

Syntactic Fluency and Cohesive Ties  
in College Freshmen Writing

by

Sydney E. Onyeberechi

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APPROVAL SHEET

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Name of Candidate: Sydney E. Onyeberechi  
Doctor of Philosophy, 1986

Dissertation and Abstract  
Approved:

Jessie A. Roderick  
Jessie A. Roderick, Professor  
Department of Curriculum and  
Instruction

Date Approved:

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## ABSTRACT

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Sydney E. Onyeberechi - Doctor of Philosophy Candidate,  
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Dissertation Directed By: Jessie A. Roderick, Professor  
Department of Curriculum and  
Instruction

The purpose of this study was to investigate certain predetermined types of syntactic constructions and cohesive ties college freshmen exploit in a persuasive writing task. To accomplish this purpose, two sets of papers rated high and low, respectively, in holistic scoring, was compared in terms of types and frequencies of certain syntactic constructions and cohesive ties per 100 T-units. The study was conducted at a large urban university in the District of Columbia in September, 1985. Writing samples were generated by freshmen students enrolled in twelve sections of English III. The writing task was administered by classroom teachers.

To insure anonymity, each original writing sample was photocopied and coded to conceal the writer's name, section and teacher's name. The photocopied writing samples were scored by three experienced teachers of college freshman composition who were currently doctoral candidates in English Education at the University of Maryland. The scoring was done on a 1-8 scale (8 being the highest score). This scale was established by the

Educational Testing Service in 1975. The ratings were based on a three-level "Criteria for Holistic Rating of a Persuasive Writing Task" (high: 7-8; middle: 5-6; low: 1-4) the investigator adapted from Cooper's Holistic Evaluation of Writing (1977).

Further analysis of these essays included a frequency count of T-units and types and frequencies of certain syntactic constructions and cohesive ties in ten essays (five rated high and five rated low) per 100 T-units. Then a comparative description of the two sets of papers was done. The findings indicate that the college freshmen engaged in this study used at least four types of syntactic constructions and at least five types of cohesive ties in varying degrees of proficiency. The set of five papers rated high used almost twice as many syntactic constructions and cohesive ties as did the set of five rated low.

Further research should focus on: 1) how, what, and when good and poor writers make decisions about syntactic constructions and cohesive ties they use in their writing task, and 2) the relationship between these two indexes of good writing and different types of persuasive topics.

## DEDICATION

This dissertation is reverently dedicated to the loving and everlasting memory of my parents, Stephen and Theresa Onyeberechi and my dear sister, Margaret.

## ACKNOWLEDGEMENTS

A renowned philosopher once said that any person would be virtually helpless, if he was denied the benefit of other people's experience, support and encouragement. This observation fittingly applies to a doctoral student embarking on a dissertation. He must have a host of well-meaning people to give him direction, feedback, support and assistance. I am fortunate to have such people in my professors, my friends, and my family. To all of these people collectively, I extend my sincere appreciation and thanks for a job well done. However, some people among so many deserve special mention.

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Finally, being mindful of God's protection and benevolence all these years, my family and I bend our knees in humble genuflection and thanksgiving to the OBASI-NU-ELU of all peoples for seeing us through in this collective endeavor.

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CHAPTER I  
INTRODUCTION

The poor quality of student writing on the college level has continued to be the concern of classroom teachers and experts in the field in recent years. While there is almost a unanimous agreement about the poor quality of student writing, different factors have been perceived as accounting for this state of affairs, and different remedies have also been advocated. Some have observed that one of the factors of poor writing might reside in the teachers' unpreparedness to view students' errors in grammatical mechanics as symptoms of larger problems and suggested that research should find remedies by looking beyond the confines of grammatical errors (Shaughnessy, 1977). Others fear that students write poorly because they do not know how to express their ideas through effective sentence control, which a writer achieves by appropriate manipulation of syntactic patterns (Maimon & Nodine, 1978; Hunt 1965; Christensen, 1967; O'Hara, 1973; Gebhard, 1978; Cooper, 1979). Hunt (1965) first described this manipulation of syntactic patterns as syntactic fluency. Still, some experts while recognizing syntactic fluency as an important index of writing maturity, see the poor quality of student writing as resulting in part from the students' habit of making unconnected sentences. These experts correctly contend that random sentences do not make

a composition a text. They see the publication of Cohesion in English by Halliday and Hasan (1976) as a timely breakthrough for teaching and research (Holloway, 1981; Witte & Faigley, 1981; Cooper, 1979; Markel, 1984). Cohesion in English emphasizes that the fusion of ideas across sentence boundaries through the use of cohesive ties helps the writer create a composition that can be read as a single, unified text.

#### Statement of Purpose

The purpose of this study was to investigate certain predetermined types of syntactic constructions and cohesive ties college freshmen exploit in a persuasive writing task. To accomplish this purpose, two sets of papers rated high and low, respectively, in holistic scoring, was compared in terms of types and frequencies of certain syntactic constructions and cohesive ties per 100 T-units. This study replicated certain elements of the studies by Witte & Faigley (1981), and Cooper (1984) reviewed respectively in Chapter Two. The following aspects were replicated: the use of T-units and frequency count, the study of five predetermined types of cohesive ties (all references, substitution, ellipsis, all conjunctive ties, and all lexical ties), and the use of certain predetermined types of syntactic constructions (all free modifiers, final free modifiers, all adjectival modifiers, non-finite verbs [gerund] and dependent clauses -- the last two are the

present researcher's modifications). Other elements replicated include the use of persuasive mode for the writing task, the use of holistic scoring in relation to predetermined types of syntactic constructions and cohesive ties in comparing two sets of papers rated high and low respectively. The final elements replicated in this study include the use of 100 T-units as a common denominator for comparing two sets of papers rated high and low in their respective exploitation of certain syntactic constructions and cohesive ties, and the idea of studying ten papers (five rated high and five rated low).

The following aspects were not replicated: cohesion and invention, frequency count of errors. The present study does not compare the syntactic fluency of college freshmen with that of professional writers. The use of formatting or tables was introduced by the present researcher. The method of expressing formulas in a mathematical framework was also introduced by the present researcher. The study was extended by the present researcher by the introduction of the three research questions of this study. Further innovation includes the notion of whether the set of papers with higher syntactic fluency is also dense in cohesive ties. Finally, the present research was conducted with different subjects in different settings, writing on a different topic.

### Research Questions

The study was designed to ascertain the answers to the following questions:

- 1) What comparisons exist between the two sets of five papers rated low and high respectively in holistic scoring, in terms of types and frequencies of certain syntactic constructions per 100 T-units?
- 2) How do the two sets of papers rated low and high respectively in holistic scoring compare in types and frequencies of cohesive ties per 100 T-units?
- 3) Are papers high in syntactic constructions also dense in cohesive ties?

### Rationale for the Study

Research has demonstrated that a persuasive writing task exerts greater syntactic demands on the writer than description or narration; at the same time this writing mode compels the writer to resort to various cohesive ties to hold his complex thoughts together (Rosen, 1969; San Jose, 1972; Perron, 1977; Crowhaust and Piche, 1979; Cooper, 1984; Crowhaust, 1980). Generally speaking, every essay is a persuasion of some sort. We write to convey or expose our thoughts or ideas to our readers -- our audience. However, persuasion proper, as it is used in this study, involves argument which is an attempt to convince or persuade (Tibbetts, 1981) someone to see a situation, or something through our own point-of-view. The persuasive writing task used for this study compels the writer to take side, and to articulate his evidence to support his argument. This mode

of writing was chosen for the reason furnished in the first sentence of this paragraph. Even though both syntactic fluency and cohesive ties have been described as strategic indexes of quality writing, especially in a persuasive writing task, and have been studied separately with different modes (Hunt, 1965; Perron, 1977; Rosen, 1969; San Jose, 1972; Witte & Faigley, 1981; Holloway, 1981; Cooper, 1984), the two features combined have not yet been made the subject of a single study up to the time this paper was written. Another part of the rationale for this study is that we have few descriptions of the specific types of weaknesses and proficiencies students have in the area of syntactic fluency and cohesive ties (Cooper, 1984; Holloway, 1981). There is, therefore, need for this study in order to have a parallel description of these two important writing features in sets of papers rated high and low in holistic scoring. The need is underscored by experts who, while recognizing syntactic fluency as an important index of writing maturity, warn that any assessment of writing quality that ignores the features of texts that extend across sentence boundaries is merely looking at segments and not at totality (Richard Larson, 1976); Hasan, 1976; Witte & Faigley, 1981). The present investigator agrees with the above stance, and further speculates that writers who have achieved syntactic fluency have equally great need for cohesive ties, features that extend across sentence boundaries, in order to bind their sentences together as a single text. This is why it has been

deemed worthwhile in this study to also examine cohesive ties as important indexes of college freshman writing.

### Definitions

Syntactic Fluency. In grammar, syntax deals with the proper arrangement of words in a sentence to convey meaning. In this study, syntactic fluency refers to types of syntactic constructions (free-modifiers, adjectival modifiers, nonfinite verbs, dependent clauses), which students employ to express and elaborate their thoughts in writing -- in this case, a persuasive writing task (Hunt, 1965; Cooper & Rosenberg, 1979; Watson, 1979).

Mean T-Unit Length consists of an independent clause and all its modifiers (Hunt, 1965).

Mean Clause Length includes both independent and dependent clauses (Hunt, 1965).

Cohesive Ties are linguistic means (words) of making a written discourse unified and recognizable as a complete text (Halliday & Hasan, 1976).

#### Types of Cohesive Ties:

References are pronouns and comparatives (the same as, similar to, different from, better or worse than) (Halliday & Hasan, 1976).

Substitutions are the use of a different word to stand for a word previously mentioned in the text (Halliday & Hasan, 1976).

Lexical Ties - Lexical cohesion is discussed under four headings in this study: (a) repetition of a particular word throughout a discourse to achieve emphasis; (b) the use of synonyms (words of identical meanings) to avoid unnecessary and monotonous repetition of the same words in a discourse; (c) the use of superordinate term to classify a previously mentioned word, phrase or clause; (d) collocation: lexical cohesion a writer achieves "through the association of lexical items that regularly co-occur" (Halliday & Hasan, 1976, p. 284).

Ellipsis occurs in a sentence when a word used earlier to imply comparison is dropped later on in the sentence and across sentence boundaries (Halliday & Hasan, 1976).

Conjunctive Ties are cohesive devices which extend the meaning of a sentence to a subsequent one (Halliday & Hasan, 1976). The types reviewed in this study are additives, adversatives, causals, and temporal (see pages 12 and 13).

Holistic Scoring - By this procedure, an essay is given a numerical score that represents the rater's opinion of the overall quality of the essay. The raters are asked to read the essay quickly and to score it as a whole without pondering the parts (Freedman, et. al., 1983).

Persuasion: Generally speaking, every essay is a persuasion of some sort. We write to convey or expose our thoughts or ideas to our readers -- our audience. However, persuasive

proper, as it is used in this study, involves argument which is an attempt to convince or persuade (Tibbetts, 1981) someone to a situation, or something through our own point-of-view.

## DEMONSTRATION OF THE TWO LINGUISTIC FEATURES

### Syntactic Fluency

In grammar, syntax deals with the proper arrangement of words in a sentence to convey meaning. In this study, syntactic fluency refers to the words, clauses, and their modifiers which students employ to flesh out their thoughts in their discourse -- in this case, a persuasive writing task. Dixon (1972), terms syntactic fluency an important index of students' writing performance, while it is seen as a measure of students' maturity in writing by Dauterman (1969). Research by Hunt, 1965; Christensen, 1967; Cooper and Rosenberg, 1979; and Waston, 1979 provide suggestions on the features to examine if one wants to describe the syntactic fluency of college students' writing in types of discourse. In this study, two features that deal with average lengths of syntactic units and four that specify types of syntactic constructions are examined.

