Supplements          │
│                                     │             Toxic                   │
│        A.1                          │                                     │
│        1 COOKING                    │          A.1                        │
│               \                     │          1 INTAKE                   │
│                \                    │                  \                  │
│         A.4     \                   │          A.4      \                 │
│         2 CIRCUMSTANCES             │          2 SUPPLEMENT               │
│                  \                  │                    \                │
│                   \                 │           A.5       \               │
│          A.7       \                │           3 METALS                  │
│          3 INDEX\                   │                      \              │
│                  \                  │             B.3       \             │
│                   \                 │             4 PREPARATIONS          │
│           C.1      \                │                                     │
│           4 RESULT                  │                                     │
│                                     │                                     │
├─────────────────────────────────────┼─────────────────────────────────────┤
│                                     │                                     │
│   New Treatment for Warts           │  Toxic Shock Still Around           │
│                                     │                                     │
│                                     │          A.1                        │
│  A.1 CAUSED by a virus              │          1 ILLNESS: toxic shock     │
│              / \                    │                 \                   │
│             /   \                   │          A.5     \                  │
│            /     \                  │          2 TOXINS                   │
│    A.3          C.1                 │                   \                 │
│    2 TREATMENT, 3 TREAMENTS,        │           B.1      \                │
│    new           other              │           3 STEP forward            │
│            \                        │                  / \                │
│             \                       │          C.2 /     \  D.1           │
│        B.1   \                      │          4 CASES,    3 INFECTIONS,  │
│        3 for ADULTS only            │          milder         wound       │
│                                     │                                     │
└─────────────────────────────────────┴─────────────────────────────────────┘
```

Figure 8. Hierarchical Sketches of Short Articles

Subsequently, I apply her method to the article "A Taxpayers' Litany of Complaints" (Clugston 21). Next I make a hierarchical sketch of the focus category phrases in its topic sentences. These also form a hierarchy. Then I lay out the focus category phrases in the macropropositions of the 13 articles of my research study. Although no two are alike, every article contains a hierarchy of focus category phrases formed from all the macropropositions of the discourse. This result is consistent with what some researchers have said about the hierarchical structure of certain kinds of writing.

Therefore, I conclude that maybe a hierarchical structure made from focus category phrases in macropropositions might be a regular feature of exposition. Still I need to go back to my original purpose and first find out how focus category phrases are used to help organize the contents of what constitutes a short bloc of discourse. A short bloc, I finally decide, is a group of two or more paragraphs developed from one focus category in a topic sentence.

Discovery Three: Hierarchies Reflect Concepts

Question: How do you find the global category that will sit at the top of the hierarchical organization of a topic for an analytic discourse?

Working with the information known about hierarchies in discourse, I need to identify a focus category phrase that is global in that it covers all the other focus category phrases of the discourse. From the work of linguists, I know that a global category will likely become part of the global theme of an analytic discourse. However, the information I have found about the hierarchical structures in analytic discourse is sparse, scattered, and incomplete.

Consequently, I decide to keep a diary of the activities that I engage in and the thoughts I have as I search for a global category for the notes I have collected about hierarchies in analytic discourse. Then I analyze what I have done and match it to applicable research on cognitive skills. To put this in a context, I am using condensed notes from my diary to illustrate how I function during this portion of my research.

As I gathered information, I have noticed both hierarchical frames and processes are mentioned

in a number of places. As I think this over, I
choose as a tentative global theme: "Hierarchies
permeate writing." It is true generalization and
places where hierarchies are used could serve as
subtopics. So I divide my notes accordingly.
(pre-diary summary).

To help identify the global themes of analytic discourse, I
decide to use the features Flower has identified as part of
a synthesizing plan. These include "a clearly articulated
'synthesizing concept'...[that] is a substantive,
informative idea...[which] works as a controlling concept
that governs the selection of information and the
organization of the entire text" ("Task" 47).

With this in mind, I set up questions to act as
criteria:

1. Is the idea global enough? Does it encompass all
   the important information gathered?

2. Will it fit into a macroproposition as a global
   theme?

3. Can a hierarchy of supporting information be built
   from it?

4. Is it a fresh, substantive, major idea about the
   topic?

106

The answer to all these questions about a possible global

theme needs to be "yes."

"Hierarchies permeate writing," is global

enough and can easily become part of a global

theme. It is divisible into the parts for a

hierarchy.

"Is it a fresh, revealing, major idea about

the topic?" The answer makes me uneasy, as it is

mainly descriptive. If all the places where

hierarchies can be found in the writing process

are discussed, it will be just a short summary of

existing information, not a synthesis of it.

Also, as a theme "Hierarchies permeate analytic

writing" does not reveal any new idea of

substance about the topic.

The question to answer is "Why?" Why do

hierarchical frames and processes permeate the

writing of analytic discourse? By induction, I

might find the answer to "why," as that's one

method by which ideas may be synthesized.(Diary

entries 1-8).

Therefore, in continuing to look for a global category

about hierarchies in discourse, I try several ways of

categorizing my notes. At the end, I have five general

ones: "functions," "kinds of thinking," "results," "parts,"

and "processes." The idea of "functions" of hierarchies

appears to be worth exploring more.

> I compile a list of seven functions. Then I
>
> ask, "Can too many functions be combined to
>
> become three to five major categories that might
>
> be the main way to subdivide the topic of
>
> "hierarchies?" I think, "Maybe." (Diary entries
>
> 12, 18, 21-2, 25, 32.)

Then, I suddenly change the direction of my thinking.

In my quest to find a viable global focus category for

the hierarchical organization for my discourse, I switch to

a cognitive skill known as "felt sense." To be more certain

about this, I look in the book *The Writer's Mind* and find

that Sondra Perl has written about it. <u>Felt sense</u> is an

inward knowledge of what is important and what to do next

in writing a discourse (46).

> While still considering "functions" as a way
>
> of organizing my discourse, my attention is
>
> caught by the use of "concept" in one note and
>
> "conceptual" in another. The use is by two
>
> different writers, both major researchers: Teun

A. van Dijk and L. S. Vygotsky. I reflect that

maybe hierarchies produce concepts. This would

explain how meaning gets into a discourse. To

test the idea, though, I need to know more about

"concepts" because my idea of them is rather

vague. (Diary entries 11, 22-3, 26).

As I look for more information, I find Vygotsky's book

Language and Action especially helpful because he has

studied how children develop the ability to understand and

form concepts.

Vygotsky mentions specific traits of concepts that

seem relevant to the formation of focus category phrases in

macropropositions and to a hierarchical organization of

them.

After studying more about "concepts," I

conclude that they are indeed the key to an

inclusive, global category for an analytic

discourse. The information that supports this

conclusion, though, is rather scattered. Yet I

find several distinctive traits of concepts.

These traits include those mentioned by Vygotsky:

"a view apart from concrete experience" (76),

"abstract and logical bonds" (61), and "elements

that form a hierarchy" (64). Suddenly, an idea

crosses my mind: "Hierarchies are concept-

building machines" (Diary entry 32).

Using this metaphor helps me gain a better understanding of

how concepts are built. In this regard, Donald McQuade

says, "Metaphor produces more than association in thinking

and writing; it highlights the assimilation powers of the

mind" (224).

From this idea of hierarchies being machines that

build concepts, I later construct the global theme for the

section on research that relates to hierarchical structures

in discourse: Hierarchies are complex, dynamic, flexible

structures that are designed to generate and explain

concepts.

The final test, of course, is the answer to the

question, "How well does the idea work as a global theme

for my research report?" It is a major, substantive, fresh

idea. It works well, both for the section on hierarchies

and for the overall research I had done to date. As a

result, I change my research plan from how categorical

terms are used to provide focus in topic sentences to how

focus category phrases in concepts are used by writers in

the macropropositions that make up the hierarchical

macrostructure of analytic discourse. Accordingly, the final version of my thesis is, as follows: Focus category phrases in macropropositions form the hierarchical structure of a global concept, or thesis, in analytic discourse.

CHAPTER THREE

FOCUS CATEGORY PHRASES IN TOPIC SENTENCES

As we drove down the highway, we noticed clusters of trees in the distance. Drawing nearer, we noticed a white narrow steeple among the trees. In town, our attention turned to the ringing bell in the steeple as it tolled the hour. Accordingly, linguists would say that the readers' focus shifted as each new item was noticed. Their focus would start with the "clusters of trees," go on to the "narrow steeple," and end at the "ringing bell."

If, however, I wanted to write a topic sentence for this group of sentences, I might start out by saying, "As we drove down the highway, we saw some signs ahead of us of a small town." According to the first discovery discussed in chapter one, "some signs ahead of us" would be considered a focus category phrase because it tells what the contents of the paragraph will be. In doing so, it also usually identifies what kind of new information is being presented. In this chapter, I plan to explore how professional writers used focus category phrases in the sample articles chosen randomly.

By using focus category phrases, writers tell readers upon what portion of a concept to focus. In the last chapter, I reviewed research showing that topic sentences are used in many paragraphs of analytic discourse. Many topic sentences are included in the articles I am using as the basis for this research study. In this chapter, I examine how writers use focus category phrases to introduce a new concept in the topic sentences of paragraphs.

Structure of Focus in Topic Sentences

For decades, students have been told that paragraphs may start with a topic sentence. Nowadays, instead of using the term "topic sentence," some teachers are telling students to "focus" their writing. From brief guidelines like these, inexperienced writers often have been left to learn for themselves, by trial and error, what are the constituents (parts) of a topic sentence or a sentence with a focus.

Parts of a Topic Sentence

In my research I have identified three essential parts of a topic sentence for a paragraph of analytic discourse. Obviously, one is the name of the topic or subject of the paragraph. A general understanding of how sentences are

composed shows that a verb is the essential second part. Although it is usually implied rather than explicitly stated, the third part of a topic sentence limits what may be said about the topic within the paragraph developed from it. This, then, constitutes an essential third part of a topic sentence. This third part is usually a concept acting as a focus category in a phrase or clause suggesting how the paragraph will be organized and developed. I refer to this third part as a focus category phrase. The three parts of a topic sentence for a paragraph may be exemplified by some of the topic sentences taken from the research sample.

(1)   (a) The toxic shock syndrome can occur [with WOUND infections] (Lamb, "Shock" 6-4).

        topic   =toxic shock syndrome

        verb   =can occur

        category =INFECTIONS

      (b) But that dominant vertical fissure in world politics has come to be seen [in far less simple TERMS] (Peter Smart 263).

        topic   =fissure

        verb   =has come to be seen

        category =TERMS

(c) In drafting a foreign aid authorization bill

(S 2346) for fiscal years 1984-85, the

committee set [formal working SESSIONS on

Central American issues] for April 3 (John

Felton and Michael Glennon 766).

    topic   =committee

    verb   =set

    category   =SESSIONS

Notice that in these examples, all the focus category

phrases could be subdivided logically in the development of

their respective paragraphs. The focus categories in the

examples - "infections," "terms," and "sessions" - imply

that the author is going to talk about two or more of

these. Such categorical words in topic sentences are easy

to identify and understand.

Ways Focus Category Phrases Are Limited

In addition, in my analysis of the articles that I

found in my research sample, writers usually put some kind

of limitation on the focus category phrases they use in

forming topic sentences. This also can be seen in the

preceding examples. Additionally, writers may use a

complement to complete the phrase, and/or put a specifier

in front of the focus category which serves as the head of

the phrase. In sentence 1a, the word "wound" acts as a specifier for "INFECTIONS," and in sentence 1b, "far less simple" is a specifier for "TERMS." In sentence 1c, "formal working" is a specifier for "SESSIONS" while "on Central American issues" is the complement that completes the phrase. Alone, most categories are too broad to fit the small group of items presented in a paragraph. As a result, writers limit them with words, phrases, and clauses that make the focus category phrase more specific to the topic of the paragraph.

When all the constituents are together, they form a focus category phrase which is also a type of focus structure. The terms "head," "complement," and "specifier" are linguistic terms I am using in a general sense. I shall explore several different ways I have found focus category phrase structures to be used in topic sentences.

One way writers limit the focus category of a topic sentence is by showing an amount with a specifier. These are easy to spot. This is especially true when a number is used as a specifier in front of the head. Quantity, though, may also be expressed in less exact terms. Sometimes this is as simple as the use of the articles "a"

or "the" to indicate "one" or the use of a plural noun to indicate more than one, as these examples show:

(2) (a) [in three separate farming CATEGORIES] (Ian McAllister (and Declan O'Connell 195)

(b) [a new ILLNESS] (Lamb, "Shock" 6-3)

(c) [widespread COMPLAINTS] (Clugston 211)

(d) [from several DIRECTIONS] (Smart 262)

Thus the specifiers in focus category phrases, indicating an amount, may be either exact or approximate.

Frequently, though, writers feel that they need to confine themselves to only one item in a focus category. In such instances the focus category appears in its singular form. By confining themselves to one item, writers may make a fuller and more detailed explanation it. Even so, they usually further limit the focus category in order to make it more specific. Topic sentences designed for this purpose are quite common:

(3) (a) Most important for our Story, Fremont bought [a rubber RAFT] for $150 from Horace H. Day of N.Y., the inventor and manufacturer (Peter Skafte 28-9).

topic   =Fremont

verb   =bought

```
            category    =RAFT

            specifier   a rubber
```

The paragraph developed from this sentence gives a full description of the raft.

```
    (b)   An important aspect of State Printing's

          computer sales program is [its service

          ORIENTATION] ("New Image" 58).

                topic     =computer sales program

                verb      =is

                category  =ORIENTATION

                specifier   its service
```

In the balance of the paragraph, the writer explains why a "service orientation" is considered important and tells some ways the "service" is provided.

In addition, writers limiting a focus category in a topic sentence may do it with a few words or many. These words may be rather general or very specific or somewhere in between. Many simple uses of specifiers that limited the heads of focus category phrases were found in the study sample:

```
    (4) (a)  [a competitive PRODUCT] (Bob Pomerantz and

             Hersh Forman 18)

        (b)  [a new tax CONTROVERSY] (Clugston 21)
```

Quite often, though, a writer wants to use an even more specific focus in a topic sentence.

In a larger, more complex qualification of the category, the writer may first use a specifier to make a general limitation and then, after the head, add a complement making the focus category phrase even more exact.

(5)   (a)   [the RELATION between creed and action] (Smart 251)

(b)   [his emergency POWERS to provide military aid to El Salvador] (Felton and Glennon 767)

(c)   [More EVIDENCE of the difficulties fishermen have encountered with Revenue Canada turned up...](Clugston 21).

(d)   [the question of the SIGNIFICANCE of occupational class in determining party support] (McAllister and O'Connell 197)

All these examples appear in rather simple constructions; some focus structures are quite long and complex. As examples are given for other reasons, also note the various ways the focus categories are limited.

Other Kinds of Focus Category Phrases

So far, I have discussed how the vast majority of
focus category phrases in topic sentences are constructed.
As would be expected, and as all the examples given so far
illustrate, the types of categories most frequently used in
focus category phrases by writers to structure information
are nouns.

Verbs as Categories. I also noticed some other ways
focus categories in topic sentences are constructed. One of
these is a few occasions when a writer uses a verb that
functions as the head (main category) in a topic sentence:

(6) (a) Following the early descriptions, I

[DISCOVERED the voyagers' breakfast spot on

the right shore beneath the Pathfinder Dam]

(Skafte 33).

(b) Without moving any of the existing

equipment, the plant [can be EXPANDED as need

dictates] ("New Image" 60).

