INFORMATION TO USERS

This was produced from a copy of a document sent to us for microfilming. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help you understand markings or notations which may appear on this reproduction.

1. The sign or “target” for pages apparently lacking from the document photographed is “Missing Page(s)”. If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure you of complete continuity.

2. When an image on the film is obliterated with a round black mark it is an indication that the film inspector noticed either blurred copy because of movement during exposure, or duplicate copy. Unless we meant to delete copyrighted materials that should not have been filmed, you will find a good image of the page in the adjacent frame.

3. When a map, drawing or chart, etc., is part of the material being photographed the photographer has followed a definite method in “sectioning” the material. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again—beginning below the first row and continuing on until complete.

4. For any illustrations that cannot be reproduced satisfactorily by xerography, photographic prints can be purchased at additional cost and tipped into your xerographic copy. Requests can be made to our Dissertations Customer Services Department.

5. Some pages in any document may have indistinct print. In all cases we have filmed the best available copy.

University Microfilms International

300 N. ZEEB ROAD, ANN ARBOR, MI 48106
18 BEDFORD ROW, LONDON WC1R 4EJ, ENGLAND
PAPPAS, CHRISTINE CONLEY

THE DEVELOPMENT OF NARRATIVE CAPABILITIES WITHIN A
SYNERGISTIC, VARIABLE PERSPECTIVE OF LANGUAGE DEVELOPMENT:
AN EXAMINATION OF COHESIVE HARMONY OF STORIES PRODUCED
IN THREE CONTEXTS - RETELLING, DICTATING AND WRITING

The Ohio State University

Copyright 1981
by
Pappas, Christine Conley
All Rights Reserved
THE DEVELOPMENT OF NARRATIVE CAPABILITIES WITHIN A
SYNERGISTIC, VARIABLE PERSPECTIVE OF LANGUAGE
DEVELOPMENT: AN EXAMINATION OF COHESIVE HARMONY
OF STORIES PRODUCED IN THREE CONTEXTS -
RETELLING, DICTATING AND WRITING

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Christine Conley Pappas, B.A., M.A.

* * * * *

The Ohio State University
1981

Reading Committee:

Victor M. Rentel
Donald R. Meyer
Arnold M. Zwicky

Approved By

Advisor,
Department of Humanities. Education
To the memory of Cindie Cook
who always listened carefully and responded
thoughtfully to her friends' personal
and intellectual ruminations
ACKNOWLEDGMENTS

This study was supported in part by grants from the National Institute of Education under Contract Nos. G-79-0039 and G-79-0137 to Professors Martha L. King and Victor M. Rentel for the study of early writing development in elementary school age children. I am grateful to Professors King and Rentel for the opportunity to be a part of this project.

My thanks go to the children and teachers who participated in the project as well as to my fellow graduate associates, Ellen Martin Huff, Barbara S. Pettegrew and Lyn Zalesky, who helped collect and prepare the data analyzed in the study. I am especially grateful to Ruqaiya Hasan who shared with me some of her unpublished papers on text, cohesion and cohesive harmony.

My dissertation advisor, Victor M. Rentel, has been an important source of guidance and encouragement, not only when I was writing the dissertation but throughout my graduate career. I am most grateful for his help. I have also benefitted greatly from the thoughtful advice, commentary and criticism of Professors Donald R. Meyer and Arnold M. Zwicky.
Finally, I am grateful to Kristin and Sara for their patience and to George, my best friend, for his constant support and understanding.
VITA

November 9, 1941. . . Born - New Kensington, Pennsylvania
1963. . . . . . . . . B.A., Gettysburg College, Gettysburg, Pennsylvania
1978-1979 . . . . . Teaching Associate, Department of Humanities Education, The Ohio State University, Columbus, Ohio
1980. . . . . . . . . M.A., The Ohio State University, Columbus, Ohio
1979-1981 . . . . . Research Associate, Departments of Early and Middle Childhood Education and Humanities Education, The Ohio State University, Columbus, Ohio

PUBLICATIONS


FIELDS OF Study

Major Field: Reading

Studies in Reading and Writing. Professors Victor M. Rentel and Martha L. King

Studies in Neuropsychology and Neurolinguistics. Professor Donald R. Meyer

Studies in Psycholinguistics. Arnold M. Zwicky
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>VITA</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>x</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1. Aims of Present Research</td>
<td>1</td>
</tr>
<tr>
<td>2. Story Retelling Research</td>
<td>1</td>
</tr>
<tr>
<td>3. Story Telling Research</td>
<td>6</td>
</tr>
<tr>
<td>4. An Integrated Perspective of Language Development: A Synergistic, Variable Model</td>
<td>11</td>
</tr>
<tr>
<td>5. Extending the Synergistic, Variable Model to the Area of Narrative Competence</td>
<td>15</td>
</tr>
<tr>
<td>6. The Present Study</td>
<td>19</td>
</tr>
<tr>
<td>II. RELATED RESEARCH</td>
<td>24</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>24</td>
</tr>
<tr>
<td>2. &quot;Schema&quot;--Its Use in the Present Study</td>
<td>24</td>
</tr>
<tr>
<td>3. Review of Narrative Form Schemes</td>
<td>26</td>
</tr>
<tr>
<td>4. a. Text, Texture and Cohesion</td>
<td>32</td>
</tr>
<tr>
<td>4. b. Grammatical Cohesive Devices</td>
<td>33</td>
</tr>
<tr>
<td>4. c. Lexical Cohesive Devices</td>
<td>41</td>
</tr>
<tr>
<td>4. d. The Formation and Interaction of Identity and Similarity Chains</td>
<td>43</td>
</tr>
<tr>
<td>5. The Cohesive Harmony of Texts</td>
<td>56</td>
</tr>
<tr>
<td>III. PROCEDURES AND METHODS</td>
<td>61</td>
</tr>
<tr>
<td>A. PROCEDURES</td>
<td>61</td>
</tr>
<tr>
<td>1. Procedures for Data Collection</td>
<td>61</td>
</tr>
</tbody>
</table>
a. Story Retelling ............................................. 61
b. Story Dictating ............................................. 62
c. Story Writing ................................................. 64

2. Initial Transcripts ............................................. 65
   a. Procedures for Oral Productions
      (Story Retelling and Story Dictations) ............ 65
   b. Procedure for Written Story Production ............ 66

3. Identification of the "Text" and Parsing Procedures .......... 66
   a. Oral Productions of Story Retelling
      and Dictating Procedures ............................. 66
   b. Written Productions Procedures ...................... 69

4. Definition of the Unit of Text Segmentation ................. 70

5. Cohesion Analysis ............................................ 75
   a. Identification of Grammatical Cohesive Devices .... 76
   b. Lexical Rendering ...................................... 77
   c. Formation of Identity and Similarity Chains ....... 78
   d. Chain Interaction—Cohesive Harmony ................. 80

B. METHODS ....................................................... 81
   1. Subjects .................................................. 81
   2. Research Questions ..................................... 82
   3. Coding .................................................... 83
   4. Data Analysis ............................................ 83

IV. RESULTS ..................................................... 84
   1. Cohesive Harmony ........................................ 85
   2. Cohesive Density ........................................ 89
   3. Clause Complexity and Two Measures of Length ....... 90
   4. Restricted Exophoric Devices ......................... 92
V. DISCUSSION

1. Restricted Exophoric Devices
2. Clause Complexity and Length
3. Cohesive Density
4. Cohesive Harmony
5. Further Consideration of the Cohesive Density and Cohesive Harmony Findings
6. Limitations and Implications

APPENDICES

A. Initial and Retyped Parsed Transcripts of a Retelling Text
B. Example of Cohesion Analysis and Coding of a Retelling Text
C. Example of Cohesion Analysis and Coding of a Dictation Text
D. Example of Cohesion Analysis and Coding of a Writing Text