### Lengths of Syntactic Units

1. Mean T-Unit Length - A T-Unit consists of an independent clause and all its modifiers. A sentence will always be a T-Unit; sometimes,

however, a sentence may contain two or even three T-units. The following example illustrates segmentation into T-units. The T-units are designated with a slash and numbered:

My point is that people should not be put to death silently.<sup>1/</sup> To do this to fellow human beings is immoral,<sup>2/</sup> and anyone guilty of this unthinkable act is not a Christian.<sup>3/</sup>

In the above example, while the first sentence is one T-unit, the second sentence has two T-units.

2. Mean Clause Length - includes both independent and dependent clauses (Hunt, 1965). Mean clause length is obtained by identifying dependent clauses within each T-unit and then adding together the number of T-units (independent clauses) and the number of dependent clauses, and dividing the total by the number of words in the paper.

Below is an example. The T-units are marked with a slash, while the dependent clauses are underlined. The dependent clauses embedded in other dependent clauses are identified with double underlines:

Our Christian faith teaches that we love our neighbor who may not even like us.<sup>1/</sup> We must not take into consideration the person's sex, religion, race or politics.<sup>2/</sup> Just because a person is an

atheist is no justification to hate him, if we see him as the child of God, who deserves His love.<sup>3/</sup>  
It is unChristian to hate this person. <sup>4/</sup>

We have a total of nine clauses: five dependent clauses (two of them embedded in other dependent clauses) attached to four independent clauses, or T-units.

### Types of Syntactic Constructions

1. Free Modifiers - One of the characteristics of the writing of competent writers is that modifying structures (words, phrases, clauses) occur frequently at the beginning of a T-unit, within a T-unit, or after the base clause in a T-unit (Christensen, 1967). The following two sentences illustrate the three types: initial, medial, final. The modifiers are underlined.

Any kind of discrimination, [MEDIAL] whether sexual, racial, or religious discrimination, must be vigorously fought against [FINAL] in order to maintain a just society.<sup>1/</sup> [INITIAL] While there may be personal reasons to discriminate the law of the land has no exemptions.<sup>2/</sup>

2. Adjective Modifiers - Another characteristic of good writers is the amount of adjective modification of all types (word, phrase, clause) around the noun (Hunt, 1965). The following sentence illustrates adjective modification:

The job was offered to the man who was better qualified to handle such a heavy schedule.

3. Nonfinite Verbs - A nonfinite verb is a verb which functions in some way other than as a verb or predicate in a clause. The emphasis here will be on gerund. Watson (1979) observes that noting these nonfinite verbs in a piece of writing is one way of knowing the richness of a writer's syntactic repertoire. Below are some examples:

Dancing has for so long been recognized as a form of exercise. Another celebrated form of exercise is swimming.

4. Dependent Clauses: Are the writer's syntactic options which give him the flexibility to express distinctions through the subordination of ideas (Cooper, 1984; Crowhaust, 1980; Perron, 1977). Waddell, et al (1983) described dependent clauses as essential sentence-structure components which enable the writer to achieve variety and style in discourse.

### Cohesive Ties

Cohesive ties are linguistic means of making written compositions unified and recognizable as complete texts (Halliday & Hasan, 1976). The cohesive ties that were concentrated on in this study are the following major ones:

1. References: Are pronouns and comparatives: the same as; similar to; different from; better or worse than.
2. Substitution: The use of a different word to stand for a word previously mentioned in the text. For example: The solution to this problem is two-fold. The first one is to get rid of criminals.
3. Ellipsis: Ellipsis occurs in a sentence when a word used earlier to imply comparison is dropped later on in the sentence. For example:  
  
In this manner, the employees would not suffer, and neither would the company [suffer].
4. Conjunction: Conjunctive ties are cohesive devices which extend the meaning of one sentence to a subsequent one. Halliday and Hasan (1976) identify five sub-categories of conjunctive cohesion: additive, adversative, casual, temporal, and continuative. As the latter has the tendency to overlap with the adversative, only four major sub-categories are investigated in this study:
  1. Additive: and, or, nor.  
  
He was surrounded by a hostile crowd.  
  
And in order to save his life, the police secretly whisked him away to safety.
  2. Adversative: The conjunctive relation indicates "contrary to expectation" yet, though, but, however, only, despite this, all the same, at the same time, on the contrary. For example:  
  
He was tired to the bone.

Yet he managed to stand erect to salute the flag.

3. Causal: In this sub-category relation is expressed by so, this, hence, therefore, consequently, accordingly, and a number of expressions like "as a result of that," "in consequence of that," "because of that." For example:

His mother made sure that he regularly had the money he needed for his tuition and board.

Consequently, the boy grew up to take money for granted.

4. Temporal: This sub-category expresses the relation between the theses of two successive sentences by indicating the sequence in time: then, next, afterwards, earlier, before, previously, finally, at the same time, subsequently. For example:

Mary left her parents last night determined not to come home alive. Earlier that night, she had slipped a short gun in her suitcase.

5. Lexical: Lexical cohesion is the predominant means of connecting sentences in discourse (Witte and Faigley, 1981). It is seen by Cooper (1979) as the most interesting and important means through which writers achieve textuality. Halliday and Hasan (1976) identified two major categories of lexical cohesion: reiteration and collocation. Reiteration is sub-divided into four: repetition, synonyms, near-synonyms, and superordinates. To avoid confusion of terms, and thus facilitate analysis, lexical cohesion is discussed under four headings in this study.

(a) Repetition of a particular word throughout a discourse. For example:

I feel that the church should ordain women priests. The church by so doing would be the winner in the long run.

(b) The use of synonyms to achieve lexical cohesion:

Women make up over seventy-five percent of church population around the world. For this reason, the females are no longer willing to play secondary roles in the church.

(c) The use of superordinate term to classify a previously mentioned word, phrase or clause.

I have no illusion about my support for her candidacy. I have not made that decision lightly.

The word "decision" in the second sentence gives signal to the reader of how the writer intends the phrase, "my support for her candidacy" to be regarded.

(d) Collocation: Refers to lexical cohesion a writer achieves "through the association of lexical items that regularly co-occur" (Halliday and Hasan, 1976, p. 284). For example:

The current social revolution in manners and values has made husbands uncertain of their roles in the home. Equally confounded are the wives who bear the brunt of this uncertainty.

The juxtaposition of "husbands" and "wives" in the above sentences creates a strong collocation.

The discussion and analysis of the above cohesive ties will be based on the work of Halliday and Hasan (1976), as modified by Cooper (1984). Halliday and Hasan maintain that a text is best regarded as a semantic unit: a unit not of

form, but of meaning. In this perspective, the cohesion of individual texts is not the result of structural relations within sentences but of the semantic relations that exist between particular words across sentence boundaries. For example:

In my opinion, our not employing this particular woman is sheer discrimination. Her qualifications are higher than those of other applicants.

The meaning of "Her" in the second sentence depends on the presence of "woman" in the first sentence. The two words together constitute one cohesive tie.

#### SIGNIFICANCE OF THE STUDY

The study has certain implications for general education; its findings about the types of syntactic constructions and cohesive ties incoming freshmen bring to their writing tasks will provide teachers some tangible insights and bases for planned and careful writing instruction.

The findings of the study can also impress upon teachers the need to make their students aware of the importance of syntactic fluency and cohesive ties in written texts. This awareness will enable the students to avoid what Christensen, (1967) termed "the pervasive thinness of adult writing." On the whole, the study will be a necessary contribution to the understanding of writing performance because instead of making assertions about writing on the basis of mere generalities, it will be presenting empirical data for discussion and action.

### LIMITATIONS

No research is, or will ever be definitive on students' writing ability. As the present study only probes the syntactic fluency and cohesive ties a group of college freshmen attending an urban university bring to a persuasive writing task, its limitations are obvious. First, the writing task administered to the subjects in this research is not a test of college freshmen writing ability, nor should its findings be interpreted as such. Second, the findings should only apply to the persuasive mode, and not to other rhetorical modes, such as narration and description, as these modes do not place greater demands for syntactic and cohesive resources on the writer (Crowhurst, 1980; Witte and Faigley, 1981).

Another aspect of the limitations of this study may reside in inadvertent oversight on the part of the raters, and the effect of the examination situation of the writing task on the students. The fact that the writing samples studied were generated in a one-shot writing task may also constitute a limitation.

### Overview of the Remainder of the Dissertation

Discussion of syntactic fluency and cohesive ties continues in Chapter II. The sub-headings treated include: Syntactic Fluency and Quality of Students' Writing, Cohesion and Quality of Writing, and The Writing Mode. Research Perspective on Methods of Scoring and Analyzing Data is also

included in this chapter. Chapter III discusses the Subjects, Freshman English, The Institution, Procedure for the Administration of the Writing Task, Holistic Scoring, Analysis for Syntactic Constructions and Cohesive Ties and the Pilot Study. The findings are presented in Chapter IV. Chapter V presents a summary of the study, conclusions, and recommendations for further research.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

This chapter contains the literature review considered relevant to this study. The scope of the review is as follows: Syntactic fluency and quality of students' writing; cohesion and quality of students' writing; the writing mode; and research perspective on methods of scoring and analyzing data; syntactic fluency; cohesive ties. The research questions posed in Chapter I were based on the literature discussed below.

#### Syntactic Fluency and Quality of Students' Writing

Research interest in students' syntactic fluency was fermented by the publication of Hunt's (1965) study of the development of syntactic fluency in written composition. Hunt wanted to study and document for the first time the difference in the sentence structures of students in different grade levels and describe the nature of the differences. His rationale was that if teachers could know what structures tend to be used at different grade levels, such knowledge might help them decide what should be taught and when (Hunt, 1965, p. 2). Since this publication, various investigators have confirmed Hunt's finding that mean T-unit length increases with age in written composition (Blount, Johnson & Fredrick, 1968; Braun &

Klassen, 1973; Loban, 1976; O'Donnell, Griffin & Norris, 1967; Veal, 1974). Mean T-unit as defined by Hunt includes the independent clause and all its modifiers. Some researchers have also investigated the effect of certain situational factors on syntactic fluency in speech and writing. It was found that the writing mode affected syntactic fluency in written composition (Perron, 1977; Rosen, 1969; San Jose, 1972). Rosen (1969) found that his 15-16 year-old subjects produced longer T-units in referential writing than in expressive writing. San Jose (1972)b and Perron (1977) studied the effect of mode of discourse on the syntactic fluency of respectively, fourth-graders and third, fourth and fifth graders. In these two investigations, mean T-unit length was highest in argument followed by exposition, narration and description. In their own study of the effects of audience and mode of discourse on syntactic fluency at two grade levels, Crowhurst & Piche (1979) found that compositions for teachers were more syntactically complex than the ones written for peer audience. They also found that argument often made greater demands on students' syntactic fluency than description or narration.

Another aspect of interest in syntactic fluency concerns the relationship between syntactic fluency and holistic ratings assigned to compositions. A couple of studies have attempted this investigation, but the results have been conflicting.