(c) A beginning might be made [by EXPLORING the

extent to which attitudes and methods of

scientific research have been used by

practitioners in gathering and organizing data

to solve practical problems, to conduct what

has been called "in-house research"] (Lynch

377).

Note that the verb heads could be converted to the more

commonly used noun categories of "discovery," "expansion,"

and "exploration." Another way of deciding whether or not

the verb is acting as part of a focus category phrase is to

look at how the paragraph is developed from it. After the

verb "discovered," the writer identifies specific landmarks

that were mentioned in the diary about Fremont's 1842

expedition of the region. After the verb "expanded," the

writer tells how the expansion of warehouse space provided

added benefits for the company. In one sentence after the

verb "exploring," the writer simply states that Hewitt had

excluded "in-house research" in a similar report.

In this research study, verbs functioning as focus

category phrases in topic sentences were rather rare. Yet,

the use of verb heads with complements has previously been

identified by linguists. Andrew Radford explains, "A

complement clause is a clause which is used as the

compilment of some other words — (typically as the

complement of a v., adj., or n.)" (499).

Compound Focus Category Phrases. In other cases, writers combine two or three focus category phrases in a topic sentence for a paragraph. Usually the categories with their specifiers and/or complements were joined by the conjunction "and." Yet I also found examples of focus category phrases joined by the less common conjunctions of "but" or "or." The following examples illustrate this:

(7) (a) A new plant was seen by management as necessary [to the IMPLEMENTATION of the total marketing plan] and[ACHIEVEMENT of the goal of steady growth as a high quality printer] ("New Image" 60).

(b) [An apt MODIFIER] or [flavor ACCENT] will add distinction to a drink (Emanuel Greenberg 175).

I refer to this type of construction as a compound focus category phrase.

Divided Focus Category Phrases. On other occasions, the focus category phrase is divided with part of it before the verb and part of it after the verb. One of the three examples I found is given here.

(8) [Personal CONTACTS] are [vital] to the marketing

plan and are being made by active involvement in

community, civic and trade groups ("Image" 57).

Since "vital" describes "personal contacts," it appears to

be part of the focus category phrase of the topic sentence.

The paragraph is developed by the addition of one more

sentence: "To help identify potential customers in this new

market, salesmen are provided with management support to

join and actively work in community art and advertising

clubs" ("Image" 57).

With so few instances of its use, I hesitated to

include this kind of focus category phrase until I kept

coming across it in other reading that I was doing.

"Wh-" Focus Category Phrases. Another rather uncommon

way writers form limited phrases or clauses with categories

in topic sentences is by starting them with an

interrogative pronoun. Linguists refer to these as "wh-

words". I only found a few of these, but they seem to

serve a writer who wants to ask a question and then show

its answer. Two examples are shown here:

(9) (a) The CBC must figure out [WHAT it does

best] and do more of it (Pomerantz and

Forman 18).

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(b) I asked the proprietor [HOW OFTEN this

canyon was run in rafts] (Skafte 34).

Here the wh-words act as heads in the focus category

phrases for the text that immediately follows. These

examples from the research articles simply reveal that

interrogative pronouns are used to represent unnamed

categories.

Subtopic Sentences in Paragraphs

Although they are used rather sparingly, it is easy to

demonstrate that some macropropositions writers use act as

subtopic sentences in paragraphs of analytic discourse. A

subtopic sentence is subordinate to the topic sentence of

the paragraph. In addition, a subtopic sentence,

constructed in a manner similar to that of a topic

sentence, clearly seems to relate in some way to the

semantic content of the topic sentence. The relationship

between the topic sentence and subtopic sentence in the

first example below is between a decision and the means of

carrying it out.

1 (U.1) At the same time [the sales FORCE was

decentralized], it was [also upgraded]. (topic

sentence)

2 In certain markets more experienced sales

people were hired.

2 In addition, [an extensive training PROGRAM]

was undertaken. (subtopic sentence)

3 Salesmen attended seminars and workshops, with

particular emphasis on basic marketing: how to

sell prospects, how to turn commodity contacts

into business contacts, and how to obtain more

business from existing clients.

3 State Printing also encouraged its salesmen to

attend classes in personality development, time

management, and technical aspects of the

graphic arts ("New Image" 58).

Both sentences preceded by the number two were ways of

"upgrading the sales force." Since the second one needed

further elaboration, the sentence becomes a subtopic

sentence for the additional information.

In the next example, the topic sentence implies that

two items are somewhat similar. The subtopic sentence

responds to it by saying the differences between the two

items will be discussed.

1 (X.1) The modern counterpart to the service study is

[the consultant REPORT]. (topic sentence)

2 Although financial aspects are quite different, the contrast with research is similar.

3 Joe Hewitt has analyzed [the DIFFERENCES:] (subtopic sentence)

4 In consulting studies someone with the appropriate expertise is commissioned to gather information relevant to a special problem and to present an expert opinion on the solution to that problem based on the consultant's general knowledge and the specific information gathered for the study.

5 Consulting is a very useful process of applying independent judgment to a problem, but it is not research, which applies rigorous methods of observation and analysis in a manner that allows the data to speak for itself" (Lynch 373-74).

The "differences" are based on a comparison of two items identified in the topic sentence.

The relationships between topic and subtopic sentences may frequently be assessed without giving the other sentences in the paragraph. Next are examples that illustrate these relationships. The relationship in the

next example is a simple one of presenting a problem and then discussing a solution to it.

> 1(PP.1) Despite the membership interest in research just described, ALA's [American Library Association] ambivalent attitude toward the role of research in the association is evident [in the HISTORY of the association's Office of Research (OFR)].... (topic sentence)

> 2(PP. 6) Since the Committee on Research sensed confusion among ALA leaders about OFR's mission and nature, the Committee on Research drafted [a new and much more practical CHARGE for the office] which was approved in January 1984 by the ALA Executive Board(Lynch 379). (subtopic sentence)

When it is briefly mentioned, the inclusion of the solution to a problem in a subtopic sentence of a paragraph seems appropriate.

In the next topic sentence of a paragraph, the researchers raise a question about "the significance of occupational class in determining party support." In the subtopic sentence they explain how they found the answer to this question.

1 (O.1) The apparent importance of nationalism and

religious value for Fianna Fail, but not for the

other two parties, raises [the question of the

SIGNIFICANCE of occupational class in determining

party support].... (topic sentence)

2 (O.4) The bracketing of Fianna Fail as a cross-

class nationalistic party, on the one hand, and

Fine Gael and Labour as more directly class-based,

on the other hand, can be further refined [by

examining the UTILITY of class-images in

predicting party support] (subtopic sentence)

(McAllister and O'Connell 196-97).

Apparently subtopic sentences in paragraphs of analytic

discourse may be used to show a number of different

relationships.

Another use of subtopic sentences that I observed was

when a writer introduced a long quotation in the topic

sentence or the one following it. Then the first sentence

of the quotation acted like a subtopic sentence. The

following example is typical of this use. It comes from an

article titled "William James and John Dewey: Suppressed

Writings."

1(Q.1) Searching for reasons for resistance to

Alexander's teachings, Dewey hazarded [the GUESS
that the prevailing dualistic feelings about the
body caused people to fail to grasp Alexander's
method]. (topic sentence)

2 On this, Dewey writes:

3 Men are afraid, without being aware of
their fear, to recognize [the most wonderful of
all STRUCTURES of the vast universe — the human
body] (subtopic sentence) (Morrow 75).

Some writers tend to use subtopic sentences in the
structural paragraphs of analytic discourse more than other
writers do. Eleven of the thirteen writers in the study
used a subtopic sentence at least once. The purpose of
this study is simply to point out the various kinds and
uses of macropropositions in analytic discourse.

The presence of a second macroproposition in a
paragraph does not necessarily signal the existence of a
subtopic sentence in a paragraph of analytic writing. The
second macroproposition may be the topic sentence for the
paragraph while the first one, on a higher level of
abstraction, may be a major topic sentence for a chunk of
text or even a global theme for the entire discourse. Such
higher level macropropositions in analytic discourse are

presented in the next chapter. Right now I shall turn my

attention to another use of topic sentences in analytic

discourse.

Divided-Paragraphs

I mentioned in Chapter Two that researchers had

noticed instances when two or more paragraphs are used in

developing one topic sentence. Since I also found examples

of this, I decided to present examples of this kind of

paragraphing.

Any time a researcher finds something that has not

been named previously, it has to be given a name so it can

be easily discussed and referred to. From what little

previous experience I have had, I knew that a new name

seems to work best if it is descriptive of the item being

named and if the words used are already well known. The

previously unnamed structure seems to be instances where

writers apparently have written a structural paragraph, but

divided it into two or more visual paragraphs. I decided to

call these units divided-paragraphs. As I already

mentioned, a third use of topic sentences made by writers

is in divided-paragraph blocs. In the first example, an

experiment and its application were divided.

(A.1) Reconstituted whipped potatoes were used [as an INDEX of the effect of holding the food for 60 minutes at 82 degrees C (179 F)] with a relative humidity of 50 percent. Actual serving conditions may require holding food much longer or under even less ideal circumstances. The whipped potatoes product used was enriched with vitamin C. But within the 60 minute period the potatoes had lost 36.2 percent of their vitamin C content.

(B.1) It is important to recognize that holding food does result in loss of nutrients. So does food processing. For more details read *The Health Letter* Volume XX, No. 8, How Food Processing Affects Nutritional Values (Lamb, "Food" 6-3).

Obviously, this bloc of text could have been a single paragraph had the writer not chosen to divide it.

In the next example of a divided-paragraph, the writer's rationale for dividing it seems more apparent as each paragraph refers to a different spokesman.

(T.1) [Other FACTORS that stimulate remodeling] are additions of new departments, new

competition opening down the street and

residential growth in the area, comments G. Boyd

Sempel, construction manager, Pay Less Drug

Stores.

(U.1) In addition to the previously

mentioned factors probably the position of the

store in question in the market place has the

largest influence, says Fred Meyer's Ketch. "We

know how to make the store more effective, but

how much money we spend to accomplish this

recognizes existing and upcoming competition."

(V.1) The executive of the large general

merchandise chain who declines to be identified

says the following factors determine the

allocation of dollars for remodeling projects:

- strategic and marketing objectives,

- availability of capital,

- anticipated performance improvement and

  ROI [return on investment] as a result

  of the remodels ("Remodels" 28).

Writers could have a variety of reasons for dividing

paragraphs. A rather common one seems to be simply to

break up a paragraph that is quite long, so it doesn't look so forbidding to readers.

Except for being divided, divided-paragraph blocs have the same traits as structural paragraphs. A topic sentence appears at or near the beginning. It contains a focus category phrase that limits the passage and usually indicates how it will be developed. Subsequent sentences add related ideas, facts, and details. As in structural paragraphs, the number of sentences used in divided-paragraph blocs vary from two to twelve and occasionally more. The usual length, though, is four or five sentences.

Another way that divided-paragraphs are similar to structural paragraphs is that they may contain subtopic sentences. In the following example, Morrow has put the topic sentence in a paragraph by itself; halfway down in the next paragraph is a subtopic to the main one.

(J.1) Now I should like to tell [of an ASPECT of John Dewey's thinking about consciousness] which has been similarly neglected.

(K.1) As an undergraduate in the 1920s I was fortunate enough to come into contact with Sidney Hook, Dewey's pupil, whom Dewey names one of his

literary executors. As a result, I went on to

graduate work in philosophy at Columbia, but

found that Dewey was just retiring....The point

of this story is that for some forty years, I

thought I knew Dewey and [his IDEAS on

consciousness]. I would not have believed

possible that there was a major influence on

Dewey and a long intellectual interest that I did

not know about....(Morrow 73).

It appears that the topic sentence might have been

separated from the rest of the paragraph to emphasize it,

for the paragraph that follows is a clear development of

the focus category phrase in it. Then within the paragraph

following the sentence with the focus category phrase in

it, a subtopic sentence contrasts with what he originally

thought, so it seems logical. The subtopic sentence that

introduces Dewey's change in thinking is followed by three

long sentences that explain what caused the change.

Another type of divided-paragraph is where an ending

sentence serves as a conclusion of the first paragraph, but

it also acts as a topic sentence for the second paragraph.

(G.1) By the end of the 1950s, there were

signs that foreign policy assumptions had adapted

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[to the apparently irreversible CHANGES of 1939-
45]. Certainly, the pre-eminent strengths of the
United States and the Soviet Union, by comparison
with the enfeeblement of victors and vanquished
in Europe and eastern Asia, were universally
acknowledged...Nor need they yet have been, given
for instance, Britain's remaining presence in the
Gulf or France's continuing influence in Africa.
Uncertainty in that regard persisted, however,
only in the shadow of certainty that war had
conferred [a new and higher ORDER of
international status on two superpowers].

(H.1) The two were not yet seen as even
roughly commensurate. The prevailing assumption
of 1959, in Moscow as much as elsewhere, was that
the United States had a strategic and economic
reach with which the Soviet Union could not
globally compete, even if it might do so
regionally in Europe and parts of Asia....(Smart
253-54).

The last sentence of paragraph G contains a conclusion to
its contents. However, to explain it more fully the writer
starts a new paragraph using this sentence as its topic

sentence. This is evident in that sentence H.1 refers to the "two superpowers" talked about in sentence G.9.

Two writers of the study, Morrow and Smart, sometimes used this type of paragraphing. Christensen has also noticed this use of topic sentences on occasion (29). The result is that together the two paragraphs make up a divided-paragraph bloc. As I've just shown, some uses of topic sentences are more complex than others.

Although other researchers have casually mentioned that a topic sentence sometimes relates to more than one paragraph, they have not studied the structures that result from this use. I think that perhaps structural paragraphs have more and more been divided into more than one paragraph for a variety of reasons, until now it seems appropriate to acknowledge these as divided-paragraphs whose structure and development are the same as that of a structural paragraph in analytic writing.

Paragraphs of One or Two Sentences

By taking 13 articles, chosen randomly, for my research study, I was not able to pick and choose what types of paragraphs I wanted to consider in reaching my conclusions about focus category phrases in the topic sentences of paragraphs. Besides, I was looking for how

these are used to help organize analytic writing.

Therefore, I ran into some components of discourse that I did not expect. One group of items that I found was a large number of one-sentence paragraphs contained in the body of my research articles. Of the total 360 paragraphs in my research sample, I counted 61 one-sentence paragraphs, 17 percent of the total. This was too large an amount to ignore and not account for in some way. Since one-sentence paragraphs obviously do not seem to be long enough to be typical structural paragraphs, the question became, "How do one-sentence paragraphs fit into the passages of analytic writing where they appear?" Eventually I found the answer, but I will discuss this a little later.

Another unexpected component I noticed was a large group of two-sentence paragraphs. I found 78 in all, an additional 22 percent of the total. Together one and two-sentence paragraphs are a third of the total number. I decided this was probably not a fluke of this research study because Braddock found that "more than a fourth," 28 percent, of all the paragraphs presenting simple topic sentences contained fewer than four T-units (clauses)(321). In excluding these in assessing his results, he did not speculate why the paragraphs were so short. However,

earlier in the essays upon which he based his research, he had noticed two or more paragraphs developed from one topic sentence (321). Therefore, it is reasonable to conclude that some of his short paragraphs may have been part of divided-paragraphs.