LIST OF REFERENCES
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Narrative Form Schemes</td>
<td>30</td>
</tr>
<tr>
<td>2. Context MANOVA on Six Story-Text Variables</td>
<td>86</td>
</tr>
<tr>
<td>3. Means and Standard Deviations of Cohesive Harmony by Context</td>
<td>87</td>
</tr>
<tr>
<td>4. ANOVA of Cohesive Harmony for Context Factor</td>
<td>88</td>
</tr>
<tr>
<td>5. Means and Standard Deviations of Cohesive Density by Context</td>
<td>90</td>
</tr>
<tr>
<td>6. ANOVA of Cohesive Density for Context Factor</td>
<td>91</td>
</tr>
<tr>
<td>7. Means and Standard Deviations of Measures of Clause Complexity and Token and Unit Length by Context</td>
<td>93</td>
</tr>
<tr>
<td>8. Mean Squares, F-Values and Levels of Significance on Measures of Clause Complexity and Unit Length for Context Factor</td>
<td>95</td>
</tr>
<tr>
<td>9. ANOVA of Restricted Exophoric Devices for Context Factor</td>
<td>97</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Network for Encoding Devices with Degrees of Implicitness Taken from Hasan (in press b, p. 23).</td>
<td>37</td>
</tr>
<tr>
<td>2.</td>
<td>Chain Interaction Expressing the Actor-Action Relation in Ex. 10</td>
<td>53</td>
</tr>
<tr>
<td>3.</td>
<td>Chain Interaction Expressing Actor-Action-Location Relations in Ex. 10</td>
<td>53</td>
</tr>
<tr>
<td>4.</td>
<td>Chain Interaction Expressing Modifier-Actor-Manner-Location Relation in Ex. 10</td>
<td>54</td>
</tr>
</tbody>
</table>
1. Aims of the Present Research

The major aim of the present investigation was to demonstrate that the development of narrative capabilities is best understood within a synergistic, variable model of language development. To that end, this study compared the cohesive harmony of stories produced by eleven children in three contexts—retelling, dictating, and writing. This analysis showed that while these children's developing narrative capabilities revealed simultaneous progress in all three components of language—form, content, and use—their capabilities were variable depending upon the different circumstances in which children created their stories.

2. Story Retelling Research

Recently cognitive psychologists (cf. Thorndyke, 1977; Mandler and Johnson, 1977; Rumelhart, 1977) have been using story grammars—structural analyses describing the organization or form of stories—as a means to understand human comprehension and memorial processes. In this approach, two major assumptions about story grammars are made: (1) A story consists of a canonical form from which
individual stories are generated. Thus, a story grammar is similar to generative transformation sentence grammar in that it attempts to provide the transformational rules by which individual surface story structures are derived from one underlying deep structure (Mandler and Johnson, 1977). (2) A story grammar represents a competence in stories, usually described in terms of a "schema", which a reader-listener applies to stories in order to understand and remember them. While the second assumption may be a reasonable one to make for adults, it certainly cannot be made for children. Consequently, it is not surprising that several researchers (e.g., Stein, 1978; Stein and Glenn, 1979; Mandler and Johnson, 1977) have explored specifically the manner in which children might acquire aspects of this story grammar or schema and how this developing knowledge might affect their understanding and recall of stories.

Although not all story grammars are identical, there are enough similarities among them so that one, the Stein and Glenn grammar (1979), can serve as an exemplar for explanatory purposes. (See Chapter II for more details of the various story grammars.)

First of all, a story grammar consists of categories or nodes. Each of these categories refers to a specific kind of information or meaning and serves a different function within the story. A simple story
consists of two general categories: a setting and an episode structure. Recursion of episodes and/or embedding within some of the categories can frequently occur; however, since the setting and five episode categories briefly described below are considered to be the primary ones or the higher-order categories; i.e., those most likely to be found in a summary of a story, for example (Rumelhart, 1977), and since most of the research done with children has used one episode stories, the present discussion will be limited to simple stories.

The setting usually includes an introduction of a protagonist and other information such as the locale and/or the era in which the story is to be placed. The episode consists of five categories: initiating event, internal response, attempt, consequence, and reaction. The initiating event category contains some event or action which will make a change in the story environment so as to evoke the formation of a goal. The goal itself, plus affective states and cognitions, which may serve to motivate a character's subsequent overt behavior are included in the internal response category. The subsequently motivated goal-directed actions or behaviors are defined as attempts. The results of the attempts—either attainment or non-attainment of the goal—mark the consequence. The fifth category is the reaction in which a character may respond
to the consequence or broader consequences caused by the goal attainment. Although these five episode categories are primary, Stein (1978) makes a distinction between text structure versus underlying cognitive structure of an episode. Some stories may have one or two episode categories deleted from the surface text structure; nevertheless, these omitted categories are thought of as being present in the underlying cognitive structure since they are inferred during the encoding process. After admitting deletion of one or two categories, there remains a required set of categories to permit a complete episode in text structure. There are three: (1) some reference to the motivation or the purpose of the character's behavior—the initiating event or an internal response; (2) an overt goal-directed action—the attempt; and, (3) the attainment or non-attainment of the goal—the consequence. The setting plus these three necessary episode categories therefore constitute the minimally essential elements of a simple-story text structure.

In studies in which children are involved, short and simple stories are written according to a story grammar. Usually children are read these stories and then asked to retell them. Sometimes these recall protocols are also followed by probe techniques to see if the child understood some aspect of the story not included in his/her recall.
Comparisons of the number of recalled propositions over ages, over various nodes or categories (the basic constituents of a story grammar), over different versions of a story in which the underlying grammar has or has not been violated, and so forth, constitute the basic methodological paradigm. It is these recall comparisons which provide the developmental indices for understanding children's understanding of, or competence in, stories.

Many argue that children's acquisition of this story grammar, usually by first grade, represents an internalized schema by which they can anticipate and predict events in a story. Thus, the reader/listener is an active participant in the story, always reconstructing the story according to his/her internalized structures. But if this is so, as Leondar (1977) has argued, the comprehension of stories and the craftsmanship or stories must in a sense entail similar skills:

The constructive powers of the author and reconstructive ones of the reader may be assumed to spring from a common source. On both counts, then, the development of narrative competence in early childhood invites examination.

(Leondar, 1977, p. 173)

Thus, an exploration into children's own storymaking appears to be an important complement to the story retelling or recall studies.
3. Story Telling Research

Leondar (1977) analyzed the spontaneous stories composed by children ages two to fifteen. Her generalizations about these stories center around children's development of narrative structure or form with a special focus on primary narratives, the stories of five-six year olds. In addition, Leondar provided some interesting insights into children's growing "point of view", a facet of development she believes to have a close interaction with plot structure. Her comments relative to the facts about point of view are relevant to the present research but discussion of them will be postponed until later in this chapter.

According to Leondar, children appear to have a fundamental grasp of narrative syntactic relations by the age of five or six. Their stories reflect "completeness"—i.e., possess a beginning, middle and end. The narrative form or structure, which she calls primary, can be described by four phases: Phase I introduces a state of affairs which is considered continuous or prevailing and is expressed in "stative" rather than in "active" events. Phase II presents a misfortune which disrupts the prevailing state of affairs. In Phase III a counteraction occurs which reverses the misfortunes of the prior phrase. And Phase IV reports some event which restores the normal state of affairs. While these primary narratives of five-six
year olds appear to possess "bare-bone" form, frequently consisting only of an initial description and three events or actions, their elements—the four phases—resemble the required set of categories described by the Stein and Glenn grammar (1979). Although Stein and Glenn have assumed that the structures which would influence or guide story comprehension—namely, the story grammar or story schema—would function in a similar way in children's spontaneous construction of stories, they report critical differences between story comprehension and stories generated by children. In their account, first and second grade children, for example, frequently produce stories which include only setting or Phase I information. Stein and Glenn's findings, therefore, appear to be in conflict with Leondar's conclusions.

On the other hand, Botvin (1977) and Botvin and Sutton-Smith (1977) report findings which are more similar to Leondar's although their approach or perspective for analyzing children's spontaneous stories differs from hers. Their analysis is Propp-like (1968) in its methodology but reflects the influence of paradigmatic analyses such as found in Dundes (1964). For Botvin (1977) and Sutton-Smith, et al. (1976), children's narratives consist of two types of plot units—primary and secondary. Primary plot units are those elements which represent (1) the motivation
or impetus for action or potential action or (2) the resolution of that initial impetus. Narrative N, then, proceeds from A (the impetus—a lack of villainy, for example) to state B (the resolution—lack-liquidated or villainy nullified, respectively), both A and B being primary plot units and usually occurring in pairs or dyads. Secondary plot units, on the other hand, function as transitional elements to mediate the action established in the initial primary unit (A) and lead the action of the narrative to the final primary plot unit (B). By stringing or embedding the A-B dyads and by interposing secondary plot units between these dyads, six different structural types, representing six developmental levels of complexity, emerged (Botvin, 1977; Botvin and Sutton-Smith, 1977). According to their scheme, by the age of six, children's spontaneous stories not only include a nuclear dyad such as lack, lack-liquidated but also incorporate a number of secondary plot units which mediate these primary ones. Thus, this A-B dyad plus the mediated ones begin to resemble the four phases of the primary narratives produced by five-six year olds described by Leondar.