Faigley (1979) found that certain variables of syntactic fluency -- T-units with final modifiers were strongly linked to high holistic rating of college freshmen writing. O'Hare (1973), Combs (1976) and Morenberg, Daiker and Kerek (1978) found that after sentence-combining practice, their experimental subjects had both higher syntactic scores and higher quality ratings than their control subjects. On the other hand, Mellon (1969) found that syntactic fluency increased after sentence-combining practice, but that quality ratings for his experimental group were lower than for the less syntactically fluent writing of his control group. Schmeling (1970) reported that "good" compositions by college freshmen had an average T-unit length that was only slightly greater than that of "poor" compositions, while the average group had a mean T-unit length greater than either the good or the poor group. Gebhard (1978) compared the top 10% and the bottom 10% of papers written by college freshmen and found that clause length was significantly greater in the superior group though mean T-unit was not. A mean T-unit includes the independent clause and all its modifiers. On the other hand, mean clause length includes both independent and dependent clauses. On the whole, however, most language and writing experts agree that syntactic fluency is an important index of students' writing performance, and is, therefore, an important domain of research Dixon (1972);

Dauterman (1969); Christensen (1967); Cooper and Rosenberg (1979) Waston (1979) and Hunt (1965). Experts also concur that high syntactic fluency is prerequisite to writing effective argumentative discourse because argumentive essays inherently require the logical interrelationship of propositions (Crowhaust, 1980; San Jose (1972) and Perron (1977); Cooper (1984).

### Cohesion and Quality of Writing

Researchers and even classroom teachers have often concerned themselves with the question of what internal characteristics distinguish between essays rated high and low in overall quality (Witte and Faigley (1981); Holloway (1981); Cooper (1984). At the college level, empirical research has, for the most part, tried to furnish answers to this concern of "internal characteristics" and overall quality of writing through the study of errors as symptoms of larger problems (Shaughnessy, 1977) and syntactic features (Gebhard, 1978); Potter (1967); Veal (1974); O'Hare (1973); Combs (1976) Morenberg, Daiker and Kerek (1978). However, there are experts who, while recognizing syntactic fluency as an important index of writing maturity, maintain that any assessment of writing quality that ignores the features of texts that extend across sentence boundaries is merely looking at segments and not at totality (Richard Larson, 1976; Halliday & Hasan, 1976; Witte & Faigley, 1981).

As many teachers of writing know, random sentences do not make a composition a text. Hence, teachers have repeatedly made such comments on students' papers: "Your essay lacks unity;" "Your paper needs a unified focus." "Try and give a sharp focus to your paper," "Avoid random sentences." Such comments as the above are the teachers' attempt to recognize the primacy of a whole text over sentences as the unit of meaning in written discourse. In her book, A New Perspective on Cohesion in Expository Paragraphs, Markels (1984) maintains that cohesion imparts meaning, insight and purpose to what might otherwise be a collection of random sentences. She affirms the position taken by Halliday and Hasan (1976) that without cohesion, the text can hardly be said to exist at all. According to Markels, cohesion provides the textural means for initiating comprehension or sense. She calls for a serious study of the strategic writing glue -- cohesion, which she describes as a "unity of connection" (p. 20).

Holloway (1981), in discussing how semantic grammars can help teachers teach writing, sees the new research interest in cohesion relevant and timely. The advocates of semantic grammars, Holloway insists, see the structure of language as rising from the ideas we express; they see syntactic units as generated by the ideas that motivate our discourse. He sees the publication of Cohesion in English by Halliday & Hasan (1976), as a significant break-through for teaching and

research. Holloway maintains that for years teachers of writing have grappled with the problem of how to teach the elusive connection between the ideas the students are trying to express and the sentences with which they choose to express those ideas. He observes that the categorization of cohesive devices into reference, substitution, lexical continuity, and conjunction by Halliday and Hasan has facilitated the teaching of the connection between form and content by giving the teacher and the students something concrete and tangible to observe and discuss. It has also facilitated research because it has afforded investigators with something to observe and account for, in an attempt to describe what was formally termed the "elusive connection between form and content" (Holloway, 1981). Holloway calls for more and steady research on cohesion as an important and unavoidable index of writing maturity.

The research by Witte and Faigley (1981) with first semester University of Texas freshmen in which the usefulness of cohesion in writing research was explored confirms cohesive ties as an index of writing quality. The researchers selected ten essays from 90 essays rated holistically by two raters on a four-point scale. Five of the ten essays were rated high and five were rated low. They analyzed these ten essays according to categories of error and according to syntactic features, as well as according to the number and types of cohesive ties. Their analyses of

errors and content variables revealed that the high-rated essays contained larger T-units and clauses, more non-restrictive modifiers and fewer errors. Witte and Faigley then hypothesized that the analysis of cohesive ties in the high and low-rated papers would show similar gross differences, and they were vindicated by the result. According to them, at the general level of analysis, the high-rated essays were much more dense in cohesion than the low-rated essays. In the low-rated essays, a cohesive tie of some type occurred once every 4.9 words; in the high-rated essays, a tie occurs once every 3.2 words, a difference in mean frequency of 1.7 words. Similarly, a large difference in the mean number of cohesive ties per T-unit shows, with 2.4 ties per T-unit in the low-rated essays and 5.2 ties in the high-rated essays. Witte and Faigley also found that writers of high-rated essays employ reference cohesion about twice as often, 84.1 times to 47.8 times per 100 T-units, as the writers of low-rated papers. Likewise, the writers of the high-rated essays use over three times as many conjunctions, (for example, high: 65.4 per 100 T-units), as the writers of low-rated essays. Another finding by Witte and Faigley in their cohesion research is that the writers of high-rated essays are better able to expand and connect their ideas through frequent use of lexical cohesion than the writers of the low-rated papers. Cooper's study (1984) with the freshmen of the State University of New York at Buffalo, yielded almost identical results.

In the Buffalo study, it was found that the weakest writers formed cohesive ties using six different types of reference, while the strongest writers used six additional kinds of reference not used at all by the weak writers. According to Cooper, four of these six proved to be especially important, since they were not pronouns but comparatives (the same as; similar to; different from; better or worse than). As a result of this finding, he suggested that the more competent writers were better able to provide explicit signals of the relationships between particular words or ideas. For example, saying that an issue was "the same as," "similar to," "different from," "better than" or "worse than" was a mark of sophistication that was not present in the writing of the weakest writers. The best writers in Cooper's study used approximately 10 such comparatives for every 100 T-units. As regards to substitution and ellipsis, the weakest writers did not use either. On the other hand, the best writers used substitution 2.90 per 100 T-units and ellipsis 1.45 times. (Substitution is the use of a different word to stand for a word previously mentioned in the text. Ellipsis occurs in a sentence when a word used earlier to imply comparison is dropped later on in the sentence). It was then postulated that competent writers are more likely to

tighten their syntax by eliding a word, or to avoid repetition by finding a substitute. The study found the use of conjunction for both the best and weakest writers to be surprisingly similar. The superior writers used five different types of conjunctive ties for a total of 17.39 per 100 T-units, and the poor writers also used five different types for a total of 16.36 per 100 T-units. However, one notable difference was that the best writers used considerably more coordinating conjunctions (11.59 to 1.82 per 100 T-units). This was interpreted as resulting from the tendency of the competent writers to elaborate their arguments more fully by coordinating several assertions or pieces of evidence on the same level of generality.

How did the best and weakest writers compare in their use of lexical cohesion? Cooper's Buffalo study (1984) provides answers to the above question. In the papers of the best writers, repetition of the same word accounted for 50 percent of all lexical ties; in the weakest writers it accounted for 64 percent. The use of synonyms provided the most striking difference between the two groups. The superior writers employed 11.59 synonyms per 100 T-units (4 percent of all lexical ties), while the papers of the poor writers have no ties at all resulting from the use of synonyms. On the whole, the most competent writers in the Cooper study used 69 percent more lexical ties per 100 T-units than the weakest. In terms of cohesive ties per

T-unit, the best writers used almost twice as much as the weakest writers (4.88 to 2.80 cohesive ties per T-unit).

### The Writing Mode

Current discourse theorists have cautioned that any meaningful text description ought to be discourse specific. This is because there are essential, substantive structural differences among the many types of prose nonfiction writing. These are not just differences between subdiscourse writing strategies such as comparison/ contrast versus process/ description, for example, but major whole-discourse differences between explanation and persuasion or even between writing about oneself and writing about others (Kinneavy, 1971; Britton, 1978; Moffett, 1968; Cooper, 1963; D'Angelo, 1976). What mode of writing then gives a more incisive determination of students' grasp of syntactic fluency and cohesion strategies? It has been established by research that argument exerts greater syntactic demands on the writer, and at the same time compels him to resort to various cohesive ties to hold his complex thoughts together (Rosen, 1969; San Jose, 1972; Perron, 1977; Crowhaust and Piche, 1979; Crowhaust, 1980; Cooper, 1984). So, the persuasive writing mode is chosen for this study because of the above insight, and because it is the type most often asked of students in their lower-division general education courses. In this writing task, the writer takes a position,

constructs arguments to support his position, and finds support for his arguments. In carrying out these see-saw engagements, the writer is, of necessity, compelled to use his syntactic fluency and cohesion strategies to the fullest.

RESEARCH PERSPECTIVE ON METHODS OF  
SCORING AND ANALYZING DATA

Syntactic Fluency

The methods of using mean T-unit length and mean clause length to score and analyze features of writing samples were pioneered by Hunt, 1965; Christensen, 1967; Potter, 1967; Dauterman, 1969, and Dixon, 1970), and have since come to be regarded as a measure of syntactic development (Crowhaust and Piche, 1979). Many researchers have employed these methods in their attempts to find answers related to different facets of syntactic fluency. For example, some have sought to determine the relation of syntactic fluency and quality rating (O'Hare, 1973; Combs, 1976; Veal, 1974; Mellon, 1969; Daiker and Kerek, 1978; Gebhard, 1978; Stewart and Grobe, 1979). Others have used mean T-units and mean clause length to seek to determine the difference of syntactic fluency across modes of discourse (Crowhaurst and Piche, 1979; Crowhaurst Perron, 1977; San Jose, 1973; Cooper, 1984). Cooper finds the mean T-unit has advantage over the orthographic sentence because the mean length of a novice writer's sentences is often inflated either by over-

compounding or by orthographic sentence punctuation errors. Mean T-unit length, he asserts, overcomes these problems, since it is derived by segmenting a unit into a sequence of independent assertions, breaking compound sentences into two T-units, and ignoring the requirements of conventional sentence orthography (Cooper, 1984).

### Cohesive Ties

The work of Halliday and Hasan, Cohesion in English (1976) provides researchers with comprehensive accounts of the cohesive system in English. The work offers a detailed coding scheme as well as models for analyzing results of a cohesion analysis. The authors describe five types of cohesive ties: reference, substitution, ellipsis, conjunction and lexical. Halliday and Hasan maintain that meanings inherent in the connected sentences can hold them together in a variety of ways. They see the structure of meaning which binds sentences together as "cohesion" (Holloway, 1981; Cooper, 1984; Witte and Faigley, 1981). Researchers have applied the T-unit to cohesion analysis and found cohesive ties a powerful and reliable index of differences in writing samples (Witte and Faigley, 1981; Crowhaust, 1981; King and Rentel, 1981; Rochester and Martin, 1979).

## CHAPTER III

### METHOD

This chapter includes the following sub-headings: subjects, freshman English, the institution, procedure, holistic scoring. It also contains analysis for syntactic constructions and cohesive ties.

#### Subjects

To investigate the types of syntactic constructions and cohesive ties college freshmen employ in a persuasive writing task by comparing two sets of papers rated high and low, respectively, in holistic scoring, in terms of types and frequencies of syntactic constructions and cohesive ties per 100 T-units, forty-eight students enrolled in twelve sections of English III in a large urban university in the District of Columbia generated the writing samples.