Two-Sentence Paragraphs. I asked the same question about the two-sentence paragraphs I had of the others in the research sample, "Did they start with a topic sentence?" Half of them obviously did not, but the other half contained a sentence with a possible focus category phrase. This was one reason why they seemed to be like longer paragraphs developed from a topic sentence. A second reason is that the next sentence expanded upon or commented upon it. Here are a couple of typical examples.

(X.1) The company's executives also became aware that their pricing needed [a more rational BASIS]. They wrote their own IBM program for accurate cost quotations and included specification options that would provide the sales force with optimum flexibility in offering clients alternative estimates ("Image" 58).

(F.1) James believed that these lay mental healers were helping sufferers by reaching parts

of the mind other than the ordinary

consciousness; James connected this healing [with

the great DISCOVERY] by the psychical researcher,

F. W. H. Myers, [of the subliminal mind] (the

term is Myers'), which is far vaster than that of

the conscious mind.... (James qtd. in Morrow 71-

2).

Obviously, just the length of this last paragraph, as well

as the amount of information in it, makes it appear that

the paragraph is complete. This last paragraph also

illustrates the third reason why some of the two-sentence

paragraphs are correctly classified as structural

paragraphs. The large amount of information given in a

long, complex second sentence is developed within the scope

of the topic sentence before it. Also many times the

information might have been put in two or more sentences

but was not.

The fourth and deciding reason why I classified these

this way was because cohesive devices stem from the topic

sentences. In the next example, the cohesive ties in the

second sentence are simple lexical reiteration of the words

"research" and "bibliographical." I have underlined these

words.

(F.1) Research in the bibliographical sense

is [the TOPIC of numerous books and articles

describing "how-to-do-it]." Often this kind of

work is called "library research," a practice

which causes confusion between research done in

libraries (bibliographical) and research about

libraries which falls into our third category,

scientific research (Lynch 368).

In another instance, besides the repetition of "Pakistan,"

cohesion by reference occurs when "they" refers back to

"restrictions."

(GG.1)   [RESTRICTIONS on aid to Pakistan]

were imposed in 1979 because of that country's

determination to build a nuclear bomb. In 1981,

they were waived for six years to bolster support

of neighboring Pakistan in the wake of the

Soviets' 1979 occupation of Afghanistan (1981

Almanac qtd. in Felton and Glennon 767).

In this last example, the cohesive ties are provided in the

categorical relationships, as "antiviral products" is

subordinate to "treatments," and "interferon" is

subordinate to "antiviral products."

(C.1)   There are [other promising TREATMENTS]. With the development of new antiviral products, such as interferon, some of these might effectively rid the area of wart viruses and eliminate recurrent warts (Lamb, "Warts," 6-3).

Even though they are short, two-sentence structural paragraphs may function much the same as longer paragraphs.

These three examples seem typical of many two-sentence paragraphs. A writer wants to add a little information for the reader to consider but has no reason to develop it more extensively. Yet most of the two-sentence paragraphs with topic sentences were actually the beginning of a longer divided-paragraph.

One-Sentence Paragraphs. Three articles of the research sample were composed with many one- and two-sentence paragraphs. Each of these three articles used divided-paragraphs differently, so I will discuss two of them briefly.

Sometimes an organizational pattern established for a particular article may aid the reader in identifying divided paragraphs. For example, in the article "Crisis Solved," from the *National Lampoon*, each suggestion for a

new program for the Canadian Broadcasting Corporation (CBC)

was set apart as a new section by extra space and a bold

face title. Each section functioned as a unit that could

have been a structural paragraph, but the writers broke the

unit into one- and two-sentence paragraphs. Here the

example I give is one such section. The divided-paragraph

is arranged to show its hierarchical structure with the

cohesive devices it uses:

    1 (HH.1) <u>Lanny McJunkins, Time</u> Traveler. Adventure.

       (one half hour; weekly) Canadian scientists in

       Nukewaste, Ontario, have invented a <u>time</u> machine,

       and now they need a human guinea pig [*to TEST it*].

    2 (II.1) Enter <u>Lanny McJunkins</u>, fair-haired

       superstar center for the Edmonton Oilers.

      3 (JJ.1) Wayne Gretzky is <u>Lanny McJunkins, Time</u>

        Traveler, the man whom scientists hurled back in

        <u>time</u>, but can't retrieve.

       4 (JJ.2) Every week, <u>Lanny</u> appears at the scene

         of a historical disaster and tries to avert

         it.

        5 (KK.1) In the premiere episode, <u>McJunkins</u>

          lands on the deck of the S. S. Titanic...

          (Pomerantz and Forman 20).

Altogether, this short section contains five paragraphs with a total of eight sentences. Yet it functions as one structural paragraph might. All the details in it relate to the focus category phrase [*to TEST it*], the experimental time machine introduced in the topic sentence "HH.1". Among other ways, the paragraphs are tied together by the cohesive device of lexical reiteration of the words "time" and "Lanny McJunkins," or part of his name, in each sentence of the paragraph. Therefore, the frequent paragraphing seems to be a stylistic choice by the writers.

In another article, "Market Research Lays the Foundation," the writer has developed two different organizational patterns that create divided-paragraphs. One practice is to ask a question in the first paragraph, and then to answer it in the following one. Each paragraph may be only one sentence. Another practice, when different people have responded to the same question of an informal poll, is to put each respondent's answer in a separate paragraph. The example given here, divided paragraph Y-EE, comes from near the end of the article. This divided-paragraph bloc, part of which is given here, is a total of eight sentences. One by one, executives of companies

answer "how," i.e., give the criteria by which, "their

chains determine how much money to spend on a new store."

2 (Y.1) Finally, <u>executives</u> were asked [HOW their

chains determined how much money to spend on a new

store].

3 (Z.1) Estimated volume and knowing the ROI [return

on investment] wanted determines this as well as

the rent, says <u>Morris Cleverly</u>, director-design

and construction of the Syracuse, N.Y.-based Fay's

Drugs.

3 (AA.1) It would be based on potential sales volume

and least expense, says <u>Genovese's DiLollo</u>. . .

("Market Research" 28).

Here each paragraph is only one or two sentences long. In

addition, the writer uses cohesive devices in the

paragraph.

Furthermore, the writer has unified the divided-

paragraph in two ways. The first is a semantic

relationship in that every answer refers in some way to an

implied criterion used in the focus category phrase: "how

much money to spend on a new store." The second one is a

lexical cohesive device based on items in a category, as

each paragraph specifically names another "executive," the

category introduced in the first sentence. Thus the names have a subordinate relationship to "executive." It is this relationship that makes cohesive ties.

Sometimes, though, no organizational pattern is obvious throughout a discourse. Then the reader has to judge whether or not each short paragraph of one or two sentences is part of a divided-paragraph. This is true of many paragraphs in the article, "Senate Panel Divided on Central American Aid."

With one exception, all of the one-sentence paragraphs in the articles of the research study are an integral part of some divided-paragraph bloc. Of these, 19 of the one-sentence paragraphs served as topic sentences for the divided-paragraphs. Set apart like this, they also tended to act somewhat like a subhead to the information that follows. Some one-sentence paragraphs are conclusions to a section of discourse. The other one-sentence paragraphs fit into their divided paragraphs in the usual variety of ways that sentences fit within paragraphs. The boundaries of the divided-paragraphs, however, are not always clear. The guidelines I have suggested for use in deciding whether or not a passage contains a divided-paragraph bloc may be

useful, but I doubt that they cover all situations as so many variations are possible.

Comparison of Structural Paragraphs and Divided-Paragraphs

My conclusion from this research is that the key difference between divided-paragraphs and structural paragraphs is the way they are visually paragraphed. In the research articles I found 230 structural paragraphs and 51 divided-paragraphs. The structural paragraphs in a discourse are always a single unit while the divided-paragraphs consist of two to seven paragraphs. The majority of the divided-paragraphs I found were two-paragraph units.

In analytic discourse, structural paragraphs and divided-paragraphs are alike in many ways. A topic sentence appeared at or near the beginning of each paragraph or divided-paragraph. It was developed by elaboration of the focus category phrase introduced in the topic sentence. Additionally, cohesive devices provided ties among the sentences of the paragraphs and divided-paragraphs in a similar manner. In conclusion I found that structural paragraphs and divided-paragraphs are far more alike than they are different.

My perusal of the research sample shows a variety of paragraphing patterns. I would like to make two general observations about these. One of the more important observations I have made is that all the information in the 13 articles is put in either structural paragraphs or divided-paragraphs. I found only one exception:

(Y.1)   [Additional WAYS of generating leads for the sales force and broadening State Printing's market exposure] are regular attendance at trade shows and a consistent direct mail and media advertising program-information brochures, letters, and bulletins that reinforce State Printing's image as a high-quality, service-oriented company ("New Image" 60-1).

The facts given here do not fit with either the preceding paragraph or the one that follows. The information in this one sentence paragraph could easily have been put in a two- or three- sentence paragraph, yet the way it is presented is clear and concise. Therefore, in tabulating structural paragraphs, I counted this as one. I consider this simply another allowable anomaly in the paragraphing of analytic discourse. (See Table 1.)

Table 1. Kinds of Paragraphs

Title	Total	Structural	Divided	No T.S.
The Adopted Image	29	23	3	3
Bar Smarts	21	13	4	4
Central American Aid	37	20	6	11
Crisis Solved	38	7	11	20
...Marketing Expenditures	27	21	3	3
Market Research	36	8	9	19
New Image	34	26	4	4
New Treatment	3	3	0	0
...Party Support in Ireland	25	25	0	0
Research and Librarianship	49	40	4	5
Rubber Rafting. . .	27	20	3	4
The Taxpayers' Litany of Complaints	6	6	0	0
William James . . .	28	18	4	6
TOTAL	360	230	51	79

My second observation is that paragraph practices in the research sample vary considerably from article to article. Three writers used all structural paragraphs. Another six used only one or two divided-paragraphs. The majority of the divided paragraphs were used by the three writers whose work I discussed earlier. However, both

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structural paragraphs and divided paragraph blocs fit into the hierarchical structure of analytic discourse. Quite possibly the use of divided-paragraphs and short paragraphs that I found in this sample is not consistent with the amount of their use generally. This could only be determined by looking at considerably more articles in a research study.

What is germane to the purpose of this study is that another important use of focus category phrases in topic sentences is in divided-paragraphs. Knowing this gives writers who were unaware of their existence another element to use with metacognitive awareness in constructing analytic discourse.

Connections to Research by Others

There are connections of this research study to other research in the areas where the researchers have found similar information about topic sentences in analytic discourse. Bain and Christensen imply that the use of topic sentences in exposition is fairly common, while Braddock finds that roughly half of the paragraphs in the essays he analyzed contain some kind of topic sentence (320). On the other hand, I found three-fourths of the

paragraphs that I analyzed had topic sentences, as I have shown in Table 1.

I found 230 structured paragraphs and 51 divided-paragraph blocs starting with topic sentences. Therefore the total of paragraphs with topic sentences is 281 out of a total of 360 paragraphs in the 13 articles of the research sample. So 78% percent of the paragraphs started with topic sentences. This includes two-sentence paragraphs and one-sentence paragraphs that contain a topic sentence for the beginning of a divided-paragraph bloc. Braddock did not consider either of these. As a result his study cannot be fairly compared with this one.

Another finding of the researchers that agrees with this study is that a topic sentence appears most frequently at or near the beginning of a paragraph, but it may sometimes appear in other places. Occasionally, a concluding sentence of one paragraph acts as the topic sentence of the following paragraph.

Finally, although they do not identify them, Bain, Christensen, and Braddock use examples of topic sentences that contain focus category phrases. In the following examples of topic sentences taken from their writings, I

have marked what I consider to be the focus category
phrases that appear within them.

> (a) The Government of Britain, called a mixed
> government, and sometimes a limited monarchy,
> is formed [by a COMBINATION of the three
> regular species of government] (Bain 108).
>
> (b) It is worthwhile to analyze [the INFLUENCE of
> the world which is the right arm of
> conformity] (Help qtd. in Bain 111).
>
> (c) Science as we know it indeed is [a CREATION
> of the last 300 years] (Brownowski qtd. in
> Christensen (27).
>
> (d) The mythical artist always sees PATTERNS
> (Hamilton qtd. in Christensen 29).
>
> (e) At the same time, a bill was pending in
> Congress [to tighten REGULATION of the
> rapidly expanding mail-order business in
> guns] (Drew qtd. in Braddock 316).

A perusal of the different examples Bain and Christensen
give in their research shows that they all have focus
category phrases in the topic sentences they use as
examples. In spite of different approaches, basically they
are identifying the same sentences as topic sentences. None

of the researchers have claimed that all paragraphs start
with a topic sentence.

Summary of Focus Category Phrases in
Topic Sentences

I want to highlight certain findings about the ways
focus category phrases are used in the topic sentences of
analytic discourse. First, I have shown that focus
category phrases are used in topic sentences. Furthermore,
I have shown that writers use them (1) in the topic
sentences of paragraphs, (2) in subtopic sentences within
paragraphs and (3) in the topic sentences of divided-
paragraphs.

I defined a divided-paragraph as two or more
paragraphs whose construction and meaning stem from a
single topic sentence. I have also shown that all 13 of the
writers in my research sample use topic sentences, 11 of
them also use subtopic sentences, and 10 use divided-
paragraphs. Clearly, all these features are part of
analytic writing. The focus category phrases in topic
sentences are the root from which the paragraphs and short
passages of analytic writing are developed. They help give

structural paragraphs and divided-paragraphs direction,

cohesion, and unity.

CHAPTER FOUR

MACROPROPOSITIONS IN THE HIERARCHICAL

MACROSTRUCTURES OF ANALYTIC DISCOURSE

Malleable, interchangeable, yet intact and unique, a hierarchical structure is the outgrowth of forming and supporting a major concept in an analytic discourse. The hierarchical macrostructure of an analytic discourse is formed by the focus category phrases in the macropropositions a writer uses in presenting a major concept about a topic. As Flower concludes, "Experienced writers pull the hierarchical organization out of a topic rather than trying to fit the topic into a given frame" (*Problem-Solving* 87). In other words, wise writers do not force a discourse to fit into a preconceived hierarchical format; instead, they let the hierarchical structure of an analytic discourse form itself as they arrange the details and ideas they have gathered to produce a meaning that serves a rhetorical purpose.

The underlying hierarchical structure of an analytic discourse, formed by the head words of all its focus category phrases, appears in paragraphs. Yet a skillful reader usually can identify the higher level

macropropositions such as the global theme and subthemes that start the formation of the hierarchy and from there trace how the rest of the structure is formed. This is illustrated by the following example of "The Taxpayers' Litany of Complaints." All the macropropositions of the short article are listed. This is followed by an explanation of how each focus category phrase contributes to its hierarchical structure. The sketch of the structure, given next, shows its configuration.

In this example, the writer starts the hierarchical structure with the first sentence where he announces his theme in the first focus category phrase. Next he divides the discourse into two sections based on the source of the complaints being received: one from Conservatives and the other from fishermen.