In 1963, Pitcher and Prelinger asked two five year old children to tell them stories. They analyzed these spontaneous stories along several dimensions: the formal characteristics of the stories, the content of the stories,
and the psychosocial issues such as trust, autonomy, initiative, and so forth, reflected in the stories. The thrust of their analyses was to document the children's ego development manifested in their stories. Using another perspective, Applebee (1978) reexamined the Pitcher and Prelinger corpus of stories. Applebee examined them according to how the children organized the complexity of the stories they told. Treating the plots of stories as a series of elements, each of which having a series of attributes (such as characters, actions, settings and themes), and drawing from Vygotsky's work in concept development (1962), Applebee identified six basic types of structures in the stories. He suggested that these six structure-types represent six major stages of narrative form for ages two to five: from least to complex—heaps, sequences, primitive narratives, unfocused chains, focused chains, and true narratives. Each stage exhibits a more progressively complex combination of two basic structuring principles—chaining and centering. By five, children produce stories which consist of a center or situation around which the story is built and is developed over the course of the narrative and a sequence or chain of events or incidents which develop from the previous ones by elaborating a new aspect of the theme or situation. Moreover, the recognition of these two organizing principles
underpinning the development of narrative form, Applebee has argued, is indicative of the increasing movement from expressive toward the poetic or artistic form, one of the basic functions for mature writing described by Britton, et al. (1975).

Two points abstracted from the above discussion about Applebee's work warrant further mention. First of all, Applebee's findings indicate that children of the age of five are able to produce spontaneous stories in which narrative form appears to be more or less complete. Consequently, such findings relative to children's spontaneous stories agree with those of Leondar, Botvin and Botvin and Sutton-Smith but not with those mentioned by Stein and Glenn (1979). Secondly, Applebee has suggested implicitly that there is a connection between children's oral spontaneous story productions and their subsequent written ones by referring to Britton, et al.'s taxonomic model of adult writing. Certainly Leondar is making a similar connection by referring to the need to investigate early childhood storymaking abilities as an important avenue for understanding the emergence of literary craftsmanship. Indeed, specifically examining the transition from children's oral story retellings and story tellings—as occasions for the child to produce monologue-like discourse and to create and sustain speech on a topic—to children's early written
discourse is the basis upon which King and Rentel (1979) have evolved their theory of early writing development. Thus, it appears that the examination of young children's spontaneous written stories would further supplement our understanding of children's development of narrative competence.

4. An Integrated Perspective of Language Development: A Synergistic, Variable Model

What seems to be common in most of the studies discussed above is the concentration upon story form. That is, no matter whether the mode was retelling or spontaneous story telling, the studies have limited themselves to analyzing story macro-structure.* However, a lesson can be learned in the research of children's development of narrative competence by reviewing briefly the course traveled by the research of children's language development in general.

Historically, an early emphasis in the research of child language was one of describing the acquisition of the form of language. To a great extent, Chomsky's early work (1959, 1965) arguing against the prevailing psychological

*Actually, J. R. Martin's study (1977) has examined the semantic systems realized by children in several tasks, one of which is a retelling of a fable, and another being a spontaneous story telling (although not an original one). His study will be discussed in subsequent chapters of this study.
association learning theory to account for language acquisition, was responsible for this emphasis. At any rate, a host of studies concentrated upon documenting children's acquisition of all kinds of forms from negatives and interrogatives (Bellugi, 1967; Bellugi-Klima, 1968) to grammatical morphemes (Berko, 1958) to certain aspects of syntax (those which are the exceptions of the minimal distance principle) (C. Chomsky, 1969), as some examples.

Following this form emphasis, studies began to include an investigation into the child's learning of the content of language. Indeed, it became apparent that understanding children's acquisition of grammatical knowledge would require an attention to the meanings children expressed. For example, Bloom (1970) noted that the same form, mommy sock, uttered by Kahtryn in Stage I represented two different semantic-syntactic categories: possessor—possessed and agent-object; as understood by the glosses—"Kathryn picked up her mother's sock" and "Mother was putting Kathryn's sock on Kathryn," respectively. Thus, investigators, influenced by generative semantics such as Fillmore (1968) and Chafe (1970), began to include semantic explanations for early child multi-word language (e.g., Brown, 1973) as well as one-word utterances (e.g., Greenfield and Smith, 1976) in the child's developing grammatical knowledge. In addition, studies investigating
children's acquisition of extensional word meanings (e.g., E. Clark, 1973; Nelson, 1973; Rosch, 1973) flourished.

Then in the 1970's, another switch in emphasis occurred. How children learn to use language began to be explored. Up until then much of the work in child language relied upon two kinds of assumptions: (1) that adult contributions into the child's language learning process was fairly insignificant; and, (2) that socially appropriate use of language emerged later in the child's development. The first assumption stemmed from Chomsky's notions about the language acquisition device (the LAD). That is, inherent in his ideas about the innate nature of the LAD was the implication that the child needed only a language environment consisting of any random adult utterances for language to be acquired. The second assumption originated from Piaget's (1926) characterization of young children's language as egocentric. The latest research focus, then, explored children's use of language and began to question both of these sorts of assumptions. Such a focus included investigating specifically the nature of the mother's language to the child (Snow, 1972), for example, and examining the interactions between the adult and child in order to document the developing discourse abilities of children--i.e., their ability to obtain information from a prior linguistic message and then form a contingent message
(Bloom, Rocissano, and Hood, 1976). Moreover, new considerations about how language functions began to indicate that social communication itself required that the child learn to use language in the very beginning of his or her life: joint attention between the mother and the child is the ontogenesis of speech acts (Bruner, 1975; Dore, 1974) and learning to mean (Halliday, 1975).

While it has been possible for research purposes to concentrate upon form or content or use, as indicated by the brief review presented above, this research has also indicated that the process of language learning, in fact, involves advances in all three components—form, content and use—simultaneously. Thus, any integrated perspective of language development must account for concurrent growth among and within each component. In such a model, according to Bloom (1976), language learning is characterized in two major ways: (1) Learning language is a synergistic process, rather than an additive one. That is, the child does not learn aspects of form, then content, then use, but instead learns aspects of all three components together. (2) Learning language is systematically variable, rather than categorical. That is, the child is not learning facts about language in an all-or-nothing fashion, but instead is learning these facts, which interact, influence, and facilitate each
other, so as to affect language behavior in different ways depending upon different circumstances.

5. Extending the Synergistic, Variable Model to the Area of Narrative Competence

The production of a text or discourse such as a story is a complex venture which involves many kinds of concerns. Producing a story, whether by retelling one just heard or by telling or writing one, involves simultaneous consideration of semantic, psychological and linguistic concerns (Chafe, 1973, 1974, 1976, 1977a, 1977b). It demands organizing the content of what the storymaker wants to include in the story in an orderly fashion: by structuring those elements of narrative form or story macro-structures, while at the same time arranging the individual propositional and frame elements within each macrostructure, yet carefully selecting the most appropriate word within a category to express the ideas contained in these message frames or strings. Moreover, story production requires simultaneous attention to the "packaging aspects" of the story. It is packaging considerations that dictate a speaker or writer "wrap up" his or her content for ease of assimilation on the part of the listener or reader. Distinguishing given from new information, deciding whether a noun should be definite or indefinite, deciding
what to make the subject or the topic are all examples of these packaging considerations (Chafe, 1976, 1977b). Thus, throughout a story the storymaker must acknowledge these concerns, as well as others, by "tieing" the ideas found among individual messages, utilizing the phoric means—both componential and organic—which are available in the language system. Such concerns involve creating texture or cohesiveness in stories (Halliday and Hasan, 1976).

Certainly children's narrative development is part and parcel of language development as a whole; thus, it seems reasonable to view the area of the development of narrative capabilities in terms of a synergistic, variable model of language development. If language development is progressing along all three dimensions—form, content and use—limiting our examination to form alone will continue to impede our understanding of children's development in narrative competence. Besides producing stories which include obligatory macro-structure, the notion of narrative competence should also demand that stories "hang together" in a cohesive way (Halliday and Hasan, 1976).