The choice of sample for this study has a theoretical basis. It has been observed that studies involving time-consuming measurement techniques cannot be productively undertaken with a large sample. The complexity of a study (like the one undertaken by this investigator), makes it appropriate for the researcher to use "fewer than fifty subjects" (Borg & Gall, 1983).

#### Freshman English

English III is the freshman first semester course at the University for any first-year undergraduate student who is

eligible, either through essay diagnostic screening or through a successful semester in English 015, a preparatory class for English III. Eligible students enroll in any of the over seventy English III sections according to their convenience. Students are not assigned to any of these sections according to any extreme scores.

English III is a basic writing course at this large urban university in the District of Columbia. The students, after completing this course, are expected to be able to discuss their ideas on any given topic in fluent and coherent writing in standard English. Students enrolled in this course are required to write at least 8 to 10 essays during the semester. It is expected that half of these essays would be written in class. The course as officially described is "designed to enable students to write well-developed, coherent, grammatically correct essays in a variety of modes, and to write outlines in the correct format to accompany the essays."

### The Institution

The University, a large urban institution in the District of Columbia, is fully accredited by the Commission of Higher Education, Middle States Association of Colleges and Schools. The University, which came into being in 1976 by the merger of three public institutions of higher learning has an open admission policy. Under this policy, any student

with a high school diploma or a General Education Development (GED) certificate is eligible for admission. The University is a commuter institution with approximately 90 percent of the students residing in Washington, D. C. It has a student population of approximately 14,000, of which 80% are black and more than half are women, and a sizeable number of international students.

This University was chosen for this study for two reasons. The first is an accessibility reason: This investigator is affiliated with the University as an assistant professor of English, and can, therefore, negotiate permission with the appropriate person and groups to use English III students to generate writing samples. The second reason is a factor of typicality. Despite the University's uniqueness as an urban institution at the hub of the nation's capital, it shares among other things, a typical concern with other urban institutions of higher learning in the country -- the need for specific descriptions of students' strengths and weaknesses in writing so that appropriate and effective instruction will be designed for students.

#### PROCEDURE

The writing task was administered during the Fall Semester, 1985. A pilot study to try out the research was undertaken with a comparable group in the summer of the same year (Pilot Study). The mode chosen for the research essay is the persuasive writing task. The persuasive writing task

exerts greater syntactic demands on the writer than description or narration. At the same time, this writing mode compels the writer to resort to various cohesive ties to hold his complex thoughts together (Rosen, 1969; San Jose, 1972; Perron, 1977; Crowhaust and Piche, 1979; Cooper, 1984). In this writing task, the students are required to take a position, construct arguments to support it, and when necessary, support their arguments. The investigator clearly gave the students the specifications for the writing task and what was expected of their performance. This information was carried on the assignment sheet given to each subject. To insure the students' interest, the writing task was based on campus interests and students' concerns (see Appendix A for the writing task). To determine students' interests, the investigator conducted a series of on-the-site random interviews with several students on the campus of this urban university. The majority of the respondents was almost equally divided between those who expressed interest in seeing the university build on-campus dormitories for the students and those who expressed concern about the university library. The writing task was then constructed to reflect these interests and concerns.

The writing task was administered by classroom teachers in order to maintain a familiar classroom setting. Each student had 80 minutes (the normal length of class in the department of English Studies at this university) to write the essay.

To insure anonymity, each original writing sample was photocopied and coded in such a manner as to conceal the writer's name, section, and teacher's name. The originals were then promptly returned to the instructors for marking and grading.

### Holistic Scoring

The photocopied writing samples were scored by three experienced teachers of college freshman composition who were currently doctoral candidates in English Education at the University of Maryland. The scoring was done on a 1-8 scale (8 being the highest score). This scale was established by the Educational Testing Service in 1975. The ratings were based on a three-level "Criteria for Holistic Rating of a Persuasive Writing Task" (high: 7-8; middle: 5-6; low: 1-4) adapted by the investigator from Cooper's "Holistic Evaluation of Writing" (1977). The raters were instructed to score the papers holistically. By holistic scoring, an essay is given a numerical score that represents the rater's opinion of the overall quality of the essay. The raters are asked to read the essay and to score it as a whole without pondering the parts (Freedman, et al, 1983).

Before the actual scoring the raters practiced "normalization of scores" with several copies of the writing samples. Normalization of scores is a prescoring practice which elicits explanations from the raters of why they scored each paper the way they did. Extra copies were made

available and were not included in the actual scoring samples. The rationale for "normalization" is that when experienced teachers of writing with similar background or training devote some time scoring several papers together, each explaining his considerations for scoring a paper the way he did, there is a tendency for their subsequent scores to be homogeneous (Cooper & Odell, 1977; Odell, 1980; Sweete-Brown, 1985). After the normalization practice the raters scored the forty-eight writing samples. Three photocopies of each of the original writing samples were made available for independent reading and scoring by each of the three raters, respectively. The summary of the scores is presented in Table 8 (Appendix B). The interest here was focused on ten papers (five, rated high and five, rated low in holistic scoring). The idea of studying ten extensively from a number of scored writing samples was adopted from Cooper (1984) and Witte & Faigley (1981) whose work reviewed in Chapter Two served as a model for this study.

As each of the essays was scored by three raters, an analysis of each rater's scores was done and inter-rater agreement established through the use of Frick & Semmel's (1978) observer agreement approach in which each rater's scores are summed, and the least of the totals is divided by the larger sums. As shown in Table 8 (Appendix B), many of the scores were of very similar values or deviated from corresponding score with only one point. This means that

the raters after the normalization practice tended to score the essay very much like one another. This homogeneity of scores gives validity to the value of the scores. The inter-rater agreement generated from the data on Table 8 (Appendix B) is 94%. Crowhaust, et al (1979) reported inter-rater agreement of 96% to 98% in their Study of Audience and Mode of Discourse Effects on Syntactic Complexity. Likewise, an inter-rater agreement of 95% was reported by Moslemi (1975) in a study of creative writing essays. McCulley (1985) recorded inter-rater agreement of 91%, 96% and 98% in his study of writing quality, coherence and cohesion.

#### Analysis for Syntactic Constructions and Cohesive Ties

The holistic scoring was accomplished in one day, and two days later the investigator and a colleague-volunteer, a doctoral student in English Education at the University of Maryland, studied and examined the ten papers, whose summary scores are presented in Table 4 (Appendix B) -- five rated high and five rated low, holistically, in order to identify lengths of syntactic units, types and frequencies of syntactic constructions and to take note of types and frequencies of cohesive ties per 100 T-units in each of the two sets of papers. To train a colleague-volunteer for this task, she and this researcher spent a couple of hours going through the definition and demonstration of T-units and the two linguistic features on pages 8-15. A photocopy of the

mentioned passage was made available to her. To insure familiarity of the procedure and agreement in the determination of types and frequencies of certain syntactic constructions and cohesive ties, several extra photocopies not used for the research were used for practice. Both the volunteer and the researcher read the same paper independently. Any persistent differences in frequency count, or in determination of types of syntactic constructions, or cohesive ties after two independent recheckings, were resolved by discussion and consensus. This procedure was also the norm in the analysis of the research writing samples.

Step 1: Identify and enumerate all the T-units in each of the five papers rated high; then add the five totals. The grand total is the number of T-units in this group of papers. Repeat the above procedure for the set of five papers rated low.

Step 2: Determining types of syntactic constructions. First, identify and count incidence of the following predetermined syntactic constructions (all free modifiers, all adjectival modifiers, the noninfinite verbs (gerunds), dependent clauses) in the five papers rated high. Second, find the incidence of each of the above types of syntactic constructions in these papers per 100 T-units by dividing the number of each type of syntactic construction by the total number of T-units in the five papers and multiplying by 100.

$$\frac{NSC}{N \text{ T-units}} \times \frac{100}{1}$$

Repeat the above procedure with the five papers rated low.

Calculating the incidence of each type of syntactic construction in the two sets of papers rated low and high respectively per 100 T-units provides a basis of comparing the two sets of papers (Cooper, 1984; Witte & Faigley, 1981).

The third stage of the research was devoted to the identification and categorization of cohesive ties in each of the ten papers studied above. The cohesive ties that were concentrated on in this study are as follows: reference, substitution ellipsis, conjunctive ties and lexical.

Step 1: Next, calculate the incidence of cohesive ties per 100 T-units in the five papers rated high by dividing the total number of cohesive ties by the total number of T-units and multiplying by 100, as demonstrated below (see rationale for calculating per 100 T-units, page 39).

$$\frac{\text{Total N of CT}}{\text{Total N of T-units}} \times \frac{100}{1}$$

Repeat the procedures in steps 1 and 2 for the five papers rated low in holistic scoring.

Step 2: Find the incidence of each of the five categories of cohesive ties per 100 T-units for each of the two sets of papers by dividing the total number of incidences of the category under review by the total number of T-units in the group of papers concerned, and multiplying by 100. For example:

$$\frac{\text{Total N of Reference}}{\text{Total N of T-units}} \times \frac{100}{1}$$

The preceding formulas were generated by the investigator from the verbal descriptions by Cooper (1984); Witte & Faigley (1981) in their respective studies reviewed in Chapter Two of this study.

The focus of the analysis was the difference between the five papers rated high and low in holistic scoring. The difference was determined in terms of T-units, types and frequencies of certain syntactic constructions and cohesive ties per 100 T-units, as utilized by the two sets of papers,

respectively. After the procedures detailed above, the primary mode of further analysis was a comprehensive, comparative description of the two sets of papers based on the data generated from the above operations presented above. It must be noted that calculating syntactic constructions and cohesive ties in the two sets of papers rated high and low, respectively, per 100 T-units provides a common denominator and basis for a valid comparison (Cooper, 1984; Witte & Faigley, 1981). The comparative description was verbally qualitative.

## CHAPTER IV

### FINDINGS

The purpose of this chapter is to present the results of a comparative descriptive study in which the difference between two sets of papers rated high and low respectively, in holistic scoring, was investigated in terms of types and frequencies of certain syntactic constructions and cohesive ties per 100 T-units. The results of these operations are presented according to the stated research questions. The procedure for each level of comparison is fully explained: tables are used to illustrate the results. A detailed verbal analysis also follows each level of comparison between the two sets of papers under review. Calculating the incidences of each type of certain syntactic construction and cohesive ties in the two sets of papers rated high and low, respectively, per 100 T-units provides a common denominator and basis for a valid comparison (Cooper, 1984; Witte & Faigley, 1981).

#### Research Question 1

What comparisons exist between the two sets of five papers rated high and low, respectively, in holistic scoring, in terms of types and frequencies of certain syntactic constructions per 100 T-units?

To find answers to the above research question, the investigator, aided by a colleague -- volunteer, a doctoral

student in English Education at the University of Maryland, read and examined ten papers (five rated "high" and five rated "low" in holistic scoring) in order to study and identify the number of T-units and types of syntactic constructions in each of the two sets of papers. To orient the colleague-volunteer to this process, she and this researcher had to spend a few hours going through the demonstrations of syntactic constructions and cohesive ties as shown on pages 8 to 14. After this orientation we tried the procedure with a couple of extra photocopies of the writing samples not included in the actual samples for the study. If differences continued to persist in our tallies after two independent recheckings, we then resolved them by discussion and consensus. This idea of studying ten papers extensively from a number of scored writing samples was adopted from Cooper (1984) and Witte & Faigley, (1981), whose respective studies reviewed in Chapter Two provided a model for this study.