Title: The Taxpayers' Litany of Complaints

(macropropositions of entire discourse)

1 (A.1) After federal Revenue Minister Pierre Bussieres refused to have a parliamentary committee investigate [widespread COMPLAINTS over Revenue Canada's methods of collecting taxes], (global theme)

2 (A.1) Brian Mulroney's Opposition Conservatives decided in early February [to hold their own public HEARINGS.] (subtheme)

2 (A.4) At the same time, [a new tax CONTROVERSY] developed as a result of Revenue Canada's treatment of Newfoundland fishermen. (subtheme)

3 (B.1) Throughout Atlantic Canada [COMPLAINTS of unfair and inconsistent practices by Revenue Canada officials] echoed those that the task force heard in Ontario earlier this month. (topic sentence)

4 (C.1) A recurring complaint revolves around [Revenue Canada's POLICY of demanding payment of tax assessments before they can be appealed.] (topic sentence)

3 (D.1) Last week Bussieres faced [opposition QUESTIONS in Parliament about a report written by St. John's lawyer William Rowe about a widespread audit of the province's fishermen].(topic sentence)

4 (E.1) [More EVIDENCE of the difficulties fishermen have encountered with Revenue

Canada] turned up before the Tory task force when John Boland, business agent in Nova Scotia for the Fishermen, Food, and Allied Workers Union, described reassessments in 1982 of several Nova Scotia scallop fishermen's taxes.(topic sentence)

2 (F.1) The Conservative task force will wind up its hearings March 29 after traveling across the country, and Beatty hopes to have [a REPORT written by April] (Clugston 21). (concluding sentence related to the subtheme of A.1)

In the global theme A.1, the writer introduces the fact that "...Bussieres refused to...investigate [widespread COMPLAINTS over Revenue Canada's methods of collecting taxes]." He divides this into two subthemes: In the rest of sentence A.1, he states as the first subtheme that Conservatives decided ["to hold their own public HEARINGS"]. He announced a second subtheme in A.4 of the first paragraph. It includes the focus category phrase that ["a new tax CONTROVERSY"] involves Newfoundland fishermen.

Next the writer starts the second paragraph by discussing the matter introduced as the first subtheme, that of ["...public HEARINGS".]   The focus category phrase of the topic sentence in paragraph B shows that the writer is going to characterize the "complaints" as the results of "unfair and inconsistent practices."   Then in paragraph C, he further develops this idea by stating in the topic sentence that he will specifically discuss the "recurring complaint" of ["Revenue Canada's POLICY of demanding paying of tax assessments before they can be appealed"].   The indentation, of course, shows that this topic sentence was on a lower level of abstraction than the previous one, as it has an example of a specific complaint.   The development of the first subtheme is briefly shown on the left side of Figure 9 on the next page.

A
1 widespread COMPLAINTS over Revenue Canada's
  method of collecting taxes

A
2 a new tax CONTROVERSY [over]. . .
  Revenue Canada's treatment
  of Newfoundland fishermen

D
3 More EVIDENCE of
  the difficulties
  fishermen have
  encountered with
  Revenue Canada
  turned up last week

D
3 Bussieres faced
  opposition QUESTIONS
  in Parliament about a
  report . . .of a wide-spread
  audit of fishermen

5 Conservative task force
  will . . . have a REPORT
  written by April

A
2 Conservatives. . .
  hold . . . HEARINGS

B
3 complaints of unfair &
  inconsistent PRACTICES

C
4 recurring complaint
  revolving around . . .
  POLICY of demanding
  payment . . . before . . .
  appealed

Key: Numbers refer to levels of abstraction on hierarchical structure. Letters refer
to the place of paragraphs containing the information in the article. Underlined
words are from focus category phrases. Lines show relationships among items.

Figure 9. Hierarchical Sketch of "The Taxpayers' Litany of
  Complaints"

Next the writer turns to his second subtheme of ["a new tax CONTROVERSY"] related to "fishermen." The reference to "fishermen" is a clue to the fact that the writer is starting to discuss the second subtheme. He further develops this theme in paragraphs D and E. The focus category phrase for D is ["opposition QUESTIONS...about a widespread audit of the province's fishermen"], while in paragraph E the focus is on ["More EVIDENCE of the difficulties fishermen..."]. This paragraph is developed by the use of some specific examples. The development of the second subtheme is shown on the right side of Figure 9. However, in the last paragraph F, the writer goes back to the first subtheme about the "Conservatives ...public hearings" and states that the hearings, which end March 29, will be followed by a written report. The last type of concluding sentence is not usual but also not unknown. More unusual in the research sample was the use of two macropropositions in one sentence as in 1 (A.1) and 2 (A.1). Yet one of the values of hierarchical structure is its ability to accommodate departures from the usual construction of a discourse.

The next example showing the uses of macropropositions, from the longest article in the research

sample, is divided by frequent subheads. Readers seem to be always reading a kind of mini discourse, for in a sense, each unit of an analytic discourse has its own structure, as all of them are developed hierarchically from some type of macroproposition. The next example also shows some ways subheads are used. In some instances a subhead is used in lieu of a macroproposition. I have labeled these as "essential subheads." What is given here are macropropositions from a portion of the discourse.

Notice that the portion given here is a subdivision that starts with a subhead acting like a subtitle acting as a major topic sentences when it is combined with the next. The first sentence Q.3 functions as a major topic sentence because the content of the topic sentences for the next four paragraphs stem from it in a subordinate sequence where reasons are given why more scientific research has not been done in the field of librarianship. Each topic sentence of these four paragraphs gives more details about the problem named in it.

Title: Research and Librarianship: [An Uneasy

Connection] (global theme)

2 [Historical PERSPECTIVES] (essential subhead)

3 (Q.3) Until the founding of the Graduate

Library School (GLS) at the University of
Chicago, [scientific research METHODOLOGY]
was not applied to librarianship. (major
topic sentence)

4 (R.1) [The INTRODUCTION of scientific
research into the field of librarianship]
was initiated in 1923 by Training for
Librarianship, Charles C. Williamson's
Carnegie-backed analysis of library
education programs. (topic sentence)

5 (S.2) A large part of the problem and
one that persists in some degree until
the present day, is [the LACK of
understanding in the library field as
to what is meant by "graduate work."]
(topic sentence)

6 (T.1) George Works left the GLS in a
few years, partly because it was very
difficult to·build [a graduate SCHOOL
of the character just described.]
(topic sentence)

7 (U.4) C. C. Williamson's Founder's
Day address at Western Reserve

University School of Library
Science in 1930 praises the results
of research in other fields,
complains that librarians neither
conduct nor support research as
they should and offers [two cogent
REASONS.] (topic sentence)

RELATIVES of Research (nonessential subhead)

3 (V.1) One reason for the uneasy connection
between scientific research and librarianship
is [the PROMINENCE of several activities that
can be considered close relatives of
scientific research.] (major topic sentence)

4 (V.3) Jackson noted that much early work of
a research-like character was largely
confined [to current FACT-GATHERING.]
(topic sentence)

4 (W.1) Another type of investigation related
to scientific research is [the "service
STUDY,"] a type of work done by students and
faculty at the GLS in the early days.
(topic sentence)

4 (X.1) The modern counterpart to the service

study is [the consultant REPORT.] (topic
sentence)

    5 (Y.1) Hewitt goes on to explain [WHY the
two types of study must not be confused
by funding agencies.] (topic sentence)

  4 (Z.1) A third close relative of scientific
research is [DEMONSTRATION AND
DEVELOPMENT.]

    5 (AA.1) I have just described kinds of
research which are not scientific but
are closely related to it, thereby
implying that it is [a simple MATTER to
separate one from the other] (Lynch
371-5). (topic sentence)

This last subdivision is not only developed from a major
topic sentence but also by a co-ordinate sequence as each
topic sentence, preceded by a 4, shows the same level of
abstraction as it names a type of research. Both
paragraphs X and Z are followed by additional paragraphs
stating why some confusion about this kind of research
exists. (See Appendix C.) The layout of macropropositions
in this manner not only shows the hierarchical structure of
a discourse, but it also shows that the generative

development of an entire analytic discourse may be similar to that of paragraphs.

The Uses of Macropropositions

Now that I have demonstrated how the macropropositions of an analytic discourse function in a longer sequence of text, I will analyze some ways the different kinds of macrpropositions are used in the various articles of the discourse sample. Specifically, I shall analyze the macropropositions that operate on higher levels of abstraction than topic sentences do. These are global themes, subthemes, and major topic sentences. It is the words of the focus category phrases within them that formulate the hierarchical organization and structure of analytic discourse. The different ways writers use these higher level macropropositions show to some extent how many choices they have in composing analytic discourse because, while the basic structure is a hierarchy, it is a very flexible one.

Global Themes

The macroproposition on the highest level of an analytic discourse is the global theme. The global theme is constructed in the same manner as all macropropositions. The only difference is that it covers a larger amount of

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discourse than the other macropropositions in the text of an analytic discourse. Because the global theme announces the topic and focus of a discourse, it is usually part of the introduction. Yet I have observed that the location of the global theme varies considerably from one discourse to another.

The global theme in some discourses is stated obviously at or near the beginning of a discourse. For example, after a general introductory statement, the writer of "New Image in the Old South" gives the global theme:

> Three years ago, the State Printing Company of Columbia, S. C., was a sleepy, mid-sized printer, doing a mixture of government and commercial printing work. In order to gear up for the predicted growth of the Sun Belt during the 1980s, State Printing decided [to CHANGE the direction the company was taking,] including its marketing strategy ("New Image..." 56).

This article is developed from the global theme ["to CHANGE the direction the company was taking"]. The writer continues by reporting that the company started making changes by talking to customers and identifying possible new markets in the private sector. After they identified

four possible new markets, they entered them by buying the

needed new machinery and training operators to use it.

They also expanded their plant to accommodate the expected

population growth in the area of Columbia, South Carolina.

Thus, the global theme relates to all of the discourse.

Another example is a research report which starts with

the global theme:

> This paper examines whether the results of the
>
> ADVISOR project (Lilien 1979) on the determinants
>
> of industrial marketing budgeting practices apply
>
> [to European PRODUCTS] (Lilien and Weinstein 46).

Additionally, in both of the research articles that are new

reports, the writers start with the global thme.

In three articles of my research sample, the global

theme is announced in the title:

> Research and Librarianship: [An Uneasy
>
> CONNECTION](Lynch 367)
>
> William James and John Dewey on Consciousness:
>
> [Suppressed WRITINGS] (Morrow 69)
>
> [New TREATMENT for Warts] (Lamb 6-3)

In the last example, the global theme is repeated in the

first sentence of the three-paragraph report. However, in

the other two examples, the global theme is not reiterated

within the discourse, although it is referred to near the end.

In some instances, I observed the global theme near the end of the introduction after a writer had started with a general topic and then progressively narrowed it down to the particular focus of the discourse. Notice in the example that follows that Hersh Foreman and Bob Pomerantz start with a problem and then suggest a solution to it. Their global theme lies within the solution. I am showing this by giving the macropropositions of the paragraphs leading up to the global theme of the discourse:

1 (A.1) The government-owned and -operated Canadian Broadcast Corporation (BBC) has progressed beyond its traditional identity crisis [to a full-fledged anxiety ATTACK.] (major topic sentence)

    2 (B.2) No matter how many well-intentioned tax dollars we plow into the ailing network, the "Ceeb" won't regain its rightful audience share-drawing viewers away from uncut American movies with their several swear words and everything-until it starts broadcasting [a competitive PRODUCT.] (topic sentence)

3 (C.1) The CBC must figure out [WHAT it does

best] and do more of it. (topic sentence)

    4 (D.1) Hockey is [Canada's national

    OBSESSION.] (topic sentence)

        5 (F.2) No, the All-Hockey Network needs,

        hockey quiz shows, hockey

        documentaries-needs [to DIVERSIFY]-

        with hockey sitcoms, hockey dramas

        (18).(global theme)

        (Pomerantz and Foreman 18-20)

From this global theme of the discourse, the writers make a

number of playful suggestions about possible programs. My

hierarchical sketch is shown in Appendix C.

    In a similar manner, Ian Smart starts the introduction

to his discourse "The Adopted Image" with a general

philosophical statement which he gradually narrows to focus

on the "hidden beliefs" that affected what diplomats said

about the world of the 1950s and how those "beliefs" have

changed in the 1980s. Therefore, it is not until the first

sentence of the fourth paragraph that Smart has laid the

foundation necessary for his readers to understand his

global theme:

If we really want to understand [HOW

international affairs have changed since the

1950s,] we must penetrate to the semi-conscious

level of conviction (252).

Then he explains how he plans to apply this global theme in

his discourse. With certain subjects, this approach seems

to be a logical one. After stating a global theme, writers

usually subdivide it into logical subthemes to start their

discourse.

Subthemes

Subthemes which head the sections into which a

discourse topic is divided, of course, stem from the major

concept presented in the global theme. As I mentioned

earlier, the macropropositions doing this evidently have

not been studied much by linguists. On the other hand, a

perusal of textbooks shows that students of writing have

routinely been advised to divide their discourse topics

logically into several related parts.

Since one of the identifiable traits of analytic

writing is the division of the topic into parts or

sections, it is not surprising that most sections start

with a macroproposition which may be called a subtheme. Of

the 13 articles in this research study, the topics of 12

were divided into sections. The exception was a three-paragraph, six-sentence report of a new medical treatment. The number of sections for the discourses varies from two to six. Four articles are divided into two sections, and five of them into three sections. I did not count the introduction as a separate section. Generally I view an introduction connected to a global theme as an umbrella over the other sections of a discourse.

In their article "Crisis Solved: CBC, NHL to Merge," Pomerantz and Forman make their suggestions for new TV programs on the basis of the subdivision of their discourse. They suggest six of them. In the hierarchical sketch of the article's structure, these appear just below the global theme.

Little Rink on the Prairie. Drama.

Battle of the Network Zambonis. Sports specials.

Shinny Clinic. Light entertainment.

The Wives of the Hartford Whalers. Adult drama.

The Game of Our Lives. Magazine.

Lanny McJunkins, Time Traveler. Adventure.

The example below is typical of how each subdivision was formatted.

6 Lanny McJunkins, [Time TRAVELER] Adventure
(Half hour weekly.) (essential subhead)

7 Canadian scientists in Nukewaste, Ontario,
have invented a <u>time</u> machine, and now they
need a human guinea pig [to TEST <u>it</u>.]
(subtheme)

The macroproposition of the first paragraph of this section
provides the subtheme for the four short paragraphs which
follow.

The analytic discourses divided into two sections are
either relatively short or the sections are subdivided. An
example of this may be found in a short article on remodels
and new stores that appeared in *Chain Store Age Executive*.
It is based on two questions asked in a poll prior to a
seminar:

(C.1) The chains were asked [HOW they determine
the amount of money to spend on new or remodeled
stores and WHAT sort of payback they expect]
(27). (global theme)

Then the article is divided between the answers that
pertain to remodels and those that pertain to new stores.
The next sentence acts as a subtheme as it starts the

discussion on "remodels." The writer gives this
information along with an answer to one of his questions:

> (E.1) A number of executives echo Anthony Vinci,
>
> president and coo...of Winkelman Stores, Detroit
>
> based women's apparel chain, who says [part of
>
> the FORMULA for determining how much money should
>
> be poured into a remodel] is based on how much it
>
> will take to bring it up to par as the newest
>
> store in the chain (27). (subtheme)

After a number of factors are listed as considerations for
"remodels," the writer introduces the second subtheme for
the second section of the article:

> (T.1) Finally, executives were asked [HOW their
>
> chains determined how much money to spend on a
>
> new store] (29). (subtheme)

Thus, this article was organized around two informal
questions asked at a convention.

Two longer articles were divided into sections that
were consequently subdivided into more parts in different
ways. For example, Ian Smart writes a discourse called "The
Adopted Image" in which he contrasts "beliefs" diplomats
had about the world in the 1950s with those they have in

the 1980s. He starts his discussion of the 1950s with this
subtheme:

>(D.8)   The fact remains that [the unspoken
>
>ASSUMPTIONS made in the world of the late 1950s]
>
>have not all withstood the test of subsequent
>
>experience (252). (subtheme)

Of course, he subdivides this section by naming the major
"assumptions" of that era. At the finish of this
discussion, Smart gives the subtheme of his second section.