Application of this two-pronged criterion, however, will lead to some unexpected results. As already noted above, many studies (in both the recall and the spontaneous story research) have indicated that first grade children
appeared to have learned the macro-structure of stories. However, several of the same investigators have reported or hinted at other factors which tend to question whether such a finding is so clear-cut (e.g., Stein and Glenn, 1979; Leondar, 1977; Botvin, 1977; Botvin and Sutton-Smith, 1977; and Applebee, 1977). Botvin assumed with Propp (1968) that what is important in narratives are the functions of a tale—it is what characters do, not who or how they do it that is relevant. Consequently, in following Propp's methodology to provide an analytic system for children's narratives, Botvin regarded actions and events in the children's stories as separate entities. More specifically, his methodology consisted of decomposing each story into a series of actions or events and then grouping these action elements into higher order categories by comparing these narrative events/actions among stories. Indeed, what appears to be universal in everyone's scheme—from Propp to Prince (1973) to the story grammarians (e.g., Stein, 1978; Rumelhart, 1977; Mandler and Johnson, 1977) is the persistent assumption of, or taking for granted, the role or importance characters play in a story, but at the same time giving undivided attention only to events!

Such an assumption about how characters function in children's stories, however, may not be a reasonable one to make. Pettegrew and Pappas (1980), for example,
have shown that first grade children, as indicated by their use of restricted or ambiguous exophoric reference in their writing, were still finding it difficult to keep track and be clear about the same and identical people, objects, or ideas in their stories. And while Leondar (1977) does indicate that first grade children produce "complete" stories, in her remarks about the development of point of view, she notes that these primary narratives also reflect a disregard to audience and to the characters in their stories as well as a proliferation of ambiguous pronoun reference. Similarly, Pitcher and Prelinger (1963) have commented that as the child reaches five "the main characters of his stories tend to become less clearly identifiable" (p. 155). In fact, with what certainty can we say that a lack established in an initiating event, to use both Botvin and Stein and Glenn's terminology, has been liquidated in a subsequent event (in the consequence, for example) unless we are sure that the same and identical character has been involved in both events (Pappas, 1980). Thus, we might not want to claim categorically that first grade children have learned narrative form, what Gardner (1980) has labelled the skeleton-like nexus of character-problem-solution, when those investigators crediting narrative form competence either admit ambiguity with respect to
characters and pronomial reference or avoid the character issue all together.

Within a synergistic, variable perspective of language development, however, the distinction between a child understanding a form and his or her using a form is recognized. Moreover, such a model would appreciate differences when the child is using a form in different contexts or circumstances. Yet, as already noted above, some are surprised to find that first grade children's spontaneous stories, for example, include only setting elements whereas their retellings indicate that they have learned and understood more. The synergistic, variable model would also expect differences between first grade children's oral spontaneous story renditions and their written ones.

6. The Present Study

The present investigation attempted to understand first grade children's developing narrative capabilities by analyzing their story "texts" produced in three different contexts. These story "texts" were part of a larger longitudinal study* in which children were read a story

*"The Cognitive Processing of Contextual Features Produced by Children in Three Modes of Discourse: Interactive Speech, Dictation, Writing" (Martha L. King and Victor M. Rentel, Principal Investigators). This research was supported in part by the National Institute of Education under Contract Nos.: NIE G-79-0039 and G-79-0137.
and then asked to retell it to a naive listener, in which children dictated their own stories to scribes who wrote them down, and in which children wrote their own stories. While the larger study covered several time intervals, the present data were collected when the children began first grade (October).

The best way to specify the three contexts in which the story language took place is to refer to the contextual configuration scheme presented in Halliday and Hasan (1976) and Halliday (1978, 1979). Such a framework consists of three general concepts—field, mode, and tenor—and describes how each context of situation determines the kinds of meanings expressed in texts:

The FIELD is the total event, in which the text is functioning, together with the purposive activity of the speaker or writer; it thus includes the subject-matter as one element in it. The MODE is the function of the text in the event, including therefore both the channel taken by the language—spoken or written, extempore or prepared—and its genre, or rhetorical mode, as narrative, didactic, persuasive, 'phatic communion' and so on. The TENOR refers to the type of role interaction, the set of relevant social relations, permanent and temporary, among the participants involved.

(Halliday and Hasan, 1976, p. 22)

The different contexts for the present study, then, can be briefly described in terms of these concepts of field, tenor and mode. Among the three contexts, tenor was more
or less constant— that is, the listener/scribe/reader, respectively, were known by the children but were not knowledgeable with respect to the content of children's stories. Thus, the social distance between the researchers and the children was always the same; in all three contexts, disembedded (Donaldson, 1978) or decontextualized (Martin, 1977) language from the children would be most appropriate. Relative to field, the story retelling context differed from the other two contexts in that the children's purpose was to retell a story read to them in the former case whereas their purpose in the latter two was to create their own original stories. And finally, with respect to mode, the first context involved an oral channel or communication; the second involved a combination of oral-written channel in that the children told their stories but at the same time were aware of the scribe's actions in writing down their stories; and, the third context involved only the written channel of communication.

Earlier it was argued that a two-pronged criterion consisting of an examination of both global macro-structure elements and cohesion in stories might lead to a better indication of children's narrative competence. Actually story schema categories are so interrelated to the cohesive patterns of successive participant-process subpredications in stories that a cohesive harmony index, named and
developed by Hasan (in press a), captures the major characteristics of both of these criteria. (See Chapter II for a detailed discussion of this point.) The cohesive harmony index employed in the present study is the result of a series of analyses performed on each of the story texts produced by eleven first-grade children across all three contexts described above. These analyses will be only briefly described here so as to provide a better understanding of the index.

The first stage of the analysis consisted of scanning a text for grammatical items (those of the reference, substitution and ellipsis categories (Halliday and Hasan, 1976)) which function as cohesive devices. Lexical cohesive features were then identified in a similar way. Using the results of the first stage, a second analysis attempted to transform each text into only lexical items, a process Hasan (in press a; 1980) calls "lexical rendering." The third stage of the analysis consisted of forming identity and similarity chains on the lexically rendered text. Finally, the last analysis examined the interactions of these two kinds of chains. A computation of the lexical tokens in these interactions resulted in the cohesive harmony index. It is this index which reflects both the completeness aspect of a story—which literary structuralists, cognitive psychologists, and child developmentalists
have tried to characterize in developing their story structure schemes—and the cohesiveness aspect of a story.

A synergistic, variable perspective of language learning predicts that the first grade children's developing narrative capabilities—as measured by this cohesive harmony index, as well as related factors such as the length of their texts and the complexity of their clauses—will be varied due to the constraints of each of the three contexts in which the children produced their stories. In summary, "narrative competence" of children was defined as "communicative narrative competence" and was determined by assessing how well eleven first grade children used a genre of story in three contexts—retelling, dictating and writing.
CHAPTER II
RELATED RESEARCH

1. Introduction

The major purpose of this chapter is to provide the theoretical background to argue that the construct, cohesive harmony, can be an efficient tool for measuring children's narrative competence. This will be done by reviewing the similarity found among paradigmatic schemes of narrative form and by outlining the cohesion analysis adopted in the present study. In addition, this chapter will foreground the other factors—besides the cohesive harmony index—which were investigated in the study.

2. "Schema"—Its Use in the Present Study

In Chapter I, the term "schema" was used in two ways: (1) as a global macro-structure for, let us say, text analysis; and, (2) as a representation of internalized cognitive structures—what Rumelhart (1978) has characterized as the "building blocks of cognition"—which enable people to understand and/or remember stories. In the present study, "schema" will mean an approach to text analysis utilizing cohesion analysis and thus will be related to the first use of the term.
The second use of "schema"—that is, as a representation of underlying cognitive structures—is related to the present study only indirectly. Admittedly, "schema" in this second sense may have been operative in guiding and directing the children's understanding and recalling of the story read to them in the retelling context, as well as in the other two contexts in which the children were asked to produce their own original stories. However, no specific inferences into the children's comprehension or memorial processes were made. For example, it is possible that the "facts" found in children's retelling texts will not correspond to those in the stimulus story read to them. However, the focus here is not on whether some aspect of the story read to the children can be found in their retellings, but rather, given the story as an input, to what extent did the children produce complete, cohesive stories in this context as compared to their stories in the other two contexts.

To reiterate, the present study was a text analysis study whose focus was on children's communicative narrative competence—their ability to use the genre of story in three contexts.
3. Review of Narrative Form Schemes

As literary structuralists, as cognitive psychologists, or as child developmentalists, researchers have used "the story" in different ways depending upon the kinds of questions each discipline has pursued. Despite the different roles "the story" has played, global text schemes for stories have been developed in these disciplines which are similar in a very general way. The purpose of this section is to review some of the various schemes in order to demonstrate this similarity.