To ascertain the number of syntactic constructions in each of the two sets of papers, a frequency count of the incidences of each of the following syntactic constructions was undertaken: all free modifiers, final free modifiers, all adjectival modifiers, non-finite verbs (gerunds), and dependent clauses. To find the incidence of each of the above types per 100 T-units the number of each type of syntactic construction was divided by the total number of T-units in each of the two sets of papers and the result multiplied by 100.

$$\frac{\text{No. of Syntactic Construction}}{\text{No. of T-units}} \times \frac{100}{1}$$

This formula and those employed to deduce answers to research questions 2 and 3 were generated by the investigator from the verbal descriptions made by Cooper (1984) and Witte & Faigley (1981) in their respective studies reviewed in Chapter Two of this study.

Table 1

Comparison in Terms of Syntactic Constructions per 100 T-units in the Writing of Five Freshmen Scoring High and Five Scoring Low on a Persuasive Writing Task

Syntactic Constructions	High	Low
All free modifiers	52.00 (a)	32.56 (b)
Final free modifiers	20.80	13.20
All adjectival modifiers	254.25	133.80
Non-finite verbs (gerunds)	47.00	25.00
Dependent Clauses	45.50	32.00
Total	419.55	236.56

(a) Frequencies per 100 T-units, based on a sample of 93 T-units in five papers rated high in holistic scoring.

(b) Frequencies per 100 T-units, based on a sample of 80 T-units in five papers rated low in holistic scoring.

The results of the analysis show that the two sets of papers under review above employed five different types of syntactic constructions in varying degrees of frequencies.

Information in Table 1 reveals that the five papers rated high in holistic scoring had more syntactic constructions than the set of five rated low. The consistency in the difference of figures for each of the five types of syntactic constructions (all free modifiers, non-finite verbs [gerunds], dependent clauses) suggests that the high rated papers were able to furnish more information in each T-unit to qualify, elaborate, specify or modify a given point. For instance, in any given 100 T-units of the writing as represented by the two sets of papers presented in Table 5, the high rated set would use 419.55 free modifiers, adjectival modifiers, non-finite verbs (gerunds), dependent clauses, while the set rated low would only employ 236.56 -- a difference of 182.99 in syntactic constructions.

Individual analysis of the five types of syntactic constructions represented in Table 5 further sustains the disparity between the two sets of papers. Christensen (1967) observed that free modifiers (modifying structures) occur frequently in the writing of competent writers. The difference of 19.44 (all free modifiers) in the two sets of papers gives credence to Christensen's assertion. It means then that the high-rated papers in this study exploited one and three-fifths times as many free modifiers as did the low-rated papers. Looking at final free modifiers in the second row of Table 1, the frequency of this syntactic type in the low-rated set of papers is 7.60 less than its

incidence in the high-rated set of papers. Final free modifiers are noted as characteristic of competent writers (Cooper, 1984). The exploitation of adjectival modifiers by both sets of papers, as shown in the third row of the same table under review, shows that the high-rated papers used 120.45 per 100 T-units more than the low-rated set. Hunt (1965) observed that one of the features of good writers is the amount of adjective modification of all types (word, phrase, clause) around the noun.

On the level of non-finite verbs, the high-rated set of papers employed almost two times as many of these syntactic features as did the low-rated set of papers -- 47.00 to 25.00. Non-finite verbs in a piece of writing are said to indicate the richness of the writer's syntactic repertoire (Waston, 1979). The row for dependent clauses in the same table again reveals a consistent edge of 13.50 per 100 T-units by the high-rated set of papers over the low-rated ones. In persuasive writing where dependent clauses are pressed into service to express distinctions through the subordination of ideas (Cooper, 1984; Crowhaust, 1980; Perron, 1977), this difference can be quite significant. Wadell, et al., (1983) reinforce this significance by describing dependent clauses as essential sentence-structure components which enable the writer to achieve variety and style in discourse. Else someone wonders why the pilot study data (page 81) on certain syntactic constructions per

100 T-units are much lower than those for the research, the following explanation is volunteered.

First, the two sets of papers examined in the pilot study comprised only two papers, respectively, while the two sets of papers for the research consisted of five papers respectively. Second, the students who generated the writing samples for the pilot study wrote after they had successfully completed a summer session in English 015, a preparatory course for English III. Unlike the students who produced the writing samples for the research, the pilot study writers had yet to enroll in English III in the Fall of 1985. The two weeks' attendance in English III by the writers for the research might have, in part, been responsible for the difference. Finally, the writers for the pilot study and those for the research were entirely different groups with varying capabilities.

#### Research Question 2

How do the two sets of papers rated high and low, respectively, in holistic scoring compare in types and frequencies of cohesive ties per 100 T-units?

To ascertain the answers to the above research question, the following procedures were undertaken. First, the frequencies of cohesive ties per 100 T-units in the five papers rated high and the five rated low respectively was calculated through the formula stated in Step I, page 38. This gave a total of 405.48 cohesive ties per 100 T-units for the high rated set of papers and 275.79 for the low-rated papers (see Table 2). Then the frequency of each type of

cohesive tie per 100 T-units for the respective sets of papers was ascertained by dividing the total number of frequencies of the types under review by the number of T-units in the set of papers concerned, and multiplying by 100:

$$\frac{\text{Total No. of References}}{\text{Total No. of T-units}} \times \frac{100}{1}$$

The results of these operations are presented in Table 2.

Table 2

Comparison in Terms of Cohesive Ties

Cohesive Ties per 100 T-units in the Writing of Five Freshmen Scoring High and Five Scoring Low on Persuasive Writing Task

Cohesive Ties	High	Low
All References	94.86 (a)	59.56 (b)
Comparatives	11.45	0.0
Substitution	2.25	0.0
Ellipsis	0.00	0.0
All Conjunctive Ties	32.37	19.04
Additives	12.68	4.74
Adversatives	6.60	4.30
Causals	5.55	4.90
Temporary	7.54	5.10
All Lexical Ties	278.25	197.19
Repetition	101.00	120.0
Synonyms	10.05	0.0
General Items	15.40	7.49
Collocations	151.80	69.70
Total	405.48	275.79

- (a) Frequencies per 100 T-units, based on a sample of 93 T-units in five papers rated high in holistic scoring.
- (b) Frequencies per 10 T-units, based on a sample of 80 T-units in five papers rated low in holistic scoring.

The total frequencies of cohesive ties per 100 T-units in five papers rated high, based on a sample of 93 T-units amount to 405.48. This gives 4.36 per T-unit. For the low-rated papers with 80 T-units, the frequencies of cohesive ties per hundred T-units were 275.79 and a total of 3.45 per T-unit.

From the data in Table 2 above, it could be inferred that on a general level analysis, the five sets of papers rated high in this study used more cohesive ties than their counterparts rated low. On a specific level of analysis, there is constant disparity in the incidences of each of the different types of cohesive ties used by the writers of the two sets of papers rated high and low, respectively, in holistic scoring. For example, the high rated papers employed 94.86 references compared to the low-rated 59.56 per 100 T-units -- a difference of 35.30. Whereas the high rated papers in Table 2 used 11.45 comparatives per 100 T-units, the low rated set made no use of these cohesive ties at all. Comparatives are important signals for clarifying the relationship between particular words or ideas in a piece of writing; for this reason they are a significant variable for comparing the writing performance of groups (Cooper, 1984). The data in Table 2 for Ellipsis and Substitution show total absence of these cohesive types in the two groups of writers probed in this study.

As represented in Table 2, the two sets of papers were far apart in their exploitation of conjunctive ties. The high-rated group used almost double the number employed by the low-rated set of papers per 100 T-units: 32.37 to 19.04. The importance of this wide gap is that it has been observed that good writers have the inclination to extend the idea introduced in a given T-unit more often than do the poor writers (Witte & Faigley, 1981; Cooper, 1984). It is to be observed that the two groups of papers made use of the four sub-categories of conjunctive ties investigated in this study with nearly the same degree of frequency, except in their use of additives, where the low-rated papers utilized only 4.74 to the high-rated's 12.68 per 100 T-units.

Looking at the row for All Lexical Ties in Table 2, the figures show that in a given sample of 100 T-units the high rated group of papers would employ 278.25 lexical ties to 197.19 by the low rated papers -- a difference of 81.06. The predominance of lexical ties in the two groups of papers under review in this study supports previous assertions. Witte & Faigley (1981) described lexical cohesion as the predominant means of connecting sentences in a discourse. Lexical ties are seen by Cooper (1984) as the most interesting and important means through which writers achieve textuality. The need for lexical ties in persuasive writing task is demonstrated by the fact that they constituted 70 percent of all cohesive ties used by the two groups of papers

under review in Table 2. The difference in the incidence of lexical repetitions in the two sets of papers is noteworthy. While repetitions occurred 120.00 times per 100 T-units in the low-rated papers, or 61 percent of all lexical ties in this group of papers, the high rated papers used repetitions only 101 times, or 36 percent of their total input of this particular cohesive tie.

The low-rated set of papers employed no synonyms at all, and it could be inferred that the absence of these important cohesive features competent writers use to achieve flexibility and freshness in their writing accounts for the larger lexical repetitions in this group of papers. For every 100 T-units, the high-rated papers would have 10.05 synonyms in their writing. Both groups of papers used superordinate terms to achieve lexical cohesion, but the disproportionate nature of the exploitation could not be attributed to chance: 15.40 for the high-rated group of papers, and 7.49 superordinate terms per 100 T-units for the low-rated group. This means that the writers of the high-rated papers were able to classify a previously mentioned word, phrase or clause under a superordinate term. Finally, the frequencies of lexical collocations per 100 T-units in the high-rated set of papers presented in Table 2 amount to 55 percent of all lexical ties used by this group. On the other hand, collocations in the low-rated papers

account for only 35 percent. The absence of synonyms and collocation in the set of papers rated low in holistic scoring is a serious omission, as both features are important elements of writing quality (McCulley, 1985).

### Research Question 3

Are papers which are high in certain syntactic constructions also dense in cohesive ties?

To ascertain the answer to the above research question, the figures for each of the five types of syntactic constructions for each of the two sets of papers rated high and low, respectively (see Table 1) were summed up, and the results entered in appropriate columns in Table 3. Then, a frequency count of cohesive ties in the two sets of papers respectively was done. The resulting total was divided by the number of T-units applicable to each set of papers and dividing by 100. For example:

$$\frac{\text{Total No. of CT}}{\text{Total No. of T-Units}} \times \frac{100}{1}$$

The results of this procedure are presented in Table 3.

Explained in words, the five papers rated high in holistic scoring and which had the higher syntactic fluency of 419.55 also had more cohesive ties of 405.48 per 100 T-units. On the other hand, the low-rated five with the lower syntactic fluency of 236.56 had likewise a lower rate of cohesive ties per 100 T-units: 275.79. These data are also presented in Table 3.

Table 3

Frequencies per 100 T-units of Syntactic  
 Constructions and Cohesive Ties in the Five Papers  
 Scoring High and Five Scoring Low on a  
 Persuasive Writing Task

	High	Low
All Syntactic Constructions	419.55(a)	236.56(b)
All Cohesive Ties	405.48	275.79

- (a) Frequencies per 100 T-units, based on a sample of 93 T-units in five papers rated high in holistic scoring.
- (b) Frequencies per 100 T-units, based on a sample of 80 T-units in five papers rated low in holistic scoring.

## CHAPTER V

### SUMMARY, CONCLUSIONS, RECOMMENDATIONS

This chapter includes a summary of the study, conclusions and discussion of each research question, and recommendations for further research and for teaching composition.

#### Summary

The purpose of this study was to investigate certain predetermined types of syntactic constructions and cohesive ties college freshmen employ in a persuasive writing task. To accomplish this purpose, two sets of papers rated high and low, respectively, in holistic scoring, was compared in terms of types and frequencies of certain syntactic constructions and cohesive ties per 100 T-units. The following research questions were posed:

#### Research Question 1:

What comparisons exist between the two sets of five papers rated high and low, respectively, in holistic scoring, in terms of types and frequencies of certain syntactic constructions per 100 T-units?