>(S.1)   Without the benefit of hindsight, no two
>
>of us will agree [about the prevalent ASSUMPTIONS
>
>underlying international relations in 1984]
>
>(260).   (subtheme)

In this part of the discourse the writer looks at what
"assumptions" have changed.

In another instance, the title "William James and John
Dewey on Consciousness: Suppressed Writings" seems to
suggest that the discourse has two sections although
actually it has three. As a reader would expect from the
title, Felix Morrow divided his discourse of the first two
sections by the names James and Dewey. The first subtheme
appears as the fifth sentence of the article.

(A.5) Until I read that book, I had had no idea
that William James had written [so much and so
well on psychical RESEARCH;] that psychical
research had been one of the principal activities
of his life; and that he considered the
continuation of psychical research of central
importance for the understanding of human nature
(70). (subtheme)
After he completes this section, Morrow turns to his
discussion of Dewey.

(J.1) Now I should like to tell you [of an
ASPECT of John Dewey's thinking about
consciousness which has been similarly neglected]
(73). (subtheme)

After he finishes the section on Dewey, Morrow starts
a new paragraph with the introduction of the subtheme for
the third part of his discourse.

(U.1) In closing, I should like to venture to
pinpoint [WHAT the academic world found so
unpalatable in· William James's conclusions from
his work on psychical research] (77). (subtheme)
This third part probably does not take the reader totally
by surprise because in a long introduction to the

discourse, Morrow asks, "Why was I so ignorant of these facts" [about James's writing on psysical research]?

Logically, a reader might expect Morrow to write a fourth section to answer the question of "why" Dewey's writings on psychical research were also repressed. However, a fourth section was not needed because while the answer to "why" Dewey's writings were suppressed wouldn't be identical to that of "why" about James's writings were, it would likely be so similar, that it was unneeded. In sum, the plan for the discourse, while not wholly revealed at the start, is not hard to follow as each new section clearly starts with an identifiable subtheme.

Even though I can recall an occasional analytic discourse where a writer reveals a plan with labels for the sections during the introduction, that was not true of any of the articles in my research study. However, Mary Jo Lynch restated the global theme and sections she used for developing her discourse at the end. (See Appendix C.)

> (WW.1-2) The challenge is clear: [the CONNECTION between research and librarianship must be changed from one that is uneasy to one that is firm]. (global theme and conclusion) To do so, leaders in the field need to pay careful

attention to several factors: [to the numerous

MEANINGS of the word research and the different

WAYS each kind of research affect

librarianship] (subtheme), [to educational

PROGRAMS that develop an ability to understand

and conduct scientific research] (subtheme), [to

PUBLICATIONS and PROGRAMMING that discuss work in

progress and disseminating the final results]

(subtheme), to increasing the availability of

funding [not discussed in the article], and

finally, [to the INCORPORATION of a research

perspective into the way librarians think about

what they do] (subtheme) (38).

As a reader, I realized that I had read about all of the

"factors" Lynch said she considered, but I didn't really

gain a complete hierarchical image of her four sections

until I read the summary.

One reason I think I did not have a clear hierarchical

structure in mind until the end is that the subheads, given

equal value throughout the discourse, referred to both the

sections and subparts of them. Therefore, the subheads had

limited value in revealing the structure of the discourse.

Similarly, though, this was true to some extent of several

of the articles in the research study.

On the other hand, I found several articles in which

the subheads acted as reliable guides to the structure of

the discourse. One of these was the article on how a

merger of the CBC and NHL might work. The subheads clearly

indicate its six sections. In another, the article "The

Political Sociology of Party Support in Ireland," Ian

McAllister and Declan O'Connell use the subheads that act

as subthemes and provide a fairly good guide to its parts:

> Data, Measurements, and Methods (192)
>
> The Social Bases of Partisanship (193)
>
> The Regional Factor (198)
>
> Conclusion (200)

In this discourse the subheads acted as subthemes by

labeling the sections and were used in lieu of

macropropositions. The only subhead that did not indicate a

major section of the article was "The Regional Factor" as

it was subordinate to "The Social Bases of Partisanship."

A table of the "social bases" lists four of them: "social

position," "religion," "region," and "age" (194). From

these cues and others within the text, I made a sketch of

the hierarchical structure of the discourse. This shows

that the discourse has three sections with the middle one having four subcategories (Appendix E).

The analysis in the subthemes of the thirteen articles of the research sample reveals that while writers of analytic discourse divide a topic into a few sections, there is not a standard method of labeling them. In addition, although the macropropositions I have named subthemes are commonly used, a subhead may be used in lieu of a macroproposition. Finally, in this small sample of articles, the writers usually do not reveal a subtheme until they are ready to discuss it. Whether or not this is a common practice I am not sure, but I suspect it may be. In terms of the amount of text covered by a macroproposition, just below subthemes are major topic sentences.

Major Topic Sentences

Major topic sentences which head a chunk of related paragraphs in a discourse appear to be used different ways in different situations. A logical way is to head a subdivision of a section. Another way is to expand one point among several in a discussion. Both of these ways may be illustrated with examples from the articles in the research sample.

As one might expect, a major topic sentence may head a
subunit of a section of an analytic discourse. The section
may be divided into several such subunits. Within each
subunit will be paragraphs or divided-paragraphs or a
combination of these that have topic sentences which are
subordinate to the major topic sentences. The subunits may
be roughly about the same size, but not necessarily equal,
as it appears that what a writer has to say is of more
importance than an exact symmetry of the hierarchical
organization of a discourse.

The following example of a chunk of analytic discourse
headed by a major topic sentence comes from an article
titled "New Image in the Old South" (56). The section
about the development of a "new training program" was
subdivided into five chunks with the subheads "Customer
Training," "Personal Contacts," "Sales Staff," "Education,"
and "Pricing." The example given here shows the
macropropositions of one chunk:

Personal Contacts (nonessential subhead)

    4 (0.1) Technical expertise alone, however, is

       not enough. (transition)

   3 (0.2) [Personal CONTACTS] are vital to the

marketing plan and are being made by active

involvement in community, civic and trade

groups. (major topic sentence)

   4 (Q.1) An important aspect of State Printing's

   computer sales program is [its service

   ORIENTATION]. (topic sentence)

This chunk, which is typical, consists of three short

paragraphs. Paragraphs "O" and "P" are a divided-paragraph

developed from the major topic sentence. Paragraph "Q" is

closely related, but developed from its own topic sentence.

   The next example using a major topic sentence is also

a subdivision of a section of an article called "Bar

Smarts." It comes from a section where the subtheme says,

"...it's preferable to have a separate SETUP for the

bar..." (172).

Glass Act

   4 (E.1) A drink looks better and tastes better

   when served in a correct glass.

   [introduction]

  3 (E.2) There are [as many TYPES of glasses] as

   there are drinks, but a dozen of each of the

   following will see you through almost any

   situation: four-ounce stemmed cocktail glasses;

six-to-eight ounce solid, heavy bottomed old
fashioned glasses; eight-to-ten ounce highball
glasses; seven-ounce all purpose wine glasses.
(major topic sentence)

4 (E.3) If you do a house specialty that calls
   for a particular container-say a chimney
   glass, a saucer champagne glass or an
   elliptical stemmed shot glass-by all means,
   add it to the inventory.

   5 (E.4) Choose clear, well-balanced
      glassware; the cutesy tinted and patterned
      kind loses its charm quickly.

4 (F.1) [The INCLUSION of wine glasses] may
   surprise you, since they are not traditional
   to a spirits-bar setup. (topic sentence)

   5 (F.2) But they're versatile and useful
      for a variety of drinks: sours, marys,
      blender drinks, juice-spirit combinations,
      frappes and after-dinner brandy.

   5 (F.3) They also hold many cocktails more
      comfortably than the standard widemouthed
      cocktail glass.

5 (F.4) And additionally, there's a growing
popularity of white wine as a pre-prandial
sip, which naturally calls for a wineglass.

5 (G.1) Store glassware so the mouth is
uncovered, permitting soap or detergent
fumes to drift off.

6 (G.2) Don't stack in columns or inverted
on a shelf mouth down (Greenberg 175).

The chunk given here was preceded by one labeled "Pert
Appurtenances" in a subheading and followed by one labeled
"The Big Chill" (172, 175).

Another way major topic sentences are sometimes used
may be examined by looking at the portion of a text. In
this example there are three major topic sentences. The
last two are coordinate to each other but subordinate to
the first one. Each major topic sentence is followed by at
least one topic sentence. In other words, this is a series
of three chunks of discourse, each headed by a major topic
sentence. Each one is indicated by an asterisk in front.

6 RESULTS—Hypothesis II: Differences between
Individual Coefficients [nonessential subhead]

*7 (O.1) Our lack of ability to reject the
hypothesis of general overall structural

equivalence between the two samples does not mean

[that the IMPACT of each individual variable on

the respective budgeting equation is the same].

(major topic sentence)

8 (P.1) [A TEST for significant differences

between individual regression coefficients]

was proposed by Gujarati (1970). (topic

sentence)

*9 (Q.1) Table 4 displays [the pooled

marketing and advertising MODELS alongside

the MODELS that were respecified following

detection of significant differences

between coefficients in the individual

runs]. (major topic sentence)

10 (Q.2) [The COEFFICIENT for fraction of

sales made to order] was the only

variable in the marketing model showing

a significant difference for the two

models. (topic sentence)

*9 (R.1) For advertising budgets there are

[statistically significant DIFFERENCES

for the intercept, fraction of sales made

to order, and product plans]. (major

topic sentence)

10 (R.3) The fraction of sales made to order has [an EFFECT as in the marketing equation:] it reduces the amount of sensitivity in the advertising budget to the fraction of sales made to order in Europe. (topic sentence)

10 (S.1) The second difference we see is [for the NUMBER of users]. (topic sentence)

10 (T.1) The third significant difference is [in product PLANS]. (topic sentence)

7 (U.1) On net, our conclusions here cause us [to REJECT the second hypothesis of no significant differences between the U.S. and Europe] Lilien and Weinstein 50-1). (conclusion)

Thus, the use I have just demonstrated of major topic sentences heading a bloc of analytic discourse fits within a logical pattern.

However, major topic sentences are also sometimes used with a single short chunk of paragraphs within a segment of

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discourse that is otherwise developed with paragraphs. In
these instances, it appears that a writer feels a need to
develop more fully one aspect of a topic than other aspects
of it. Even though the chunk of paragraphs is denser in
terms of the information it carries compared to nearby
paragraphs, it usually fits smoothly into the rest of the
text. It seems somewhat like a granite rock within a group
of sandstones; unless an observer looks closely, the
difference in texture may not even be noticed.

To illustrate this use of major topic sentences, I
shall again use just the macropropositions of a portion of
text. In addition, I shall show the topic sentences of the
preceding and following paragraphs. The first example of a
major topic sentence in a chunk of discourse sandwiched
between the paragraphs of an analytic discourse comes from
"Rubber Rafting Western Rivers - Yesterday and Today."

> 5 (E.4) Going back before the Second World War,
> [row BOATS of various types with airtight
> compartments] were preferred for river
> running. (topic sentence)
>
> 6 (F.1) Though it is little known, this mythic
> past of American river running overlaps [the

CONSTRUCTION and USE of the first rubber

rafts.] (major topic sentence)

7 (F.2) [Early raft MODELS] were designed in

1837 by John MacIntosh of New York.   (topic

sentence)

7 (G.1) [Raft DESIGNS for military use as

well as civilian use] proliferated during

the next twenty years. (topic sentence)

7 (H.1) [Using rubber rafts as life BOATS]

also became more popular in the

midnineteenth century. (topic sentence)

8 (I.1) Were any of these early boats *ever*

[USED for running the Western rivers]

(Skafte 28)? (topic sentence)

Here the chunk acts like a flashback giving some history of

rafts used in running rivers, the topic of the discourse.

This section was preceded by raising a question about "the

first people to run a [western] river in a rubber raft"

(26). The writer answers that rafters after World War II,

as many believed, were not the first. He follows this

statement by a quick review of three historical expeditions

of the 1800s who used various kinds of boats, not made of

rubber. Then the writer digresses to this discussion of

the history of the manufacture of rubber rafts. After

that, he reveals that the first rubber rafts were used in

John Charles Fremont's 1842 expedition in the Rocky

Mountains.

The next example, from a discourse titled "William

James and John Dewey on Consciousness: Suppressed

Writings," shows a chunk of discourse sandwiched between

the paragraph that introduces the third section of the

discourse and three short paragraphs at the end. This

passage is preceded by a discussion of John Dewey's

association with the psychic researcher F. M. Alexander.

Then in paragraph U, the writer reintroduces James's

connections with psychic research which he had discussed

earlier. Instead of stating in paragraph U that most

academics at that time did not accept the conclusions of

psychic research as legitimate science, the writer

digresses in the four paragraphs, V-Z, to discuss two

specific conclusions of James most people consider

uncomfortable and unorthodox.

> 2 (U.1) In closing, I should like to venture [to
>
> pinpoint WHAT the academic world found so
>
> unpalatable in William James's conclusions from
>
> his work on psychical research]. (subtheme)

3 (V.1) As for the professing Christians, they found no comfort when James, in his *Varieties of Religious Experience*, went beyond naturalism [to avow a BELIEF in something divine]. (major topic sentence)

4 (X.1) [These "higher ENERGIES]," James makes clear, are divine. (topic sentence)

4 (W.1) James ends the *Varieties* [with the THOUGHT] that has only sometimes been uttered by Gnostics, never by any orthodoxy, [that God needs our help:] (topic sentence)

4 (Z.1) So James leaves us [with the IDEA], which cannot but be most bewildering to most people, [that there is a cosmic environment of consciousness], a mother-sea or reservoir of consciousness, out of which ordinary consciousness is crystallized, and of which God is only a finite part. (topic sentence)

5 (AA.1) That, I think, is [WHY James's ideas about consciousness arising out of his work in psychical research, have

been ignored and suppressed by those in

academia who are ostensibly teaching

the ideas of William James] (Morrow 77-

8). (conclusion and topic sentence)

After this passage, in the next and last paragraph of the

article, the writer states that James's unorthodox ideas

are now becoming more generally acceptable, so he hopes

that Harvard will publish what James wrote on the subject.

In both examples the chunks appear to fit within the flow

of the discourse even though the writers enlarge on one

idea more than they do the adjoining ones.

On the basis of the small sample of articles for my

research study, it appears that chunks headed by major

topic sentences may be used fairly often in analytic

discourse. Ten of the 13 writers of this study included at

least two chunks in their discourses. The articles where

they didn't appear were short and were on only a few levels

of abstraction. (See Table 2.)