The analyses developed by literary structuralists will be discussed first since their work has influenced the schemes developed by researchers in other fields and because some of the work in the other disciplines has already been discussed in Chapter I.

Todorov (1971) argues that there are two constitutive principles which define narrative. The first principle is the succession of units. Stories begin with a description of a state, but the presence of this state is not sufficient for a narrative. What is also required is the development of action—that is, change or difference. Each change not only constitutes a new link in the narrative, but also follows the preceding one, frequently in a causally related way. So this principle of succession is characterized first by the contrast between the initial
description situated in continuous time ("pure duration") and the subsequent changes as a whole which cut time into discontinuous unities and then secondly by the sequential time of events. Propp's (1968) scheme in which units as events are described as functions examines the relationships among the units entirely in terms of order of these units. Such a syntagmatic structural approach, therefore, embodies this first principle of succession. But, as Todorov is quick to point out, the succession of units alone is not enough to characterize the narrative since some of the functions of a tale are more important than others. That is, there is a hierarchical order of functions or elements existing in a narrative.

In analyzing a tale in terms of its hierarchical units, Todorov identifies five indispensable elements: (1) a situation of equilibrium at the beginning; (2) the breakdown of the initial situation by some misfortune or complication; (3) a character's recognition of the loss of equilibrium; (4) some action which repairs the misfortune or complication; and (5) the re-establishment of the initial equilibrium. An examination of the relationships among these five critical elements reveals the following: the first element repeats the last one (both are of the state of equilibrium); the third element is an inverse of elements one and five; and, the second and the fourth elements are symmetrical and inverse. Thus, Todorov
concludes, the relationships among units is one of transformation as well as one of succession.

Todorov describes three types of transformations. The first type is one in which one term is changed into an opposite or contradictory one. This change constitutes the paradigmatic structural organization of A to non-A so characteristic of the work of Levi-Strauss (1963), Dundes (1964), Maranda and Maranda (1971) and Bremond (1970). Propp also noted such transformations (termed morphological by Todorov) as well as other types of transformations in his discussion of his functions but his recognition of them was not incorporated in his structural approach.

The second transformation Todorov describes is a change from ignorance to knowledge. In this type of transformation, called a gnoseological transformation, the event (of a misfortune, for example) is less important than the perception or recognition of it for it is upon this knowledge that subsequent actions are planned.

The third type of transformations Todorov terms ideological for these transformations represent a higher level abstraction between actions and events. Here independent actions perhaps performed by different characters in different circumstances can exemplify the same abstract rule or ideology. A good example of this transformation is
the folklore device of "triple testing" in which the predicate of the three episodes is the same although agents (or subjects) or circumstances may change in each episode.

It is through these two principles of succession and transformation that paradigmatic story or narrative schemes resemble each other. Particular schemes may label their critical or hierarchical elements or categories differently or may differ with respect to the number of categories, but the relationships among the respective sets of elements will manifest these two principles. For example, Bremond's (1970) five component archetype pattern depicts elements similar to Todorov's. (See Table 1 on page 30.) Moreover, the schemes developed by cognitive psychologists, as well as those generated by child developmentalists, are characterized in this general way. Representative analyses—those of Todorov (1971) and Bremond (1970), those of Mandler and Johnson (1977) and Stein and Glenn (1979), and those of Leondar (1977)—are displayed in Table 1 to illustrate this similarity. Although Botvin's (1977) structural framework does not consist of a list of elements comparable to those presented in Table 1, its units, the primary and secondary plot units, reflect these two principles of succession and transformation. And, it could be argued that these principles are analogous to the two organizing principles—chaining and centering,
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) equilibrium</td>
<td>1) satisfactory state</td>
<td>1) setting</td>
<td>1) setting</td>
<td>1) prevailing state of affairs</td>
</tr>
<tr>
<td>2) breakdown of equilibrium</td>
<td>2) procedure of degradation</td>
<td>2) beginning</td>
<td>2) initiating event</td>
<td>2) disruption of state of affairs</td>
</tr>
<tr>
<td>3) recognition of dis-equilibrium</td>
<td>3) state of deficiency (to restore)</td>
<td>3) reaction</td>
<td>3) internal response</td>
<td>3) recognition of disruption</td>
</tr>
<tr>
<td>4) action to repair dis-equilibrium</td>
<td>4) procedure of restoration</td>
<td>4) attempt/ outcome</td>
<td>4) attempt/ outcome</td>
<td>4) counteraction</td>
</tr>
<tr>
<td>5) re-establishment of equilibrium</td>
<td>5) satisfactory state re-established</td>
<td>5) ending</td>
<td>5) reaction</td>
<td>5) restoration of normal state of affairs</td>
</tr>
</tbody>
</table>
respectively—Applebee (1978) believes fundamental to narrative form.

In Chapter I it was noted that most studies exploring children's narrative competence try to fit the adult narrative-form scheme onto children's own stories. This research has indicated that children are learning this form; yet these approaches may have permitted misleading or untenable conclusions about first grade children's competence relative to narrative form. Martin's findings (1977) have indicated that six to seven year olds appear to select different linguistic options— that is, use a specific narrative code—in different story-telling tasks than older children do. He warns: "The danger of generalizing from particular contexts to general abilities cannot be overemphasized" (p. 186).

The elements or constituent parts of narrative schemes do not constitute an aggregate, but instead embody the idea of wholeness, a sense of internal coherence (Hawkes, 1977). They represent the invariances abstracted from the semantic details of stories. Texture or those properties of text which make these details "hang together" in a cohesive way are the givens upon which this abstraction process operates. Therefore, examining the cohesive properties of stories is investigating the roots of the principles of succession and transformation in play,
and, in a sense, may be the abstraction process in reverse. The cohesion analysis to be outlined in the following sections of this chapter is an alternative approach for examining the origins and development of narrative form. This analysis will permit scrutiny of the linguistic means children have employed in their early attempts to produce a story in three contexts, and will provide a more accurate documentation of their developing narrative capabilities.

4. a. Text, Texture and Cohesion

Most of the theoretical background for the cohesion analysis presented in Sections 4 and 5 has been drawn from the work of two linguists, M. A. K. Halliday and Ruqaiya Hasan. For them, the notion of "text" is regarded as a functional, semantic unit of language, of whatever length, which forms a unified whole. The concept of cohesion involves the textual function of language in which one part or bit of language is related to another part or bit of language. In Cohesion in Language, Halliday and Hasan (1976) present five types of linguistic devices which are available for speakers and writers to link parts or bits of language in text. These devices fall into five categories: (1) reference, (2) substitution, (3) ellipsis, (4) conjunction, and (5) lexical cohesion.
Cohesion, then, is realized in a text when one element in the text is interpreted by reference to another through one of these five devices. When this occurs, a "tie" is established and it is these ties which contribute to the texture of the text in question.

In the analysis of the texts in the present study, only four of the above categories—those which Hasan (in press, a) refers to as the "componential devices" (namely, reference, substitution, ellipsis and lexical cohesion)—were used. Of these four devices, three—reference, substitution, and ellipsis—are considered to be implicit encoding devices and are referred to as "grammatical cohesive devices" by Halliday and Hasan (1976). Each of the implicit devices involves semantic presupposition; each one requires that information be retrieved from a source extrinsic to itself to interpret it. Lexical cohesive devices, on the other hand, are explicit devices for relating members of a tie. Explicit devices are semantically self-sufficient.

4. b. Grammatical Cohesive Devices

The reference category includes personal pronouns, demonstratives and the definite article the, and comparatives. Generally speaking, referent items are those items occurring in English nominal groups which relate to other
items in text in terms of an identity relationship. So in the following example:

[Ex. 1] once upon a time there was a boy
   he went to the store

he, as a personal pronoun, in the second line refers back to boy in the first line and the semantic relationship between the two items or members of the tie is one of co-referentiality.

Co-classification is another meaning relation which obtains between two members of a tie. Consider the following:

[Ex. 2] the boy has a guitar
   the girl owns one too

The members of the tie are a guitar and one. The relationship is not one of identity because each member is distinct and separate; instead each member is said to belong to the same class—in our case, "guitars." Normally, it is the cohesive devices of substitution and ellipsis which express this relationship of co-classification. One in Ex. 2 above represents the cohesive device of substitution and functions as a replacement of the item, guitar, in the first line. In the next example,
The boy played a guitar
the girl didn't

didn't would constitute an elliptical device, referring to the verbal group, played a guitar, thereby expressing a meaning of the co-classification type. (See Halliday and Hasan (1976) for a detailed account of these implicit devices.)