#### Research Question 2:

How do the two sets of paper rated high and low, respectively, in holistic scoring compare in types and frequencies of cohesive ties per 100 T-units?

#### Research Question 3:

Are papers which are high in syntactic constructions also high in cohesive ties?

The study was conducted at an urban university in September, 1985. Writing samples for the study were generated by freshman students enrolled in twelve sections of English III. This is a first semester basic writing course at the University for any first semester freshman who qualifies for enrollment, either through a diagnostic screening or through a successful semester in English 015, a preparatory class for English III.

The writing task was administered by the classroom teachers in the second week of September, 1985 during the usual class time. To insure anonymity, each original writing sample was photocopied and coded in such a manner as to conceal the writer's name and section and the teacher's name. Then, the originals were promptly returned to the instructors for marking and grading. The photocopied writing samples were holistically scored by three experienced teachers of college freshman composition who were currently enrolled as doctoral students in English education at the University of Maryland. The scoring was done on a 1-8 scale (8 being the highest score). This scale was established by the Educational Testing Service in 1975. The ratings were based on a three-level "Criteria for Holistic Rating of a Persuasive Writing Task" (high: 7-8; middle: 5-6; low: 1-4) the investigator adapted from Cooper's "Holistic Evaluation of Writing" (1977).

Before the actual scoring, the raters practiced "normalization of scores" with several copies of the writing samples: extra photocopies were made available for this exercise and were not included in the actual scoring samples. The rationale for "normalization" in essay scoring is that when experienced teachers of writing with similar background or training spend some time scoring several papers together, each explaining his considerations for rating a paper the way he did, there is tendency for their subsequent scores to be homogeneous (Cooper & Odell, 1977; Odell, 1980; Sweedler-Brown, 1985). As each of the essays were scored by three raters, an analysis of each rater's scores was done and inter-rater agreement determined through the use of Frick & Semmel (1978) observer agreement measure.

After the scoring of the writing samples, further analysis of these essays included a frequency count of T-units, types of syntactic constructions and cohesive ties in ten essays (five rated high and five rated low in holistic scoring) per 100 T-units. The investigator was assisted by a colleague-volunteer, a doctoral student currently enrolled in English Education at the University of Maryland. When differences in frequency count or in determination of the types of syntactic constructions persisted after two independent recheckings, they were resolved by discussion and consensus. Then a comprehensive, comparative description of the two sets of papers was undertaken based on the figures

generated by the frequency count and calculation outlined above in Chapter Four.

Conclusions: Research Question 1

The answer to the research question which sought the comparison between the two sets of five papers rated high and low, respectively, in holistic scoring, in terms of types and frequencies of certain syntactic constructions per 100 T-units was ascertained. As indicated in Table 5, Chapter IV, the ten writers of the two sets of papers in this study used all five types of syntactic constructions, as it is predicted that college freshmen would employ in their persuasive writing task (all free modifiers; final free modifiers; adjectival modifiers; non-finite verbs (gerunds) and dependent clauses) (Cooper, 1984; Faigley, 1979; Gebhard, 1978). Table 5, however, reveals a steady imbalance between the two sets of papers in the frequencies of their exploitation of the different types of syntactic constructions. For example, in regards to two sets of papers whose syntactic data are presented in Table 5, the writers of the high-rated set of papers could be inferred to have acquired a greater working proficiency and confidence in the use of non-finite verbs (gerunds) than have the writers of the low-rated papers.

Discussion: Research Question 1

Inferring from Table 5 and from the conclusions made above, it is clear that the types of syntactic constructions

were not significant variables between the two sets of papers rated high and low, respectively, in holistic scoring, since both sets employed all five syntactic constructions. In the context of research question 1, it seems that the raters consciously or unconsciously may have made elaboration and syntactic flexibility one of the prime factors in their assessment of writing quality. This might explain why the set of papers with higher frequencies of certain syntactic constructions scored higher in holistic rating than the set that used fewer frequencies of syntactic constructions. It must be noted, however, that the two raters who assisted the investigator to score the writing samples did not have any prior knowledge of the scope and specifics of the study. Therefore, whatever biases entered their judgment their rating of the writing samples were valid professional biases which are unavoidable in scoring composition. Finally, it is important to emphasize here that no one is saying or believes that facility with syntactic constructions or syntactic fluency is the only variable of writing quality. The stance in this study is that facility with certain syntactic constructions is a major aspect of good writing and the information in Table 1 vindicates this for the authors of the writing samples for the study.

#### Conclusions: Research Question 2

The research question that inquired how the two sets of papers rated high and low, respectively, in holistic scoring

compare in types and frequencies of cohesive ties per 100 T-units was ascertained to be in favor of the high rated set of papers with a difference of 129.69 ties over the low rated set. The low rated set of papers in this study did not use all the five cohesive categories or types (all references, substitution, ellipsis, all conjunctive ties, all lexical ties); the set did not employ Substitution and Ellipsis. From the notion that competent writers are more likely to create fusion in syntax by dropping a word (ellipsis) or to avoid unnecessary repetition by using a substitute (Cooper, 1984), it could be suggested that the writers of the ten papers whose data of cohesive ties are presented in this table have yet to develop the writing confidence to utilize these two types of cohesive ties. It also did not make use of important sub-categories (comparatives and synonyms) whose ramifications in good writing were noted in Chapter IV (see also Table 2). Likewise, as indicated in Table 2, the high-rated set of papers demonstrated more facility with additive conjunctive ties than did the low-rated group of papers. This edge probably resulted from the conscious effort by the writers of the high-rated papers to develop their argument by coordinating several assertions (Cooper, 1984). Another point worth mentioning is the disparity in the use of conjunctive repetitions by the two sets of papers. Table 2 shows that the low-rated set of papers employed more conjunctive repetitions than did the high-related set of

papers. This difference suggests that the writers of the high-rated papers in Table 2 made some deliberate efforts to avoid unnecessary repetitions of the same words by using other cohesive means to give fusion to their ideas and variety to their writing.

#### Discussion: Research Questions 2

As noted above, and as the data in Table 4 reveal, the exploitation of cohesive ties, as was the case with syntactic constructions, was a major variable in the raters' determination of quality in the two sets of papers rated high and low, respectively, in holistic scoring. The theoretical explanations about how the different types of cohesive ties differentiate between good and poor writing have been offered in detail in the presentation of findings in Chapter IV. It is important, however, that cohesive ties as examined in this study be put in their functional perspective in relation to coherence, otherwise, someone may misunderstand their scope as variables of writing quality. Coherence as defined by composition texts is the quality which enables a reader to sense a flow of meaning in a particular paragraph organized according to some model of development (Fahnestock, 1983). Markels (1984) sees coherence as an aspect of textual unity resulting from orderly arrangement of recurrences existing already in the text. She makes cohesion -- a patterned totality, the sine-qua non of coherence. Cohesion and

coherence are said to interact to a great degree in any effective writing (Witte & Faigley, 1981). Accordingly, cohesion analysis will not fully explain the coherence of any written discourse, but will account for a major portion of the factors that contribute to coherence (Cooper, 1984).

It must be noted that the present study was not undertaken with the presumption that cohesion explains all of coherence, or that cohesion is the only single predictor of good writing. In its comparative perspective, the thrust of this study in relation to cohesion analysis was to compare two sets of papers rated high and low, respectively in holistic scoring, in their utilization of the different cohesive ties per 100 T-units and make some relevant inferences about writing quality from ensuing results. It is, therefore, pertinent to note that cohesive ties as used in this study, are concrete means of describing the differences between good and poor writing. Consequently, the findings and conclusions reported here should be seen as insights and not as a credo of writing competence.

#### Conclusions: Research Question 3

The research question whether the set of papers which are high in syntactic constructions are also high in cohesive ties was affirmatively ascertained. The set of five papers rated high in holistic scoring and which was high in syntactic constructions (419.55) was also dense in cohesive ties (405.48) per 100 T-units. Conversely, the set of five

papers rated low in holistic scoring and which had the low syntactic construction of 236.56, employed fewer cohesive ties per 100 T-units.

The results give credence to the notion that writers who achieve high syntactic fluency are also more inclined to use more cohesive ties to weld their sentences together as a single text. The logical interrelationship of propositions inherent in a persuasive writing task makes this demand functionally imperative (Crowhaust, 1980; Perron, 1977; San Jose, 1972).

#### Discussion: Research Question 3

The corresponding high syntactic fluency and larger cohesive ties in the set of papers rated high in holistic scoring should not be dismissed as accidental. As all writing, especially the persuasive writing task, is a rhetorical act on paper, good writing then requires the writer to be aware of his reader, his audience, by presenting his ideas in smooth logical flow. In a persuasive writing task the effective writer achieves or satisfies this rhetorical obligation through appropriate manipulation of syntactic patterns (Gebhard, 1978; Combs, 1978; Morenberg, et al., 1978), and through logical coordination and subordination of ideas (Crowhaust, 1980; Perron, 1977; San Jose, 1972; Cooper, 1984). All of these writing features make for well elaborated text, and hence good writing

demands the building of bridges -- transitions or connections between sentences that make up the text. This may explain the high correspondence of syntactic fluency and larger number of cohesive ties in the set of papers rated high in holistic scoring in this study.

#### Recommendations for Further Research

The fact that the findings of this study support the importance of syntactic fluency and cohesive ties as major variables of writing quality makes further research on these two writing features highly desirable. It is suggested that subsequent studies probe the following specific areas.

1. Research in the writing process with protocol analysis specifically focused on how, what and when good and poor writers make decisions about certain syntactic constructions and cohesive ties they use in their writing task. The findings from this type of research could provide insights about effective teaching of the two important writing features.
2. The writing mode for further examination of these two writing variables should continue to be based on a persuasive writing task, as this mode exerts maximum demands for fluent writing task, as this mode exerts maximum demands for fluent use of varied syntactic constructions and cohesive ties. The emphasis, however, should now be focused on the relationship between these two indexes of quality writing and different types of persuasive topics.

Recommendations for Teaching

In recent years some educators and writing researchers have suggested that the teaching of writing in schools and colleges move away from the concept of writing as the students' debt to the teacher (Mertz, 1979; Applebee, 1978). With this approach, students write for the teacher and in response to his assignments. In this situation students write without motivation, and writing then becomes a mechanical act to get over with. When writing is taught in this manner, teachers become mere prescriptors and wielders of red pens or pencils whose preoccupation is to quibble over mechanics and spelling and then reward or penalize the students with "appropriate" letter grades (Burling, 1974; Powell, 1985; Herrington, 1985).

To continue to teach writing as observed above is said to deny the students the opportunity to learn through the interactive and decision-making process which writing is (Griffin, 1985; Herrington, 1985; Barnes, 1976). When students are encouraged to use writing as a learning tool -- a learning process (Emig, 1972; Flower & Hayes, 1977) they will be actively engaged in planning their writing, making decisions about how to effectively reach their readers, juggling words, phrases, sentences -- ideas, deliberately to achieve meaning in a smooth, cohesive flow of information. The following recommendations for teaching writing are based on the findings of this study.