Table 2. Kinds of Macropropositions

Title of Article	Global Theme	Sub-theme	Major Topic Sentence	Topic Sen- tence	Subtopic Sentence	Conclu- sion
The Adopted Image	1	2	8	18	7	3
Bar Smarts	1	3	1	14	4	0
Central American Aid	1	2	3	20	1	0
Crisis Solved	1	6	1	14	0	0
...Marketing Expenditures	1	3	8	18	5	3
Market Research	1	2	2	11	0	0
New Image	1	4	4	23	0	2
New Treatment...	1	0	0	3	0	0
...Party Support in Ireland	1	3	5	18	8	5
Research and Librarian- ship	1	4	7	32	5	1
Rubber Rafting...	1	3	3	18	6	1
The Taxpayers' Litany...	1	2	0	4	0	0
William James...	1	3	5	16	9	1
TOTAL	13	37	47	79	45	16

The brief observations that I have made about the uses
of major topic sentences for chunks of information in an
analytic discourse are merely descriptive. I suspect that
writers use chunks headed by major topic sentences without

much awareness, especially when one is the sole chunk within a group of single paragraphs. When writers use them as subunits of a section, they act somewhat like miniature discourses within a larger one.

Concluding Sentences

Concluding sentences in analytic discourse are usually structured like macropropositions, but they function somewhat differently from most of them. Also only seven of the 13 writers of my research study used them. Therefore, it is evident that conclusions in analytic discourse may be used by writers, but they are not an essential element of it My primary reason for including them is that they contain a concept acting as a focus category phrase that is supported by related details. However, instead of the details being developed from a general concept in the macroproposition at the beginning of a structural discourse unit, they add up to form the concluding concept given at the end.

Only five writers in the research articles put a conclusion to their discourse at or near the end. The other eight writers put conclusions to a specific unit in an article rather than using a general one at the end.

In the discourse "The Adopted Image: Assumptions about International Relations," Smart's purpose seems to be to present the facts and rationale for the conclusion he reaches at the end. In the last part of the paragraph, he reviews the fact that in terms of power "only two nations occupy the first rank" [the U.S. and the Soviet Union] (266). However, he goes on to say that between the 1950s and the 1980s, the situation has become more complex as different kinds of strengths have been recognized. He writes, "As a result, the power of the world's states can no longer be measured on any single scale; influence and assessment depend on circumstances" (266). Then in the last two sentences of his article, he concludes:

> (CC.7) In the shadows between analysis and intuition, it is finally therefore [the IMAGE of power that has evolved most strikingly in the last 25 years]. Or so, intuitively, it seems (266). (conclusion)

In this instance, the writer put his supporting summary of information before the last two concluding sentences.

In the next example, the writer puts her conclusion at the beginning of the concluding paragraph and summarizes the supporting ideas for this already fully discussed in

her article. In reaching a conclusion, Lynch refers to her

title, "Research and Librarianship: An Uneasy Connection:"

> (WW.3) The challenge is clear: the connection
>
> between librarianship and research must be
>
> changed [from ONE that is uneasy to one that is
>
> firm] (381). (conclusion and topic sentence of
>
> concluding paragraph)

Lynch finishes by briefly reiterating the major points she

made to reach this conclusion to her discourse. These are

that research related to librarianship needs to be

precisely defined, then taught and done with the final

results disseminated in ALA publications.

The writers of the two formal research reports in the

research sample ended with concluding paragraphs. In each

instance, the macroproposition that started the paragraph

served as a topic sentence for it but also served as a

conclusion to the whole discourse. McAllister and

O'Connell ended by saying the joint application of two

models from previous researches provided valuable

information:

> (Y.1) Acting as complementary explanations, the
>
> Lipset and Rokkan and Sartori models thus [had
>
> greater POTENTIAL in permitting us to understand

the evolution of the Irish party system]. (201).

(conclusion and topic sentence of the last

paragraph)

The writers, thus, stated their conclusion to the research

and enlarged upon it some.

The writers of the second formal research report

compare certain marketing practices between the United

States and Western Europe. Lilien and Weinstein also write

a brief concluding paragraph:

(BB.1-4) An objective of this research has been

to determine whether significant differences in

the determinants of industrial marketing

budgeting behavior exist between Europe and the

United States. We conclude that there appear to

be [a small number of strategic FACTORS that

influence budgeting behavior in the United States

as well as in Europe and that spending

DIFFERENCES probably stem largely from different

circumstances]. The identification and

measurement of the impact of these factors is a

step toward developing a general, quantitative

understanding of and guidance for industrial

marketing decision making (52).

Thus, the writers ended not only with a formal conclusion to their research study but also with a brief comment on the overall value of it.

In this study, I also found a few instances when writers used conclusions for small units of text within an analytic discourse. For example, Lilien and Weinstein wrote a conclusion to one segment of their research:

> (N.4) We therefore cannot reject the null hypothesis [of general overall structural EQUIVALENCE between the United States and the European budgeting processes] (50). (conclusion)

The writers of the other research report also gave some conclusions to particular aspects of their subject before presenting their overall results.

Writers appear to have several reasons for writing a concluding macroproposition for a subunit of an analytic discourse. As I just illustrated, a conclusion might be written for one strand of a multi-strand research project. Two writers presented ideas leading to a conclusion on which they based the rest of their discourse. For example, Pomerantz and Foreman conclude that the Canadian Broadcasting Corporation (CBC) might increase their audience by changing the format of the programs they

present to audiences. However, I found only three of the 13 writers wrote conclusions for chunks of analytic discourse, so this appears to be an acceptable practice but perhaps not a common one.

Distribution of Macropropositions

Again, generally macropropositions are at or near the beginning of each unit of a discourse. Therefore writers may place a macroproposition for a larger unit of a discourse at the start of a paragraph and then follow it by a topic sentence for the immediate one:

> 3 (V.1) One reason for the uneasy connection between research and librarianship is [the PROMINENCE of several activities that can be considered close relatives of scientific research]. (major topic sentence)

> 4 (V.3) Jackson noted that much early work of a research-like character was "largely confined [to current FACT-GATHERING] (Lynch 373). (topic sentence)

The major topic sentence (V.1) covers the chunk of six paragraphs (V-AA) which explains and discusses four "close relatives of scientific research" (373). Each of the relatives is explained with a topic sentence in a

subsequent paragraph or two. However, the topic sentence
(V.3) applies only to the balance of that paragraph which
explains the value of "[...FACT-GATHERING]" to librarians
even when it does not meet the criteria of scientific
research (373).

A slight variation in the arrangement of the
macropropositions appears in the next example where the
writer continues telling about the main stops on Fremont's
expedition through the West.

> 4 (M.1) The explorers continued west through
> South Pass in Wyoming and climbed [to the TOP
> of what is now called Pike's Peak]. (topic
> sentence)
>
> 3 (M.4) On their return trip, the party prepared
> [to SURVEY the North Platte River] (Skafte 31-
> 2). (major topic sentence)

In paragraph M, sentences 1-3 explain how the members of
the expedition climbed Pike's Peak and planted a flag on
top. This seems to have been the last major stop of the
outward journey.

Subsequently, the macroproposition M.4 starts the
account of the "return trip" with a "survey [of] the North
Platte River" (32). This is followed by a chunk of seven

paragraphs describing this survey. Included in the description are three long paragraphs from a journal kept by Preuss during the expedition. This section ends when the writer says that he drove to the location along the North Platte that was described in the journal. The indention of M.4 to the left of M.1 shows that the macroproposition M.4 is on a higher level of abstraction than M.1. This is because the "return trip" is on a higher level of abstraction than merely climbing Pike's Peak on the outward part of it.

In addition to higher level macropropositions, a paragraph may also contain lower level macropropositions known as subtopic sentences. Therefore, occasionally a paragraph has three or four macropropositions within it:

> 4 (W.1) The rehabilitation of nationalism in the West, combined with the emergence of new and self-consciously developing states, has accelerated [the EROSION], initiated by other forces, [of an even older international belief: the assumed natural hierarchy of general power]. (major topic sentence)
>
> 5 (W.2) That assumption, which contributed so much to the beliefs of the 1950s, has [fallen

to attack from several DIRECTIONS]. (topic
sentence)

6 (W.3) Many of these, once taken to be
natural client-states, [have REFUSED the
role of client-states]. (subtopic
sentence)

6 (W.7) Meanwhile the conviction that a few
nations are endowed [with omniconfident
STRENGTH for any task lies in ruins on the
battlefields] (Smart 262). (subtopic
sentence)

The macroproposition W.1 is a major topic sentence because
it starts a seven-paragraph bloc in which several of the
"other forces" are named and explained in paragraphs of
their own. In contrast, W.2 is a topic sentence because it
only relates to the rest of the paragraph it is in.

However, in this long paragraph, two beliefs of the
1950s that have "[fallen to attack from several
DIRECTIONS]" are included. These are both named in
subtopic sentences. W.3 states that one belief is that
some nations "[have REFUSED the role of client-states]."
This is further explained in sentences 4, 5, and 6.

Then in W.7 the fallen belief that any nation is endowed "[with omniconfident STRENGTH...]" is introduced. The results of this happening are explained in the next seven sentences. This is a long paragraph of 14 sentences. Logically, W.7 might have started a new paragraph. Thus it would appear that both the nature of a topic and a writer's style might affect the number of macropropositions that appear in a paragraph.

Because both macropropositions on a higher or lower level of abstraction tend to be placed in paragraphs controlled by a topic sentence, the number of macropropositions in an analytic discourse is almost always more than the sum of its structural paragraphs and divided-paragraph blocs. In other words, while in analytic discourse all paragraphs and divided-paragraphs have at least one macroproposition, they may have more. On the basis of the few articles in this study, it appears that the ways writers use the different kinds of macropropositions in the hierarchical macrostructes in analytic discourse vary to some extent. As I illustrated in the last chapter, the structures of analytic discourse are held together by various kinds of devices. I now turn

to examining these as they apply to all of the hierarchical macrostructures of an analytic discourse.

Cohesive Devices Within an Analytical Discourse

Anyone who has ever played blocks with a baby knows that the height of a tower will be limited and fall down at the touch of a finger unless the blocks are somehow firmly connected to one another. It is also true that while the hierarchical frame of an analytic discourse gives it shape, other devices tape it firmly together. I partly addressed this matter in chapter three. I discussed how cohesive ties interlock sentences in an analytic discourse, but what binds the topic sentences to the paragraphs on either side of them? They are joined together by three different methods. One method is by the same cohesive devices that tie two sentences together. The second method for tying paragraphs together is by employing the same cohesive devices with the topic sentences of adjoining paragraphs. The third method is by means of a lexical chain that runs through all the topic sentences providing a type of global lexical cohesion.

Cohesion Between Paragraphs

In the first method of joining paragraphs, the same cohesive devices that bind sentences together in a paragraph are used to tie two paragraphs together. This is done by joining the last sentence of one paragraph to the first sentence of the paragraph next to it. The most common cohesive devices are lexical ties, made by repeating important words, synonyms of them, or using a word that relates to one in a preceding sentence (Stotsky 440). In the example, I have given the last sentence of a paragraph and the first two sentences of the next one. Notice the underlined words which appears in all three sentences:

> (R.8) Even unopened, their shelf life is limited compared with those spirits and stronger <u>liquors</u>.
>
> (S.1) [A complete INVENTORY of all your <u>liquor</u>] can be a time saver and useful when planning parties or new purchases. And a lazy Susan inside your <u>liquor</u> cabinet holding the most popular items will make them easy to reach (Greenberg 176).

Even though the word "liquor" is being used in three different ways, the repetition of it provides cohesion

between the two paragraphs, giving the passage cohesion by means of lexical reiteration.

Another way of achieving a cohesive tie between sentences occurs when a word in one sentence refers to a different word in the previous sentence. This is known as cohesion by reference (Halliday and Hasan 211). When this type of lexical tie is used, the meaning of the second word can only be understood by referring back to what has already been said.

> (Z.4) There is a heavy emphasis...on demonstration and development (seeking how to get things done better) rather than on basic research. Fitzgibbons comments on this problem in the article on research.
>
> Three kinds of studies have just been described which are not scientific research but are closely related to it, thereby implying it's [a simple MATTER to separate one from the other.] That is not really true and researchers often differ as to what a particular piece of work should be called (Lynch 374).

Here the demonstrative pronouns "this" and "that" make cohesive ties by referring back to material in the previous

sentences. In the second sentence, "this problem" refers to "a heavy emphasis...on demonstration and development" in sentence one, and "that" in sentence four refers to "a simple matter..." in sentence three. Further cohesion is formed by lexical reiteration of "research" and its derivative "researchers." The cohesive devices among the three sentences operate the same ways they would if a new paragraph had not been started.

In the following example, look for cohesion made by reference and by reiteration of a word:

> (G.8) In 1853 the artist H.B. Mollhausen was present to record the crossing of the Colorado River in an inflatable <u>raft</u> during Lieutenant Amiel Whipple's survey for the Pacific railroad.
>
> [Using rubber <u>RAFTS</u> as life boats] also became more popular in the mid nineteenth century. <u>One</u> of the best known of these early <u>models</u> was made by Charles Goodyear who won a medal for his self-inflated <u>raft</u> in 1851 (Skafte 28).

In all three sentences, "raft" provides simple lexical cohesion by reiteration. At the start of sentence three, "one" adds more cohesion by referring back to and acting as

a substitute for "rafts" in the previous sentence. The word "models" adds more cohesion since it is a subordinate classification for "rafts." I could show other examples of cohesion by reference, but enough is given here to show how they help integrate topic sentences into texts.

Another way for showing the relationship between two parts of a discourse is by the use of words called "transitions." When a transition is used, it is the relationship that provides a cohesive tie. In the following example, "although" is the transition signaling the tie:

> (W.2) ...the term "service study" meant assistance provided by GLS faculty and students to practitioners who were trying to solve problems in their institutions.

> The modern counterpart to the service study is [the consultant REPORT]. Although financial aspects are quite different, the contrast with research is similar. Joe Hewitt has analyzed the differences (Lynch 373).

Starting sentence three, "although" is an adversative transition showing a contrary relationship between the "money paid for a consultant report" and "for a service

study." Notice also the ties made by lexical reiteration of "service study" and the derivative of "differences" from "different."

To show the relationship between the last sentence of a paragraph and the topic sentence of the next paragraph, a transition may be embedded at the start of the topic sentence:

> (D.5) Morgan...complained about the "Gestapo-like tactics" the department used in its audit of the fishing industry.
>
> (E.1) More evidence of the difficulties fishermen have encountered with Revenue Canada...when John Boland, business agent in Nova Scotia for the Fishermen, Food, and Allied Workers' Union, described [REASSESSMENTS in 1982 of several scallop fishermen's taxes]. Revenue Canada, he said, wanted quick payment of sums up to $5,000 and "gave very little consideration to individual problems" (Clugston 21).

The introductory clause starting the new paragraph starts with "more" which provides an additive transition between paragraphs D and F. "More evidence of difficulties" refers to other evidence introduced earlier.

Further cohesion is provided by the derivative relationship between "fishing" and "fishermen," and by the relationship between "department" and "Revenue Canada" as the latter item fits within the category "department." Still more cohesion is achieved by the collocational relationship between "audit," "taxes," and "payment." Cohesion by collocation occurs when items are frequently found together in a particular setting.

Cohesive ties may also exist between sentences and subheads, as the next passage illustrates:

> (I.14) Spear smaller edible garnishes - olive, onion, cherry on a pick before placing in a drink. They're easier to handle that way.
>
> MIXERS, MODIFIERS, EMBELLISHERS
>
> (J.1) [The standard MIXERS] include club water from a bottle or a siphon, tonic water, ginger ale...or sour mixers. You'll also want tomato juice or V-8 for bloody marys, bouillon for bull shots...(Greenberg 175).

A lexical tie exists between the nearly synonymous words "garnishes" in the first sentence and "embellishers" in the subhead. It is also a mediated tie because a sentence is in between them. Sentence two has only one tie, the

pronoun "they" referring to "garnishes." Sentences three and four are joined together because both sentences contain items that fit into the category "mixers" given in sentence three.