The implicit devices classified under the headings of reference, substitution and ellipsis, thus permit more precise meaning patterns through semantic presupposition (Hasan, in press b). In the use of these implicit devices, an important distinction is made relative to the intended source for the meaning interpretation of the device. When the source for the interpretation of a device (i.e., the other member of the tie) lies somewhere in the accompanying text, it is termed endophoric; when the source for the other member of the tie lies outside of the co-text and must be interpreted in terms of some feature of the context of situation, it is termed exophoric in nature.

Each of these two headings (endophora and exophora) can be further subclassified. If the item (or the other member of the tie) to be interpreted is found in the preceding text, the endophoric device is considered to be anaphoric—that is, the device is referring backward to
another bit of language in the text. If the bit of language for interpretation is found in the upcoming text, the endophoric device is considered to be cataphoric. In this case, the device is pointing forward to items following it in the text.

Exophoric implicit devices can also be subcategorized. Since substitution and elliptical devices are typically endophoric in English, and because the research cited in Chapter I has indicated that much ambiguity exists in children's use of referent items, the following discussion of the sub-categories of exophora will be explicated using reference items.

The sub-categorization of exophoric reference is done in terms of a grading of implicitness (Hasan, in press b). Hasan (in press b) has provided a system network for presenting the encoding devices. The numbers near the categories reflect the grading of implicitness. This network is furnished in Figure 1. Note that explicit (1) or lexical devices have not as yet been discussed and that the implicit endophoric devices of cataphora (2) and anaphora (3) have already been discussed. The following discussion, therefore, will concentrate upon categories (4) – (7) and will proceed from the lesser degree to the greater degree of implicitness on the continuum.
Figure 1. Network for Encoding Devices with Degrees of Implicitness
Taken from Hasan (in press b, p. 23)
The grading system itself is determined by reference to the availability of a speaker-writer's intended meaning so that the movement of (1) to (7) is seen as an ever-narrowing circle of potentially successful interpreters. As already noted, in the exophoric type of semantic presupposition, the intended source of interpretation is in the extralinguistic situation. In formal exophoric reference (Category (4) in Figure 1) knowledge of the language itself allows for a partial interpretation and is distinguished from the situationally specific types. Homophoric reference in which only one member of a class of objects is referred to (e.g., the sun) or reference in which a whole class is being referred to (e.g., the child, as used in this thesis) are examples of this formal exophoric reference. Frequently, the use of a formal reference item concerns a shared cultural context (Martin, 1977). The term the university used by residents in Columbus, Ohio to refer to Ohio State University would constitute an exophoric reference of the formal type.

At the situational system in Figure 1, the circle becomes narrower and we move to a greater degree of implicitness. Instantial (Category (5)) exophoric reference is usually exemplified by I or you, representing speaker and addressee roles, respectively. The use of other referent items other than I and you are possible
but the point about instantial exophoric reference is that someone must be present at the scene of the interaction to interpret the intended meanings.

In Category (6), indeterminate exophoric reference, even those present at the scene will be able to retrieve only a part of the intended meaning. Hasan (in press b) uses the following example to illustrate this point of partial retrieval:

Don't touch the books.

Here if someone was present to see a stack of books and heard the above, he still would be able to identify only partially the meanings intended since the speaker, in fact, was referring to a subset of particular books of the books physically present at the scene (e.g., perhaps the library books of the books).

The last type of exophoric reference (Category (7)) is called restricted exophoric presupposition. This is the most implicit device for using this type, presence at the scene is immaterial. In this latter type of exophoric reference the circle is the narrowest of all for ultimate identification is evident to the addressee only on the basis of shared knowledge with the speaker. Consequently, should someone enter the scene of interaction and hear a speaker use the restricted referent item, no one
or thing is present for him to provide an interpretation. The interpretation of such an implicit device, then, is solely depending on shared knowledge of the speaker and addressee and excludes this someone from the circle of communication.

In all of the three contexts of the present study, children had the task of producing a narrative, a type of text which presumes almost no information from the non-verbal situational context. Moreover, even in the retelling condition, the listeners to whom the children told their stories were naive as to the content of a story. Thus, it is expected that most of the implicit cohesive devices employed in the text will be of the endorphic or the formal exophoric reference type. Children's use of restricted exophoric reference will be thought of as inappropriate to the context of situation. So if a child began his or her story with,

once upon a time the man was poor

the of the man will be considered as a restricted exophoric reference item since the ultimate referent for the man cannot be found in the co-text or cannot be inferred by bridging to other information presented in the co-text (Haviland and Clark, 1974) and presumes shared knowledge not warranted in any of the contexts. Therefore, such use
of these exophoric reference items will be an important factor for assessing the child's narrative competence.

4. c. Lexical Cohesive Devices

So far we have discussed the implicit encoding devices—those of reference, substitution, and ellipsis—and the typical relationships these devices enter into—namely, those of co-referentiality and co-classification. Lexical cohesion involves the use of explicit encoding devices. Here the members of a tie are the specific lexical item and the meaning relationship which obtains between them—a relationship referred to as one of co-extension (Hasan, in press a). A meaning relationship obtains between two lexical items whenever they belong in the same semantic field. Hasan (in press a) posits five traditional meaning categories to place lexical items within the same semantic field: reiteration, synonymy, antonymy, hyponymy, and meronymy.*

*It will be noted that the category of collocation has not been included here. This is a departure from the analysis found in Halliday and Hasan (1976). Hasan (personal communication) believes that it is too difficult to set boundaries in collocation to assure reliable judgments in coding lexical cohesion. In a similar vein, Martin (1977) has indicated that while a collocational analysis might lead to a more intuitively satisfying representation of lexical cohesion, presently not enough collocational information for English exists to back up an explicit analysis. The present study has used the five categories listed above and has therefore excluded the category of collocation. It should be pointed out, however, that many items discussed under collocation in Cohesion in English will fall within the five categories anyhow.
Reiteration or repetition is a relationship in which both members of a tie "are" the same lexical item and therefore are encoding the same general meaning. For example, in the following excerpt from a retelling text,

1. once there was an old woman and her little girl

10. then an old woman came along

woman recurs as identical tokens of the same lexical item. Included in this category also are cases in which members bear a derivational similarity of the kind relating play-player or responding-response.

The relationship of synonymy is present when members "mean the same." Hasan sees synonymy as a special case of repetition in that although there is not a total overlap of meaning of two lexical items, the ideational meaning of the two lexical items are identical. Boy-lad and house-home exemplify this type of relationship.

The third type of sense relation is antonymy or "oppositeness of meaning." In this case, lexical items such as rich-poor or good-bad form a semantic link.

Hyponymy is a sense relation in which the meaning of one member of the pair subsumes that of the other. Consequently, animal (class) may establish a tie with items such as horse, cow and goat (sub-classes). Moreover,
members of the sub-classes may form a tie through the relation of co-hyponymy.

The fifth category is **meronymy**, a term Hasan has used to name *part-whole* relations. Analogous to hyponymy, a meronymy sense relation may be formed when members such as **hand-finger** (whole-part) or **hand-foot** (part-part) exist.

Sometimes specific lexical items, such as **cat** and **dog**, can be thought of as having either a relation of co-hyponymy or one of weak antonymy. In such cases, the labelling as one or the other is not an issue; what is important is the determination that the members do, in fact, express a sense relation. Thus, the major purpose for setting up the five categories is to provide reasonable criteria for consistent coding of the lexical items found in a text.

4. d. The Formation and Interaction of Identity and Similarity Chains

In Section 3 above, it was argued that the examination of cohesive properties in children's stories is a tenable basis for exploring the roots of global narrative form. This argument rests upon the proposition that paradigmatic story schemes are characterized by the two principles of succession and transformation, whose interplay expresses the relationships which obtain among the abstract
elements or categories of these schemes. We have discussed the ways in which implicit and explicit cohesive devices permit bits of language in text to enter into the meaning relationships of co-referentiality, co-classification and co-extension. In the present section, the analysis will be taken two further steps by forming identity and similarity chains and by showing how these chains interact. These procedures are the bases for the present analysis of narrative form.