1. Teach sentence-combining as an aid to combating fragmentation in students' writing and thereby encouraging syntactic flexibility, semantic clarity and contextual variations.
2. Teach students to use marked connectives and transitions (cohesive ties) as discussed in this study. The teacher should insist on explicit use of connectives at least during the first half of the semester.
3. Encourage free-writing expression at the beginning of class or at the end to help students capture instant ideas for further discussion and writing. Free-writing if not handled haphazardly can be an effective approach to encourage and extend students' facility with cohesive ties and certain syntactic constructions and thus enable them to experiment with sentences of varying lengths.
4. Give special attention to the use of substitution, ellipsis and synonyms -- cohesive features that students who generated the writing samples for this research did not exploit. Similar emphasis should be given to the use of comparatives in students' writing. These syntactic features are important signals for clarifying the relationships between particular words or ideas in a piece of writing. The low-rated set of papers discussed in this research failed to employ any comparatives. Efforts should be made to make these features part of students' vocabulary.

APPENDIX A

THE WRITING TASK

Date: August 15, 1985  
From: Mr. Sydney E. Onyeberechi  
To: \_\_\_\_\_  
Topic: Request to Use Your English III to  
Generate Writing Samples

Dear Colleague:

I have permission to solicit your cooperation to use your English III to generate writing samples for my dissertation. My study deals with certain features of college freshman writing and quality ratings.

The writing task which is a one-shot activity will be administered by the classroom teacher during the second week of September, 1985. I will provide copies of the writing task for as many students as there are in your class.

What I am asking you to do for me is to administer the writing task to your students, as if it were your usual class assignment. In other words, students should not be told that the writing task comes from any other source other than their teacher.

This research is in no way an evaluation of any particular teacher, or class, or individual student. It is an investigation of which writing features being studied are utilized by writers whose papers are scored low and high respectively in holistic rating. To maintain anonymity, I shall xerox each writing sample original in such a way as to conceal each writer's name and class. Then, the originals will be promptly returned to the teacher for marking and grading.

I very much appreciate your cooperation in this endeavor, and I hope we shall all be professionally wiser through this educational partnership. I shall be happy to share my dissertation with any colleague who might express interest in same in the future.

Please use the response-slip to furnish the information requested and return same to me in the enclosed stamped, self-addressed envelope.

Sincerely,

Sydney E. Onyeberechi  
(301) 439-4971 (home)

cc: Chairman

RESPONSE-SLIP

English III \_\_\_\_\_ Section \_\_\_\_\_

Total Number of Students \_\_\_\_\_

Class Schedule \_\_\_\_\_

Instructor \_\_\_\_\_

PLEASE, RETURN THIS SLIP BY AUGUST 30.

Instruction:

1. Length of paper (500 words - write on every other line).
2. You have one hour and twenty minutes to write.
3. provide a suitable title for your paper.
4. When you finish your essay, take time to look over what you have written to make sure that it is your best.
5. Proofread your paper carefully before submitting it.
6. Write your name and page number at the top of each sheet of paper.

The Topic:

Students at your school express their interest in having on-campus dormitories. At the same time, many students complain they can't find the books and the magazines they need to write their research papers in the University library.

Suppose your school has just received a large sum of money to build dormitories, or to enlarge and improve library facilities at the University, and the administration has invited recommendations from the students.

Write a statement which represents your own recommendation to the administration, making it as logical and persuasive as possible. Remember your writing task is to persuade the administration to spend the money according to your recommendation. (Use facts, details, and examples to support your choice).

APPENDIX B

THE RATER'S SHEET

Table 4

A Summary Sheet of Holistic Scoring  
of Ten Papers Rated High and Low by Three Raters

A Persuasive Writing Task

Paper No.	Rater #1	Rater #2	Rater #3
#07	8	7	7
#16*	3	3	4
#19	7	7	8
#38	8	8	7
#56*	4	3	4
#64*	3	2	3
#65*	3	3	3
#70	8	7	7
#77*	2	2	3
#82	7	8	7

\*Papers rated low in holistic scoring in a scale of 1 to 8.

Paper #7

Holistic Scores = 8, 7, 7

## IMPROVING THE LIBRARY RESOURCES FACILITY

The administration here at the university should do some improving of the library facilities.<sup>1</sup> The Periodicals Library in Building 39 needs more storage space for old magazines, needs more microfilm machines, and an on-hand list of current magazine titles for students.<sup>2</sup>

First, only magazines under a year old are kept on the shelves.<sup>3</sup> If the administration would provide funds to the library, the learning center would be greatly enhanced by the fact that, it would have a storage area for all magazines within 10 years or even 5 years.<sup>4</sup> Many of my friends have gone into the library to get magazines dated only as far back as February 1985, only to be told that the magazine was discarded because of lack of storage spaces on the shelves.<sup>5</sup> God help the student that wants an article on microfilm, which leads to my second point of consideration.<sup>6</sup>

The microfilm machines in the library are in a state of total frenzy?<sup>7</sup> In this case, magazine articles are not the problem,<sup>8</sup> for the articles on microfilm are dated as far back as June 1962.<sup>9</sup> Machines are the problem here.<sup>10</sup> The library only provides 4

microfilm readers, 1 of which doesn't work at all.<sup>11</sup> When the Board of Trustees makes recommendations as to where the money should go, it should be clearly stated that funds go into the buying of at least 8 more devices through which microfilm can be read.<sup>12</sup> For example, when an instructor sends 8-10 of his students to the library to do research on a certain article on the microfilm machine, only 3 people at a time can use them.<sup>13</sup> This causes other students to wait impatiently until the person using the machine is finished.<sup>14</sup> This process can take as long as an hour to an hour-and-a-half.<sup>15</sup>

The last and most important point of concern is the fact that there is no on-hand list of current magazine titles for students to use as a guide.<sup>16</sup> This is due to the fact that the administration has given only enough money for one set of master files, which is kept in the serialists' office.<sup>17</sup> If funds were used correctly, a set of files could be placed on the library floor so that students could see which magazines are in stock and which are not.<sup>18</sup> Since nothing like that has been done, students have to constantly nag and continually annoy the serialist for periodical titles on file.<sup>19</sup>

In conclusion, instead of the Administration spending money on petty items, the Board of Trustees should take a tour of the library and see what deterioration is being caused because of a lack of funding.<sup>20</sup> The library is the heart and backbone of the university,<sup>21</sup> and something must be done to keep its condition in ship-shape order.<sup>22</sup>

(22 T-units)

Criteria for Holistic Rating  
of a Persuasive Writing Task

Did the writer succeed in convincing his intended audience? This determination is made by the rater based on the instruction about the writing task on the assignment sheet.

Read the essay quickly and rate it as a whole without pondering the parts. Use the following guidelines:

- HIGH (7-8): The writer effectively succeeded in convincing his intended audience.
- MIDDLE (5-6): The writer fairly succeeded in convincing his intended audience.
- LOW (1-4): The writer poorly succeeded in convincing his intended audience.

\*The above criteria were developed by the investigator.

APPENDIX C

PILOT STUDY

Pilot Study

During the summer session of 1985, a pilot study of this research was undertaken. Four freshmen enrolled in English III at an urban university in the District of Columbia were used to generate writing samples for the pilot study. The subjects were comparable to the actual group used in the study experiment, and the writing task administered was the same as the one written on by the subjects in the actual research. The mode chosen for the research was the persuasive writing task for the reasons articulated in the rationale. In this pilot study, the general purpose was primarily exploratory -- to familiarize the investigator with the steps involved in conducting the actual research. A week before the pilot study, the investigator conducted a series of on-the-site random interviews with several students on the campus of this urban university. This was done in an effort by the investigator to determine what interests and concerns were uppermost in the students' scale of things. The preponderance of the respondents was almost equally divided between those who expressed interest in seeing the university build on-campus dormitories for students and those who expressed concern about the existing library facilities at the University.

The writing task for this research (Appendix A) was constructed to reflect these interests.

The pilot study subjects had 80 minutes to write the essay. Each subject was given an assignment sheet which contained the necessary information about the writing task. Each paper bore the name of the writer, but each name was deleted by the investigator and replaced with a letter symbol unrelated to the writer's name. The four papers generated by the subjects were scored holistically by the investigator and two other volunteering colleagues unconnected with the scoring of the sample papers for the actual research. The three raters were experienced teachers of college freshman English and shared an average of eight years on the job. Holistic scoring involves the giving of a numerical score that represents the rater's opinion of the overall quality of the essay. In this scoring approach, the raters are asked to read the essay quickly and to score it as a whole without pondering the parts (Freedman, et. al., 1983).

To score the four sample papers generated for the pilot study, each of the raters was given a copy of "Criteria for Holistic Rating of a Persuasive Writing Task" prepared by the investigator (Appendix B). The scoring was done on a 1 to 8 scale (8 being the highest score). This score was established by the Educational Testing Service in 1975. Before the actual scoring, the raters practiced "normalization of scores" with several of the writing samples - extra copies of the writing samples were made available for this exercise and were not included in the actual scoring samples. It is to be noted that this prescoring practice,

termed above as "normalization of scores," elicits explanations from the raters of why they scored each paper the way they did. The rationale for "normalization" in essay scoring is that when experienced teachers of writing with similar background or training spend some time scoring several papers together, each explaining his/her consideration for rating a paper the way he/she did, there is a tendency for their subsequent scorings to be homogeneous. This homogeneity makes for higher inter-rater agreement (Cooper & Odell, 1977). After the normalization practice, the raters scored the four writing samples. Three photocopies of each of the original writing samples were made available, as each paper was independently read and scored by the three raters, respectively.

The result of the scoring is presented in Table 1. The homogeneity of the figures in this table clearly supports the rationale for "normalization of scores" in essay scoring by raters with similar background or training. As each of the essays was rated by three scorers, an analysis of each set of ratings was done. This type of analysis is termed observer agreement and is defined "as the consistency among observers when they are simultaneously coding the classroom events" (Frick & Semmel, 1978, p. 159). In this study, the observers were the raters and classroom events were the writing samples. Agreement was determined by comparing single scores assigned to the four essays by different raters. As

demonstrated in Table 1, many of the ratings were of similar values or are only one point apart, where different. This shows that the raters tended to score the essays very much like one another. This homogeneity of scores gives credence to the value of the ratings. Inter-rater agreement generated from data in Table 1 below is 91%. Crowhurst, et al (1979) in their study of Audience and Mode of Discourse Effects on Syntactic Complexity obtained inter-rater agreement of 96% to 98%. Likewise, an inter-rater agreement of 95% was reported by Moslemi (1975) in a study of creative writing essays.

Table 5

Pilot Study: Summaries of Holistic Scoring of Three Raters

Papers	Rater #1	Rater #2	Rater #3
#R*	4	4	3
#C	7	7	8
#T*	3	4	4
#M	7	8	8

\*Paper rated low in holistic scoring in a scale of 1 to 8.

The three raters are experienced teachers of college freshman English and share an average of eight years on the job.

### Pilot Study: Procedures for Analysis of Data

In both the pilot study and the actual research, the interest was focused on the difference between two sets of papers rated high and low, respectively, in holistic scoring. The difference was determined in terms of types and frequencies of certain syntactic constructions and cohesive ties per 100 T-units, as demonstrated by the two sets of papers. The primary mode of analysis was a comprehensive, comparative description of the two sets of papers based on the figures generated from the operations outlined below. It must be noted that calculating syntactic constructions and cohesive ties in the two sets of papers per 100 T-units provides a common denominator and basis for a valid comparison (Cooper, 1984; Witte & Faigley, 1981).

#### Research Question 1

To ascertain the answers to the question -- what comparisons exist between the two sets of five papers rated low and high respectively, in holistic scoring, in terms of types and frequencies of certain syntactic constructions per 100 T-units? -- the investigator read and examined ten papers (five rated "high" and five rated "low" in holistic scoring) in order to study and identify lengths of syntactic units and types of syntactic constructions as defined and demonstrated earlier. The idea of studying ten papers extensively from a

number of scored writing samples was adopted from Cooper (1984) and Witte & Faigley 1981), whose respective studies reviewed in Chapter Two provided a model for this study. As the pilot study generated four papers on the whole, and two of these were scored high, and the other two were scored low in holistic scoring, the two sets of papers involved in the pilot study contained two essays respectively and constituted the focus of comparison here.