In conclusion, these examples show that topic sentences in paragraphs are connected to the previous paragraphs by the same kinds of cohesive ties that connect sentences within a paragraph. Now I will look at ties among more than two adjoining paragraphs.

Cohesion Among Topic Sentences

The second method used to bind the topic sentences of paragraphs together in a discourse is by the cohesive ties topic sentences give to paragraphs on both sides of them. Halliday and Hasan would call these remote ties, since there are several intervening sentences between them (Halliday and Hasan 330). They did not identify this type of tie among the topic sentences of a discourse, but there does seem to be one. To show this, I will start by putting several sequential topic sentences together. What is given below are the topic sentences of adjoining paragraphs. Each paragraph is indicated by a letter that shows its place in the text.

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(G.1) Comparatively, many scholars have been
unable to fit [Irish POLITICS] into any general
scheme.

(H.1) The findings contradict the view that
the three main Irish political parties lack
[distinct social BASES.]

(J.1) Overall, these findings, suggest that
the Irish parties do possess [distinct social
BASES among different occupational, religious,
and regional groups].

(I.1) The results indicate [that support for
Fianna Fail is strongly associated with church
attending Catholics] (McAllister and O'Connell
193-95)

The main cohesive tie among the topic sentences is "Irish"
in paragraphs G, H, and I. However, paragraph I also has a
lexical tie to the other paragraphs because "political" in
paragraph G is a derivative of "politic" in paragraph H.
Then in paragraph I, "Fianna Fail" also fits that category
of a "political party." Furthermore, "overall," starting
paragraph I, acts as an additive transition and summary;
the tie is in the relationship that it has to all the

information contained in the paragraphs represented by
their topic sentences.

The next example is a group of topic sentences that
come from an article titled "An International Comparison of
the Determinants of Industrial Marketing Expenditures." I
have included a subtopic sentence in the first paragraph,
as it's necessary to the explanation which follows the
passage.

(Q.1) For advertising budgets there are
[statistically significant DIFFERENCES for the
intercept and [for number of users], [fraction of
sales made to order], and [product plans]. (Q.2)
[The DIFFERENCE in the intercept] is small.

(R.1) The second difference we see is [for
the NUMBER of users.]

(S.1) The third difference we see is [in
product PLANS.]

(T.1) On net, our conclusions here cause us
to reject [the second hypothesis of no
significant differences between the U.S. and
Europe] (Lilien and Weinstein 51-2).
The obvious cohesive tie in this passage is the reiteration
of "differences" in all the topic sentences. Also notice

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in paragraph Q, lexical reiteration of the word "intercept" between the topic sentence and the next sentence, between "number of users" in paragraphs Q and R, and between "product plans" in paragraphs Q and S.

Since the topic sentence of paragraph Q acts as a major topic sentence for the whole section, the subtopic sentence Q.2 acts as the topic sentence for paragraph Q. The words "second," "third," and "on net" provide additional cohesion as items in an ordered series (Stotsky 440). Then the phrase "on net" acts as a resultative transition for this passage similar to the way "overall" did in the previous one. Cohesive ties may also extend through longer passages.

The final example showing cohesive ties among topic sentences comes from a theoretical essay about international relations. Here I have given the topic sentences and subtopic sentences of the first five paragraphs; then I skip to the last four paragraphs.

(A.1) No one doubts [that WHAT men believe colours how they speak and act].

(B.1) [The RELATION between creed and action] operates everywhere and not least in the international arena, at different levels of

visibility and awareness. (B.2) <u>For</u> below the
level of full awareness, there lie [the roots of
<u>assumptions</u> about the very nature of the
environment to which conscious <u>creeds</u> refer].

(C.1) Someone, on behalf of his community or
nation, only asserts [a <u>CLAIM</u> supported by
equally overt evidence of the right of power].

(D.2) <u>If</u> we really want to understand how
<u>international</u> affairs have <u>changed</u> since the
1950s, we must penetrate [to that semiconscious
LEVEL of <u>conviction</u>].

(E.1) With so broad a canvas, selection,
however revealing, is inevitable. (introductory
sentence.)

(E.2) <u>But</u> [one <u>ALTERATION</u> in the mood of the
world] is so.obvious it selects itself. (E.11)
<u>However</u> sharp the recollection, the genesis,
course and aftermath of the second World War no
longer generate [the same <u>PRECEPTS</u> by which
<u>international</u> behaviour is large guided .]

.   .   .   .

(Z.1) The new mobility in East-West
relations is symptomatic of much else that has

changed in a quarter of a century. (sentence of transition.)

(Z.2) Current assumptions can encompass without difficulty a situation in which different levels or transactions within the E-W relationship, or even relations in different geographical arenas, are [CHARACTERIZED at the moment by quite different moods and rules.]

(AA.1) One indication of the change has been [ACCEPTANCE of the right to avoid political alignment], without prejudicing economic, or even military cooperation.

(BB.1-3 is an introductory statement.)

(BB.4) In the end, it is impossible to avoid [the CONCLUSION that underlying assumptions have changed] at least as considerably as explicit policies, and more considerably than rhetoric. (BB.9) And what is more significant is that they all relate [to an even more fundamental CHANGE in assumptions about the international nature of power].

(CC.7) In the shadows between analysis and intuition, it is finally therefore [the IMAGE of

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power] that has evolved most strikingly in these
last 25 years. Or so it seems (Smart 251-53,
264-6). (conclusion)

In the passages above, a number of different devices form
cohesive ties among the topic sentences of the paragraph.
Among them are some transitions showing changes of
relationships among the ideas being presented.

Since the writer is discussing "changes" that have
occurred, he indicates the reasons they took place, partly
by using causal transitions. He used "for" between B.5 and
C.1 and "if" between C.1 and D.1. Coming at the end,
"therefore" between BB.9 and CC.7 is also a causal
transition, as it related to the end result of the ideas
and events the writer had already discussed.

The writer used other transitions to show other kinds
of relationships among his ideas. He shows exception to the
"unspoken assumptions" by using the adversative transition
"but" between D.1 and E.2, and "however," between E.2 and
E.11. Later, between AA and BB is the temporal transition,
"in the end," indicating when the writer reached his
conclusion.

However, in these passages on international relations,
the kinds of cohesion I see the most are lexical chains of

reiterated words or their synonyms or near synonyms. The
most persistent one starts with "believe" (A), "creed" (B),
"claim" (C), "conviction" (D), "assumptions" (D), and
"precepts" (E); it is picked up again in the passage at the
end: "assumptions" (Z, BB). Another chain uses some near
synonyms and some words in a subclass to them. It starts
in the second paragraph: "international" (B), "nation" (C),
"international" (D), "world" (E), "international" (E); then
at the end, "geographical arenas" (Z) and "international"
(BB).

Finally, although not as frequent, is the idea of
"change" introduced in D.2 which is carried both by
reiteration of the term and synonyms of it. E.2 continues
the idea of change with the synonym "evolved." Toward the
end, this idea is in AA.1 and BB.9 as "change" and in CC.7
as "evolved." This is important because the whole focus of
the discourse is on "what has changed" in international
relations between the 1950s and 1980s.

In view of these lexical chains, I asked myself a
logical question, "Does such a lexical chain, running
though all the topic sentences of the article, provide a
kind of global cohesion of the discourse topic?" The
answer is "yes," but not in every paragraph. In the chain

starting with "believe," seven paragraphs of the 29 were left out of the chain. Yet the skips (F, H, K, L, Q, T, and V) are not so great that they are likely to break the chain formed in the readers' minds. This lexical chain may be said to flow throughout the discourse.

Global Cohesion

The possibility of lexical chains providing some global cohesion warranted investigation of them in other articles. After compiling and analyzing all the topic sentences from the news story, "The Taxpayers' Litany of Complaints," I found two lexical chains running through it. One chain reiterates "Revenue Canada" four times in the topic sentences of the six paragraph story. In paragraph A the name "Bussieres" refers to "the minister of Revenue Canada;" it also forms a remote tie to the same name in paragraph D. In the last paragraph, the cohesive tie is an elliptical one because it is clear that the "report" being written by Rowe will be about "complaints" against the "practices of Revenue Canada." (See Fig. 14.)

The second chain carries the new information about the related words as follows: "unfair practices" (B) and "reassessments" (E) are subordinate to the category "complaints" introduced in paragraph A. On the other hand,

the word "report" (D, F) becomes superordinate as a

category for "complaints." All these words are part of a

set, and the lexical chains formed from the topic sentences

of the articles are a method of achieving global cohesion.

(Bussieres is the minister of Revenue Canada). This process

is illustrated in Figure 10.

A	Bussieres	Revenue Canada	complaints
B		Revenue Canada	unfair practices
C		Revenue Canada	report, critical
D	Bussieres		
E		Revenue Canada	reassessments
F		[Revenue Canada]	report [on complaints]

Figure 10. Lexical Chains in "The Taxpayers' Litany
          of Complaints"

Next I turned to a longer discourse, "New Image in the

Old South," which appears in *Graphic Arts Monthly* (56-60).

Here I found several lexical chains of various lengths.

Again I found two lexical chains running throughout. (See

Figure 11.) The first chain was related to the old

information, the company's name - "State Printing." In the

chain, it is also referred to by the synonyms and near

synonyms of "company" (B, D, X, EE, GG), "corporate" (W),

"firm" (T) and "plant" (Z, AA, DD). Most of the cohesive

ties are in the topic sentences of adjacent paragraphs, but in three instances a paragraph with no tie is in between, and in one instance two paragraphs are in between them.

The second chain, Figure 11, which tells how State Printing developed and carried out a new marketing plan, contains new information. Some form of "market" is used all through the lexical chain except in two places. In C, "analysis [of markets]" is an elliptical tie; and in Z, "pricing" refers to a part of the "marketing plan."

	New Image in the Old South		
	Lexical Chain of Cohesion		

Key: All words appear in macropropositions. The capitals down the left side refer to paragraphs where they appear. Head words from focus category phrases are in capitals.

A		State Printing	marketing strategy
B		company	marketing PROGRAM
C	growth		ANALYSIS [of market]
D	growth	company	
E	growing	State Printing	MARKET
F		State Printing	
G			marketing plan
H	increased	State Printing	market
I	sales force		market
J		State Printing	
K		companies	
L	customers		
M	customers		
N		State Printing	
O	CONTACTS		marketing plan
P			
Q	sales prog.	State Printing	
R	sales staff		
S	sales staff	State Printing	
T	salesmen	firm	
U	sales force		
V	salesmen		REVIEW & AMEND
W			marketing plan
X		company's	pricing (of plan)
Y			
Z	sales force		marketing plan
AA			
BB		State Printing	
CC			
DD			
EE	growth	company	marketing
FF		State Printing	marketing
GG		company	marketing plan
HH	GROWTH	State Printing Co.	

Figure 11. Lexical Chains in "New Image in the Old South"

Shorter chains referring to sections of the article are also evident. The chain on the right, starting with "opportunities," refers to the management's study of the market to identify areas where they believed that an opportunity for increased business could exist. They found some "opportunities" if the company would buy some new equipment not generally available in their region. Below "opportunities" is the word "automation," one of the ways the company decided growth could occur. Underneath "automation," which acts as a category, are items of equipment that are automated. A fourth chain on the chart at the top left side starts with "growth." At the top, the word represents goals; at the bottom, it represents the goals that were reached.

Halfway down the chart is a lexical chain stemming from the word "sales" which is related to a section in the article on how the sales staff was upgraded and encouraged to make new contacts. Near the bottom is a chain based on the word "new," relating to the section of the article that explains how the company built a "new plant" and purchased "new equipment" and brought in "new pressmen" to run it. I also observed that the longest gap in the "State Printing" chain spanning the article was filled by the sectional

lexical chain on "sales." Thus together, the chains extend throughout the article. Again, I concluded that topic sentences may carry a kind of semantic global cohesion.

In the two examples I give here, the chains spanning the articles had many common elements with the topical progression in them, but they were not completely identical. Clearly "Revenue Canada" and the "complaints" against it are the topic of the article in "The Taxpayers' Litany of Complaints." However, the topic is carried into the last paragraph only by the implication that the "report" being written will summarize the "complaints" against "Revenue Canada." In the other article, "New Image in the Old South," the macropropositions convey much of both the topical progression and the global lexical chain concurrently, but there are small sections where they digress. In some instances, the topic "State Printing" appears in a sentence adjacent to the topic sentence. At other times, digressions are made to a subtopic sentence.

Furthermore, much of the topical structure as well as the hierarchical structure of an analytic discourse may be carried within its macropropositions. It appears that other words in the macropropositions act as a bridge between the topical and hierarchical structures of a

discourse. In general, the topical structures carry the old or given information of a discourse topic while new information is introduced in its hierarchical structure. Obviously, both the topical and hierarchical lexical chains carried in the macropropositions of analytic discourse enhance its global cohesion.

In summary, from the results of this study of global cohesion, I have reached three tentative conclusions. The first is that the same cohesive devices that tie sentences together within a paragraph also tie adjoining paragraphs together. My second conclusion is that the macropropositions of a discourse are usually cohesive to those on either side of them. The third conclusion is that a large percentage of the topical and hierarchical structures are carried through the macropropositions of a discourse by lexical chains that represent each one. Furthermore, most macropropositions contain words referring to both the topical and hierarchical structures with the words in between acting as a bridge. Apparently global cohesion in an analytic discourse is a combination of topical structure, hierarchical structure, and global lexical chains.

Summary of Research Findings

As I end, I return to the multifaceted thesis of this
research report: focus category phrases in
macropropositions form the hierarchical structure of a
global concept in analytic discourse. Now I shall briefly
review the main facets of the thesis.

The primary facet of the thesis is that the formation
of a concept, expressed in a hierarchical structure, is
embedded into analytic discourse by the focus category
phrases in macropropositions. The concept, based on a group
of related items, is formed by someone inductively
abstracting some traits these items have in common, drawing
a conclusion about them, and then arranging the information
in a hierarchy. Like snowflakes, while each concept has
the same parts, the number of them varies and they may be
arranged in different patterns. As a result, each concept
forms a hierarchical structure that meets its specific
requirements. Consequently, hierarchical structures for
analytic discourse tend to be asymmetrical and uneven at
the bottom. Furthermore, large major concepts are built
upon many lesser concepts.

The second facet of this thesis is that a writer
composes an analytic discourse to explain the main concept

within its global theme. To do this, the writer uses a deductive process and divides the main concept of a chosen topic into the parts of the hierarchical structure that built it. As each part of the concept is discussed, the writer starts with a macroproposition usually containing three elements: identification of a general topic, a limited concept acting as a focus category phrase from within it, and the verb that connects the two. The macroproposition containing one specific concept written for a paragraph is a topic sentence.

To write a structural paragraph, a writer starts with a topic sentence. Then the writer generates propositions by explaining in detail the items from which the concept was built and shows the relationships among them. Together they form the structural paragraph in which the propositions are in a subordinate relationship to the macroproposition and in subordinate or coordinate relationships to each other.

To a large extent, the size of an analytic discourse is determined by the size of the concept being explained. For a small concept, built from a few items, the discourse may be simply one structural paragraph. For a large concept, built upon lesser concepts, a writer customarily

develops the categories in the topic sentences of structural paragraphs or divided-paragraph blocs and arranges the paragraphs in a meaningful hierarchical structure. In analytic discourse, all the units within it are hierarchical structures representing concepts.

The hierarchical structure of an analytic discourse, where a major concept is being discussed, is formed by the focus category phrases within its macropropositions. Thus, the hierarchical sketch usually features many of the focus category phrases found in a discourse. Therefore, the macropropositions give a semantic gist of the discourse's meaning. Most of the new information in the discourse resides in the hierarchy formed by the concepts in the macropropositions.