Identity and similarity chains are constructed on the basis of semantic relations. To accomplish this, a "lexical rendering" of texts is a necessary prior stage. A lexical rendering is done by referring to the implicit devices in each text and replacing those devices with the lexical tokens which constitute their specific interpretation. Several examples* containing the devices most frequently used by the children in this study may clarify this process:

[Ex. 4a] 1 once upon a time there was a little girl and her mother who lived in a cottage

2 and they hardly had any food to eat

*Since all of the examples provided in the rest of this chapter have been taken from the children's texts produced in the study, the numbers identifying units in the examples correspond to specific units in a particular text.
Pronominal referent items were the implicit devices most frequently utilized by children in the study. Two grammatical devices can be found in the above two units: the singular pronominal *her* in unit 1 and the plural pronominal *they* in unit 2. In carrying out the "lexical rendering" of the above text, *her* would be replaced by the lexical token *girl* and *they* would be replaced by the tokens *girl* and *mother*. These "cohesively interpreted lexical tokens" are then underlined in the lexically rendered text to distinguish them from the "primary" lexical tokens which are the actual wordings of the text produced by the child.

[Ex. 4b] 1 once-upon-a-time be(exis) little girl girl
girl mother live cottage

2 girl mother have(=possess) hardly-any food
eat

Note that the lexically rendered text now consists of only "content" words (nouns, verbs, adjectives, and adverbs): the function words have been dropped. In addition, the story marker "once upon a time" is treated as a single token. As a result, although implicit devices are being replaced by more specific lexical tokens, the resultant text becomes abbreviated and simplified.

Subject ellipsis was frequent in the data, especially in the retelling texts. In such cases, as exemplified
below in unit 8 of Ex. 5a and Ex. 5b, the appropriate lexical token (in this case, girl) was placed before the verb for which the subject was ellipsed.

[Ex. 5a] 7 and she sat down on a fallen tree
           8 and started to cry . . .
[Ex. 5b] 7 girl sit-down fallen tree
           8 girl start-cry . . .

Units containing verbal groups such as start to cry, begin to boil, start to run, all of which indicate the beginning of some process specified by the infinitive form, were treated as a single token (see start-cry in unit 8 above). Repetition of the same verb expressing an action performed by the same actor(s), as illustrated below, was handled in a similar way:

[Ex. 6a] 3 they played and played
[Ex. 6b] 3 boy girl play-play

Thus, the second verb, played, in Ex. 6a was not considered as the beginning of a new unit with subject ellipsis, but instead was treated as a single lexical token.

Extended text reference also occurred in the data but was much less frequent than instances of pronominal reference and subject ellipsis. The following example
contains an instance of extended text reference and how it was handled in the rendering process:

[Ex. 7a] 16 then the little girl ran home with it as fast as she could
17 before that the old woman told her the magic words . . .

[Ex. 7b] 16 little girl run home pot fast girl can
17 little girl run home pot fast girl can old woman tell girl magic words . . .

In this example, the child used the extended text reference device that to repair the inaccurate reporting of the sequence of events in retelling The Magic Porridge Pot (Galdone, 1976), which was the stimulus book used in the study. Here, that in unit 17 is referring back to the whole process or complex phenomenon expressed by unit 16; hence, all of unit 16 is included in unit 17 when lexically rendering the text.

The last most frequently used grammatical devices occurred in dialogue between characters in a story. Such dialogue represents what Hasan (in press c) calls the indirect plane of narration, in which some character(s) moves the narration by "saying things." The following exemplifies clausal ellipsis in a question-answer sequence between two characters:
[Ex. 8a] 8 ((speaker:boy)) and so he says "are you a scary monster?"

9 and the monster said "no"

In unit 9, no expresses polarity and presupposes all of the features of the clause of the question in unit 8 except the polarity. To render the text, then, the clause of the question is included in the response as follows:

[Ex. 8b] 8 boy say "monster be(attr) scary monster?"

9 monster say "no monster be(attr) scary monster"

Once a text has been lexically rendered, the formation of chains can be made. A lexically rendered (LR) text is first scanned for those items which refer to the same and identical persons, objects or things—that is, those items which form relations of co-referentiality. These will constitute the Identity Chains (ICs) of the text. Similarity Chains (SCs) are then formed by identifying those items which relate to each other in terms of semantic similarity (using the categories described in Section 4. c.). Chain formation of each kind will be more clear as other excerpts from children's LR texts are considered. The pre-lexically rendered units are in parentheses and are below each LR unit.
Two separate Identity Chains will be pointed out in the above excerpt. In this example, the first IC contains 10 tokens which can be found in units 1 (woman (2x), girl), 2 (woman, girl), 21 (girl (2x), mother) and 26 (mother, girl). This chain, then includes two people, "girl" and "woman/mother" who is the girl's mother. The other IC in this example contains only 2 tokens of woman which can be found in units 10 and 12. Here woman does not refer to the
same woman in units 1 and 2; but instead refers to a separate character who gives the girl a magic pot.

Another excerpt from a LR retelling text will illustrate the forming of Similarity Chains (SCs). Once again the pre-rendered text segments are in parentheses and are below each LR unit. The numbers above tokens correspond to the different SCs to be discussed below.

[Ex. 10] 3 **woman girl** have (=possess) tiny loaf-bread
(3 and they had a tiny loaf of bread)

(4 everyday little girl go-out woods find some nut berry
(4 and then everyday the little girl would go out to the words to find some nuts and berries
(5 one-time little girl go-out
(5 but one time the little girl went out)

(6 girl find any nut berry
(6 and she didn't find any nuts or berries)

10 old woman come-along
(10 then an old woman came along)

(16 little girl run home **pot** fast **girl** can
(16 then the little girl ran home with it as fast as she could)
The first Similarity Chain includes semantic synonyms expressing the process of "going" or "locomotion". SC1, thus, contains seven tokens (viz., go-out (2x), come-along, go, run (2x), run-out). SC2 contains two reiterations of another process—"find." SC3 contains five tokens expressing co-hyponyms of the general class food (viz., loaf-bread, nut (2x), berry (2x)). SC4 contains tokens expressing amounts of food—"some," "any."

Once IC and SCs have been formed in a text, chain interactions can be ascertained. In Hasan's words:

The minimum requirement for chain interaction can be phrased as follows: for the chains x and y to interact, at least two members of x should stand in the same relation to two members of y.

(Hasan, in press a, p. 19)

The kinds of relations Hasan is referring to are those derived from the system networks relating to the experiential function of language in the systemic-functional model.
(For a detailed account of relations in systemic grammar, the following are recommended: Halliday (1967a, 1967b, 1968), Hudson (1971), and Muir (1972).) These relations can be simply described as: sayer and process of saying; doer, doing, and thing affected by doing; number and enumerated; action and manner of action; and so forth. Ex. 10 above can once again illustrate these relations.

Similarity Chain 1, already identified above on page 51, can be the starting point for the interaction analysis; i.e., the members of this SC—as processes—will represent chain x. Chain y will represent an Identity Chain which includes girl and woman (12 members of tokens are expressed in the Ex. 10 excerpt). When the LR text is examined, it should be noted that several members of the IC are in the same relation with the "process" members of SCI. More specifically, girl (or woman) has the role of "actor" vis-à-vis the process of action expressed by "go" or "run." Thus, the requirement for chain interaction has been met. This chain interaction can be shown below:
Further examination of Ex. 10 results in noting that two members of the process of "running" of chain x are related to the same "location." Thus, the requirement for chain interaction between chain x and another chain, chain z, has also been met. This additional interaction can be reflected as follows:

Interactions between the members of chain x and chain y and two other Similarity Chains—which will be specified here as chain a and chain b—are also possible. Chain a contains members of tokens of **little** which are
realized as modifiers to some members of chain y at the level of nominal group rank. Chain b contains tokens of fast which express the relationship of manner of action to some members of chain x. The inclusion of these interactions can be displayed as follows:

```
unit  | chain a | chain y | chain x | chain b | chain z
------|---------|---------|---------|---------|---------
  4    | little  | girl    | go-out  | fast    | place   
  5    | little  | girl    | go-out  | fast    |         
 16    | little  | woman   | run     | fast    |         
 37    | little  | daughter| go      |         | house   
 37    |         | girl    | run-out |         |         
 39    |         |         |         |         |         
```

Figure 4. Chain Interaction Expressing Modifier-Actor-Action-Manner-Location in Ex. 10

The above discussion has not exhausted all of the possible chain interactions to be found in Ex. 10. Figure 4 has not included, for example, the actor-action-goal relationships realized as girl-find-nut/berry, respectively, in units 4 and 6. Furthermore, Ex. 10 is only an excerpt from a text. Therefore, particular tokens might not have been included in an IC or SC when considering Ex. 10 above, whereas they might have been included in chains when considering the text as a whole. Similarly, the requirement for chain interaction may not have been met when only Ex. 10 was considered; whereas, it might have been met when the total text was examined.
A chain interaction analysis represents a doubly analyzed structure: it includes the same structural role configurations and it maps these roles in the configuration onto similar classes of items. Chain interaction, therefore, can be said to be a deep synthesis of grammatical and lexical componential cohesion (Hasan, in press a). The elements or categories of narrative-form schemes (those outlined in Section 3 above) are expressed in terms of the abstractions of the series of actions or processes on the event-line which Gleason (1968) and Gutwinski (1976) argue is the backbone of a narrative. However, Gleason and Gutwinski also point out that participants, as the semological constituents of narratives related to some or all of the actions and processes by roles, are of equal importance. What the interactions of identity and similarity chains represent, therefore, are both the event-line and the participant-line of the typical semologic structure of narrative.