To determine the number of certain predetermined syntactic constructions in the two sets of papers, respectively, the incidences of the following syntactic constructions (all free modifiers, final free modifiers, all adjectival modifiers, non finite verbs (gerunds), and dependent clauses were noted.) Then the incidence of each of the above types per 100 T-units was found by dividing the number of each type of syntactic construction by the total number of T-units in each of the two sets of papers and multiplying by 100.

$$\frac{\text{No. of Syntactic Constructions}}{\text{No. of T-units}} \times \frac{100}{1}$$

The above formula and those used to ascertain answers to research questions 2 and 3 were developed by the investigator from the verbal descriptions furnished by Cooper (1984) and Witte & Faigley, (1981) in their respective studies reviewed in Chapter Two of the study.

The results are summarized in Table 2. What follows is a descriptive, comparative analysis of these results as they relate to the pilot study.

Table 6  
Pilot Study

Syntactic Constructions per 100 T-units in the  
Writing of Two Freshmen Scoring High and Two  
Scoring Low on a Persuasive Writing Task

Syntactic Constructions	High	Low
All free modifiers	39.38 (a)	27.45 (b)
Final free modifiers	16.17	9.43
All adjectival modifiers	81.26	53.00
Non-finite verbs (gerunds)	15.94	11.60
Dependent clauses	34.78	26.09

(a) Frequencies per 100 T-units, based on a sample of 69 T-units in two papers rated high in holistic scoring.

(b) Frequencies per 100 T-units, based on a sample of 51 T-units in two papers rated low in holistic scoring.

The analysis of these results reveals that the four freshmen from the university who generated the writing samples for the pilot study made use of five different types of syntactic constructions in varying degrees of frequencies. Information in Table 6 shows that the two papers rated high in holistic scoring used syntactic constructions more frequently than the two rated low. Consistent disparity in the figures for each of the five types of syntactic constructions (all free modifiers, final free modifiers, all

adjectival modifiers, non-finite verbs (gerunds), dependent clauses) suggests that the high rated papers were able to generate more information in each T-unit to qualify, elaborate, specify or modify a given point. For example, in any given 100 T-units of the writing of the four authors of the pilot study, the high-rated set would use 187.53 free modifiers, adjectival modifiers, non-finite verbs (gerunds), dependent clauses, while the set rated low would only use 127.6, with a difference of 60.00 in certain selected syntactic constructions.

A row-by-row analysis of the five types of syntactic constructions shown in Table 6 further highlights the difference between the two sets of papers. As has been pointed out earlier, Christensen (1967) noted that free modifiers (modifying structures) occur frequently in the writing of competent writers. This assertion is supported in this study by a difference of 11.93 in the two sets of figures in the first row of Table 6. This means that the high-rated papers in the pilot study used one and a half times as many free modifiers as did the low-rated papers. Examining the third row from the top of the same table, we notice a wider gap in the use of adjectival modifiers by the writers of the two sets of papers. Hunt (1965) who pioneered research on syntactic fluency, observed that one of the characteristics of good writers is the amount of adjective modification of all types (word, phrase, clause) around the

noun. The high-rated papers in the row under discussion used 81.26 adjectival modifiers per 100 T-units as against the 53.00 used by the low-rated papers. This gives a difference of 28.26 per 100 T-units between the two sets of papers. Looking at the row for dependent clauses in Table 6, the high-rated papers again employed more of these syntactic features than the low-rated set with a difference of 8.7. This difference can be quite important in persuasive writing where dependent clauses are needed to express distinctions through the subordination of ideas (Cooper, 1984; Crowhaust, 1980; Perron, 1977). The significance of this difference is further underscored by Waddell, et al. (1983) who described dependent clauses as essential sentence-structure components which enable the writer to achieve variety and style in discourse.

Turning to the row of final free modifiers, the incidence of this structure in the low-rated set of papers is 6.74 less per 100 T-units than its frequency in the high-rated set of papers. Cooper (1984) characterizes this structure as characteristic of competent writers. The two sets of papers were almost on the same level in their use of non-finite verbs (gerunds), with the high-rated set holding a slight edge of 4.34 over the low-rated set. As noted earlier, Waston (1979) observed that the presence of non-finite verbs in a piece of writing is indicative of the richness of the writer's syntactic repertoire. This being

the case, the low incidence of these syntactic structures in the writing of both groups suggests that the four freshmen who generated the writing samples for the pilot study have yet to develop confidence in the use of these particular types of syntactic constructions.

### Research Question 2

To ascertain the answer to the question -- How do the two sets of papers rated low and high, respectively, in holistic scoring compare in types and frequencies of cohesive ties per 100 T-units? -- the following procedures were undertaken. First, the incidence of cohesive ties per 100 T-units in the two pilot-study writing samples rated high and the two rated low respectively was ascertained through the formula demonstrated below. This gives a total cohesive ties of 257.73 for the high-rated papers and 150.29 for the low-rated papers (see Table 7). The next step was to find the incidence of each of the types of categories of cohesive ties per 100 T-units for each of the two sets of papers by dividing the total number of incidences of the category under review by the number of T-units in the group of papers concerned, and multiplying by 100. For example:

$$\frac{\text{Total N of References}}{\text{Total N of T-units}} \quad \frac{100}{1}$$

The results of these calculations are reported in Table 7.

Table 7

Pilot Study

Cohesive Ties Per 100 T-units in the Writing of Two Freshmen Scoring High and Low on a Persuasive Writing Task.

Cohesive Ties	High	Low
ALL REFERENCES	79.13 (a)	53.60 (b)
Comparatives	6.90	0.0
SUBSTITUTION	1.73	0.6
ELLIPSIS	1.47	0.0
ALL CONJUNCTIVE TIES	21.74	15.32
Additives	6.52	3.90
Adversatives	5.07	3.81
Causals	4.35	3.26
Temporary	5.80	4.35
ALL LEXICAL TIES	146.76	80.77
Repetition	30.82	40.58
Synonyms	5.80	0.0
General Items	10.14	5.88
Collocations	100.0	34.31

(a) Frequencies per 100 T-units, based on a sample of 69 T-units in two papers rated high in holistic scoring.

(b) Frequencies per 100 T-units, based on a sample of 51 T-units in two papers rated low in holistic scoring.

Total number of cohesive ties per 100 T-units in two papers rated high based on 69 T-units is 257.73.

Number of cohesive ties per T-unit is 3.74

Total number of cohesive ties per 100 T-units in two papers rated low based on 51 T-units is 150.29.

As can be deduced from Table 3 above from a general level of analysis, the set of high rated papers in this pilot study employed more cohesive ties than the set rated low.

This means that in any given 100 T-units of writing sample the two papers rated high would exploit 257.73 ties, while the two rated low would use only 150.29. Getting down to specific levels of analysis, there is consistent disparity in the frequency of exploitation of each of the different types of cohesive ties by the two sets of papers rated high and low respectively. For example, in their use of reference, the high rated papers made use of this tie almost one and a half times as often as did the low rated papers -- 79.13 to 53.60 per 100 T-units. While the low rated papers in Table 7 did not make use of any comparatives, the high rated ones employed approximately 7 per 100 T-units. As comparatives are sophisticated features for giving clear signals of the relationship between particular words or ideas (Cooper, 1984) in a piece of writing, they are a significant variable of comparison. Both substitution and ellipsis were almost virtually absent from the two sets of papers under review. They were only used 1.73 and 1.47 times respectively per 100 T-units in the papers rated high in holistic scoring. It is maintained that competent writers are more likely to create fusion in syntax by eliding a word, or to avoid repetition by finding a substitute (Cooper, 1984). If Cooper is right, it could be inferred that the four college freshmen who produced the writing samples for the pilot study have yet to develop the writing confidence to utilize these two types of cohesive ties, as defined and demonstrated on page 10 of this study.

The incidence of conjunctive ties in both sets of papers shows that the high rated papers employed 21.74 ties per 100 T-units over the low rated's 15.32 -- a difference of 6.42 conjunctive ties. The significance of this difference is that competent writers have the tendency to extend the idea introduced in a given T-unit more often than do the less competent writers (Witte & Faigley, 1981). It is to be noted that the two sets of papers in the pilot study employed all the four types of conjunctive ties investigated in this study, with the high rated papers holding the edge over the low rated ones in all of them. In their use of lexical ties, the high rated papers used 65.0 more than the low rated ones. In 100 T-units the high rated papers would use 146.76 lexical ties to 80.77 for the low rated papers. The importance of lexical ties in a persuasive writing task is underscored by the fact that they constituted 88.28 percent of all cohesive ties utilized by the two sets of papers in the pilot study. As has been pointed out earlier, Witte & Faigley (1981) described lexical cohesion as the predominant means of connecting sentences in discourse. Cooper (1984) sees lexical ties as the most interesting and important means through which writers achieve textuality. It is no wonder, therefore, that the high rated papers in Table 7 employed 57 percent of all the lexical ties recorded for the two sets of papers, while the low rated only used 31 percent.

Research Question 3

To ascertain the answer to the question -- Are papers high in certain syntactic constructions also dense in cohesive ties? -- the following procedures were followed: The first step was to add all the figures generated for each of the five types of syntactic constructions for the two sets of papers respectively as shown in Table 2. The results of these calculations are entered in Table 3. Then the total number of cohesive ties in the two sets of papers respectively was ascertained by doing a frequency count and dividing the resulting total by the number of T-units applicable to each set of papers and finally multiplying by 100 as demonstrated below.

$$\frac{\text{Total N of CT}}{\text{Total N of T-units}} \times \frac{100}{1}$$

The results of this procedure are represented in Table 8.

Explained further, the two papers rated high in holistic scoring and which had the higher syntactic fluency of 187.53 also had a larger cohesive tie of 257.73, while the low-rated two with the lower syntactic fluency of 127.57 had likewise a lower rate of cohesive ties per 100 T-units. These results support the investigator's notion that writers who have achieved high syntactic fluency have also equal need for larger cohesive ties to bind their sentences together as a single text.

Pilot Study

Frequencies of Syntactic Construction and Cohesive Ties 100 T-units in the Writing of Two Freshmen Scoring High and Two Scoring Low on a Persuasive Writing Task

	High	Low
All Syntactic Constructions	187.53(a)	127.57(b)
All Cohesive Ties	257.73	150.29

- (a) Frequencies per 100 T-units, based on a sample of 69 T-units in two papers rated high in holistic scoring.
- (b) Frequencies per 100 T-units, based on a sample of 51 T-units in two papers rated low in holistic scoring.

Summary of Pilot Findings

The findings of the pilot study in response to the three research questions posed in this research showed the set of high-rated papers maintaining a consistent edge over the low-rated ones in the frequency with which it exploited certain predetermined syntactic constructions and cohesive ties per 100 T-units. For example, in any given 100 T-units of the writing of the four authors of the pilot study writing samples, the high-rated set of papers would employ 187.53 free modifiers, adjectival modifiers, non-finite verbs (gerunds), and dependent clauses while the set rated low would use only 127.6. Comparing the two sets of papers in their use of cohesive ties, the high-rated set would employ

257.73 ties in any given 100 T-units; the low-rated would use only 150.29 ties per 100 T-units. It was found that the set of papers with higher syntactic fluency had also more cohesive ties per 100 T-units than the set with lower syntactic fluency.

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