Since a hierarchical structure represents different levels of abstraction that are reflected in the macropropositions of an analytic discourse, it is helpful to classify and name them according to the amount of text they control. The macroproposition at the top of the hierarchical structure of an analytic discourse is known as the global theme. The topic of the discourse is subsequently divided into a few sections that are developed from a subtheme for each section. On still a lower level

of abstraction, major topic sentences for a chunk of closely-related paragraphs may be found. These tend to exist mainly in longer texts.

The most frequently used macroproposition is the topic sentence which heads all the structural paragraphs and divided-paragraph blocs in an analytic discourse. Occasionally some paragraphs also contain a subtopic sentence. Additionally in some discourses, concluding sentences may be found for either all of it or part of it. Other kinds of macropropositions not identified here may exist, but these seem to be the most commonly used in analytic writing. The macropropositions provide most of the global cohesion for a discourse.

Still a third facet of the thesis of this research report is related to the global cohesion of analytic discourse. As was already mentioned, one is the hierarchical structure of the major concept embedded into its macropropositions. Another kind of cohesion is provided by the topical structure of the text. Much of this is given in the first part of the macropropositions.

A third kind of cohesion seems to be provided by lexical chains that flow throughout the discourse. This kind of chain was studied in only three articles of the

research sample. However in each example, one chain -
while not identical to the topical structure - picked up a
large number of the words that appear in it. A second
chain - in a similar manner - picked up many words from the
hierarchical structure, which tends to represent the new
information or focus of the discourse. In addition,
shorter lexical chains ran through different subsections of
the discourse. Both the topical structure and hierarchical
structure of an analytic discourse are carried to a large
extent in the macropropositions of a discourse; therefore
words between them in the macropropositions act as a bridge
between the two types of structures they make as an
analytical discourse is composed.

The study of a small sampling of 13 articles using
analytical discourse limits what conclusions may be drawn
from it. Even then, they are mostly tentative conclusions.
Firm conclusions about many of the ones I suggest can only
be reached by applying this knowledge to many more examples
of analytic discourse. This is particularly true about the
types of macropropositions that go into the hierarchical
structures of analytic discourse. Furthermore, the
relationship between analytic structure and meaning is
evident but not well understood. This, too, might provide

a fruitful area for additional research. Another area to study might be the possibility that focus category phrases in the macropropositions that form the hierarchical structure of a discourse provide a way to study how information flows throughout it. Undoubtedly, other areas also remain for additional research on the structure of concepts in analytic discourse. After all, the information presented in this report simply adds to what others had discovered about the very complex processes of communication.

Observations for Teachers

Analytic discourse is widely used to explain many subjects about the world in which we live. Therefore, literate people read and write analytic discourse well. This also means that teachers need specifically to teach students how to read and write it.

Because this report is about focus category phrases in the macropropositions that form the hierarchical structures in analytic discourse, one obvious conclusion might be that students should be taught to identify and to use these structures. What appears to be a more valid conclusion, though, is that teaching the hierarchical structures of analytic discourse is not desirable. Students should be

taught to read the discourses only for their meaning.

Smith states, "[There is] no evidence that making these

implicit structures explicit improves comprehension....

Children learn the structures by being helped to understand

the texts" (43).

Increasing evidence, on the other hand, shows that

teaching student writers to fit their discourse into a

hierarchical structure is harmful. For example, writing

teachers have found that teaching students to adapt a topic

to fit into the structure of the five-paragraph essay does

not produce pleasing discourse. In his article, "Fostering

Composing Pre-K and Beyond—Avoiding the Artificial Nature

of Writing and Teaching," R. L. Thomas concludes that

having students "fill in false templates" does not develop

writers with ideas and linguistic command" (70). And

according to George Hillocks, Jr., "Teaching to state

assessment rubrics 'shuts down thinking'" (qtd. by Thomas

71).

In other words, the structure of a discourse should

exist in the same way the structure of a building exists.

The structure within the outside walls clearly has an

influence on the building's configuration, but it is not

what the viewers see and use. Furthermore, the structure

of a building reflects the purposes for which it is built. Likewise, the meaning of a discourse should be more dominant than its underlying structure.

So if teaching students how to structure their discourse produces undesirable results, how might we better teach students to compose an analytic discourse that carries a viable meaning? We can start by remembering that the analytic discourse that explains most academic subjects deals with concepts. Since concepts are the result of categorizing concrete items and abstract ideas, we might start with teaching students how to recognize and then to produce categories that form concepts. Next we should teach them how to embed the focus category phrases expressing concepts into the macropropositions used in analytic discourse.

Consequently, the most valuable information in this report for teachers of writing may have to do with the structure of macropropositions. The identification of focus category phrases in them gives teachers definite information about the constituents (parts) of a macroproposition: a topic, a focus category phrase — which is usually a concept — and a verb. Other information may also be included.

Therefore, the logical place to start teaching

students analytic discourse is with paragraphs which need a

topic sentence. Over time, with students who were ready to

learn critical thinking skills, my teaching co-workers and

I have had success teaching students the constituents of

topic sentences and how to write them. Topic sentences, of

course, are for the smallest general unit in analytic

discourse, but the macropropositions for longer units are

constructed in the same manner.

Using this method, we found that most students learned

to write adequate topic sentences and support them with

relevant material in the subsequent sentences of the

paragraph. When this is done, the hierarchical structure

of a concept automatically forms itself, so students do not

need to be taught this. We almost never talked about

structure; rather we discussed how well the idea of the

focus category phrase was developed in subsequent

sentences.

This practice is consistent with what Thomas has

concluded is the way to correct the artificial writing

produced by structured rubrics. He suggests that teachers

should give students different instructions about writing:

Writing forms have some kind of coherence that
usually revolves around a beginning, a middle,
and an end, and is usually guided by some kind of
focus (71).

By introducing the idea of focus, teachers tell students
that they need to find a focus category phrase for the
facts they are discussing and put this in a
macroproposition that introduces any unit of an analytic
discourse. Furthermore, this also gives us — both teacher
and students — a metacognitive awareness of what we are
doing that makes it possible for us to discuss how to make
improvements in the analytic discourses being written.

APPENDIX A

ARTICLES USED FOR RESEARCH

ARTICLES USED FOR RESEARCH

Clugston, Michael. "The Taxpayers' Litany of Complaints."

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APPENDIX B

TOPIC SENTENCES BY STUDENT WRITERS

Topic Sentences by Student Writers

inadequate

1. Around 800 A.D., the Vikings in central England added Norse words to English.

2. The words "calico" and "tea" were brought into the English language by ships roaming the world.

3. The commercial language of London was considered correct English.

4. One dialect is different from another because words are pronounced differently.

5. The invention of the printing press led to the standardized spellings of English.

6. Germans, Vikings, and Normans got all mixed up together.

7. The English borrowed words like "physics" from the Greek language.

8. When the Normans conquered England, French and English words for animals were combined.

9. The history of the English language was divided into four periods, starting with Old English.

10. Over time, changes were made in the pronunciation of words like "fight" and "cake."

11. American English and British English are not alike because people in England speak faster.

12. For centuries, there was no English dictionary.

adequate

1. Some changes gradually happened to Middle English.

2. American English differs from British English in three major ways.

3. The start of the period of Middle English is set around 1066 because four major changes occurred.

4. Several different factors contributed to the growth of English.

5. Usually one dialect differs from another one in at least three ways.

6. The history of the English language is divided into four periods.

7. Here are some methods used to add new words to the English language.

8. The English language reflects the explorations of British ships around the world.

9. Over time, languages change for several reasons.

10. A combination of factors led to the beginning of the Modern English Period about 1500.

11. Two fortunate circumstances kept American English from being divided into dialects that could not be understood easily in other regions.

12. Over a period of 1000 years, different groups settled England, influencing the development of the English language.

APPENDIX C

HIERARCHICAL SKETCH OF "RESEARCH AND

LIBRARIANSHIP"

title
1 Research and Librarianship: An Uneasy CONNECTION

2 numerous MEANINGS of research & different WAYS each...affects librarianship

2 educational PROGRAMS develop ability to understand & conduct scientific research

2 PUBLICATIONS, PROGRAMMING ...[to] disseminate results

2 INCORPORATION of a research perspective [for librarians]

C 3 four general CATEGORIES [of research]

sh*Q 3 historical PERSPECTIVES

sh*V 3 RELATIVES of research

sh*BB 3 USES of research

sh*NN 3 professional ORG. & RESEARCH

sh*QQ 3 AGENCIES conduct research on libraries... info. services

sh*UU 3 need UNDER-STANDING info. & its uses [fr.] sci. research

D 4 practical RESEARCH

E 4 biblio. RESEARCH

sh*G 4 scientific RESEARCH

sh*I 4 scholarly RESEARCH

S 4 problem lack of UNDER-STANDING

AA 4 not simple MATTER to separate [them]

DD 4 provides knowledge BASE...of profession

sh*JJ 4 faculty STATUS

OO 4 conferences FEATURE research

PP 4 ALA's HISTORY of office of research

J 5 people come for HELP or ask Qs.

K 5 SERVICE called biblio. instruction

M 5 three LINKS... to librarianship

P 5 USE library more intensely

GG 5 could be powerful INFLUENCE on work... of librarians
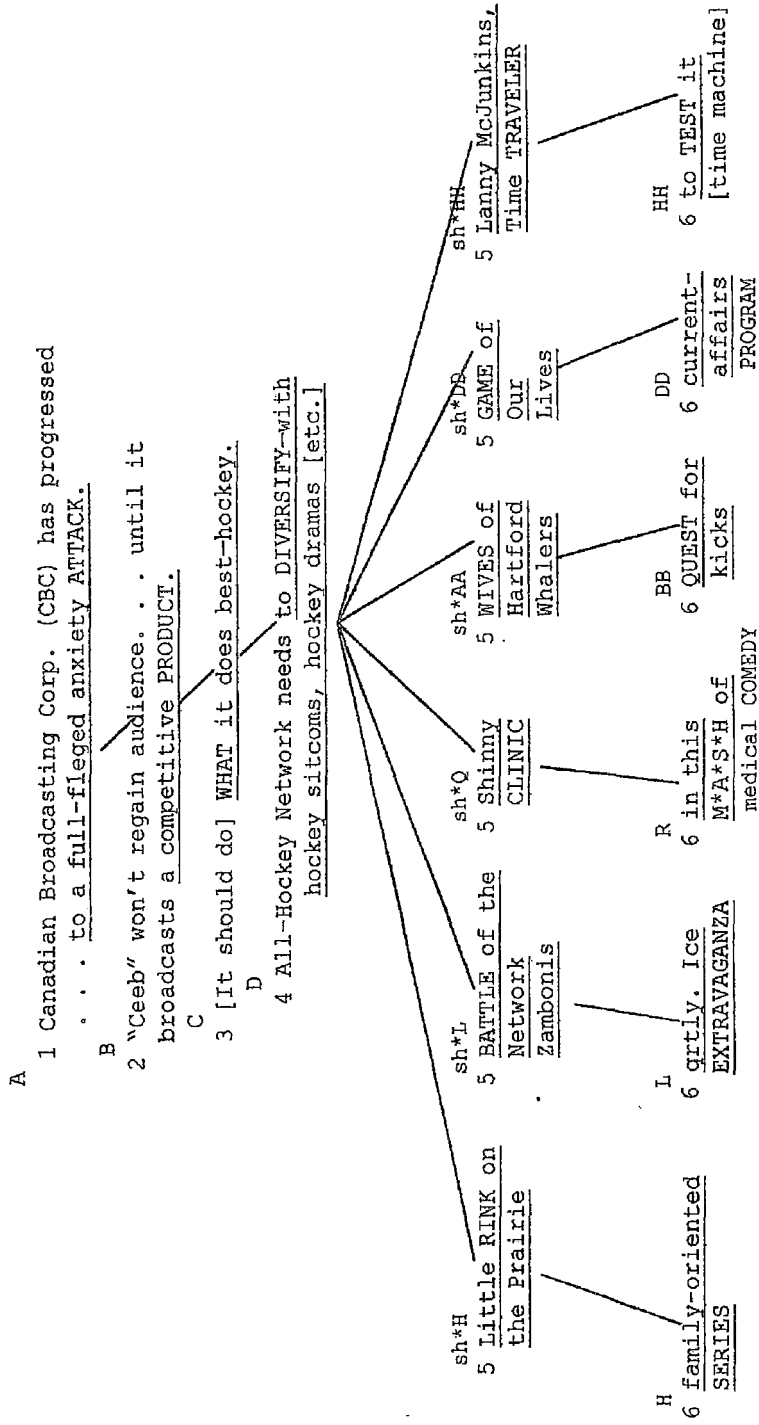
5 new &... practical CHARGE to office

KEY: Numbers refer to the level of abstraction in the hierarchy. Lines show the relationships among its categories. Letters refer to the paragraphs containing the information. Underlined words are in focus category phrases. The abbreviation "sh" stands for "subhead."

(An analysis of Lynch 367-81)

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APPENDIX D

HIERARCHICAL SKETCH OF "CRISIS SOLVED"

Crisis Solved: CBC, NHL to Merge

A
1 Canadian Broadcasting Corp. (CBC) has progressed
. . . to a full-fleged anxiety ATTACK.
B
2 "Ceeb" won't regain audience. . . until it broadcasts a competitive PRODUCT.
C
3 [It should do] WHAT it does best-hockey.
D
4 All-Hockey Network needs to DIVERSIFY-with hockey sitcoms, hockey dramas [etc.]

sh*H
5 Little RINK on the Prairie
H
6 family-oriented SERIES

sh*L
5 BATTLE of the Network Zambonis
L
6 qrtly. Ice EXTRAVAGANZA

sh*Q
5 Shinny CLINIC
R
6 in this M*A*S*H of medical COMEDY

sh*AA
5 WIVES of Hartford Whalers
BB
6 QUEST for kicks

sh*DB
5 GAME of Our Lives
DD
6 current-affairs PROGRAM

sh*HH
5 Lanny McJunkins, Time TRAVELER
HH
6 to TEST it [time machine]

*sh - subhead
Key: Numbers show levels of abstraction; letters show the place of items in the article; lines show relationships among them.

APPENDIX E

HIERARCHICAL SKETCH OF "POLITICAL SOCIOLOGY OF

PARTY SUPPORT IN IRELAND"

title
1 REASSSESSMENT of Political Sociology of Party Support in Ireland

*subhead
2 CONCLUSION

*subhead
2 DATA, MEASUREMENT, METHODS

subhead
2 Social BASES of Partisanship

H
3 relative IMPORTANCE of each of four categories
J

4 Irish parties possess distinct social BASES

subhead
5 regional FACTOR

Q
5 important DETERMINER of partisan loyalties

U
6 political INFLUENCE of region moderated [by] other things

H
5 social POSITION

O
5 SIGNIFICANCE of occupational class

P
6 class IMAGE unimportant in Fianna Fail but significant for other two

J
5 IMPORTANCE of farmers

K
6 three farming CATEGORIES

table 1
5 AGE—insignificant

I, M-N
5 Labour SUPPORTERS: lower occupational status, less education

L, M-N
5 Fine Gael REPRESENTS non-Catholics, educated farmers

H, L
5 "overall" (compilation)

H, L
5 SUPPORT for Fianna Fail: church-attending Catholics, less educ.

*Note: Only the middle part of the of the discourse is fully shown.

KEY: Numbers show levels of abstraction; letters show the place of paragraphs with information. Lines show relationships among the parts. Underlined words are part of focus category phrases.

(An analysis of Lynch 367-81)

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