Recall the principle of transformation which underlies the relationships obtaining among the obligatory elements of narrative-form schemes. Even though these elements are abstractions, the terms themselves suggest the sense relations of reiteration, synonymy, antonymy, hyponymy and meronymy already described above. The terms of equilibrium and disequilibrium constituting a transformation of
A to non-A, for example, suggest a sense relation of either antonymy or synonymy/reiteration (with the second term negated). This morphological transformation, as well as the other transformations identified by Todorov (1971) and discussed above, along with the principle of succession, define narrative form. In stories, these principles must be realized in a semantically relevant way and it is the notion of cohesive harmony which will provide the means to capture much of this relevancy.

5. The Cohesive Harmony of Texts

In order to explicate the notion of cohesive harmony, four new terms must be introduced. First of all, the total set of tokens of a LR text consists of two kinds of tokens: relevant tokens and peripheral tokens. Relevant tokens are those tokens which form the identity and similarity chains. The difference between total tokens and relevant tokens is called "peripheral" tokens. These are the tokens which have not been included in any chain. If a text is coherent, a gist of that text can be adequately expressed without making use of these peripheral tokens. The subset of relevant tokens which interact, Hasan (in press a) is called central tokens; and, according to her, it is these central tokens which contribute the most to the coherence of a text. (These are the tokens displayed in
Figures 2-4 in Section 4. d.). Cohesive harmony in a text is an indication of how individual messages are hung together in relation to each other and is expressed by the ratio of central tokens to relevant tokens. In the present study, this ratio will be called the cohesive harmony index and will represent the major variable for comparing narrative competence in each of the three contexts in which children produced their stories. Several other factors may be operating along with this cohesive harmony index and may vary across contexts as well. For example, as children produce longer texts or are able to construct more complex clauses, the cohesiveness of their texts may be affected. Consequently, factors such as the length of texts and the complexity of clauses were also investigated.

What can be predicted in the retelling, dictating, and writing contexts relative to narrative competence? Children were read a story and then asked to tell that story to a naive listener in the retelling context. One prediction that follows from the arguments above is that their narratives will reflect greater cohesive harmony in this context since the children are responding to a well-structured stimulus and because they are using an oral channel with which they have had the most communicative experience. In contrast, in the dictation and writing contexts, the structured stimulus is lacking since the
children must produce an original story of their own. In addition, these two other contexts involve the written channel of communication. However, the retelling context also includes a memory input factor which may affect the children's narrative capabilities in this context. For example, Martin (1977) found that six-seven year old children employed semantic structures significantly different from older children in the two tasks in which remembering a story was a condition for their telling it. Therefore, the fact that children have less control over the details of the story they tell and must draw from what they remember about it may override the fact that the story stimulus is a structured one in the retelling context and may result in a lower cohesive harmony index in this context than in the dictation or writing contexts.

In the dictation context, children have a scribe to do the writing and are free to compose their stories; in the writing context, they are still dealing with the mechanics of writing as well as simultaneous concerns of how to spell words and how to punctuate, and so forth. The dictation context, therefore, might result in a higher index than in the context in which the children are writing themselves. On the other hand, in the dictation context, children are free also to ramble on and may lose track of where their stories are going since the scribe is there to
-write the story down; whereas, in the writing context, children may set more reasonable limits for themselves and put down only the essential elements of their stories.

To sum up, there is evidence that would suggest, and a reasonable basis for, expecting differences in cohesive harmony as a function of context. If composing rather than mechanical production requirements are prepotent in the narration, then greater cohesive harmony can be predicted for the dictation condition. If, however, mechanical production requirements prevail, then it can be assumed that capacity limits will dictate one of two possible outcomes in the writing context: In the first case, selection restrictions may eliminate lower peripheral or optional elements from the text by a child, in which case, greater cohesive harmony in the writing context should be predicted. On the other hand, if selection restrictions are not an operative factor, then competing demands on production capacity would have an adverse effect on writing, but not on dictation, leading to a prediction of greater cohesive harmony in the dictation context. No differences among contexts would reduce, but not rule out, the likelihood of either explanation, suggesting, however, a single underlying basis for production in all three contexts. Greater cohesive harmony for the retelling context would suggest a strong memory explanation, whereas a lower
cohesive harmony for the retelling context would argue strongly for an explanation based upon intentions.
CHAPTER III
PROCEDURES AND METHODS

A. PROCEDURES

1. Procedures for data collection

   a. Story retelling

   Small groups of 4-6 children were taken out of the classroom to a place where the stimulus story could be read to them without interruption. The reader brought several books into the session, selecting the target book for attention as the task was explained. The target book in the present study was *The Magic Porridge Pot* by Galdone (1976). The children were told that they would be read a new story which they would be retelling to a teacher who did not know the story. The reader then read the story as it would be typically read in the classroom, providing enough time so that the pictures could be viewed. Upon completion of the reading, the reader went through the book a second time, showing each page in turn, not commenting but accepting any spontaneous comments about the story from the children. Then each child was taken to a listener who was introduced as a teacher who ostensibly did not know the story. The number of children in each group did not exceed the number of listeners available so each child responded to the
retelling task immediately after the reading session was completed. The entire session was tape-recorded. The listener explained that (s)he did not know the story that had just been read and asked the child to retell it, explaining that the purpose of the tape recording was to share the story later with others. Once the retelling began, the listener was careful not to interact, interject, or interrupt the child's production except to pose neutral questions to give the child an opportunity to retell as much of the story as the child remembered.

b. Story dictating

Expectations for telling stories to adult scribes were established prior to the data collection. More specifically, children had already told stories to a scribe while being tape-recorded as an ongoing classroom activity. At the time of collection, each child was taken out of the classroom and individually asked to make up a story. The child was told that his or her story could be as long (or as short) as (s)he wanted and that it could be about anything that interested him or her. In an attempt to avoid a retelling of a known story (e.g., "The Three Little Pigs"), the child was encouraged to tell his or her "own story" rather than one (s)he had heard or read elsewhere. Before the child's story was taken down in manuscript by a researcher who acted as a scribe, an explanation
about the scribe's writing constraints was also included so that the child could be aware of his or her need to monitor dictation tempo. As the child dictated his/her story, care was taken to insure that (s)he see the actual words of his/her story written down. The entire session was tape-recorded. As in the classroom recording of the story-telling, the child was told that the purpose of the tape recording was to check the accuracy of the scribe's copy before it was typed and given to the child. The child's story then became part of a classroom storybook. The researcher attempted to keep up with the child's own dictation pace, accepting any comments or instructions the child gave regarding the scribe's performance. (If the child dictated very fast and appeared to be completely unaware of the research/scribe's inability to write down his/her story, the researcher/scribe did his/her best in writing it down but made no comment about the child's dictation pace.) The researcher was careful not to interact, interject, or interrupt the child's narrative production once the child began his or her story. (See the listener's role and behavior in the Story Retelling Procedure, A. 1. a. above.) In the event that the child's response was a rhyme, a poem, a description, or a retelling of a known story—that is, not the child's "own story"—
it was not included for analysis and a subsequent story was elicited.

c. Story Writing

Expectations for telling and dictating stories were established prior to the collection of the writing data (see procedures A. 1. a. and b. above). In addition, most of the children had become accustomed to writing for themselves in blank books on a daily basis. At the time of the collection, each teacher talked with the children to set up expectations for story writing. A researcher was present throughout. The teacher reminded the children of the stories they had dictated and how good those stories were, holding up the classroom storybook as a visual reminder. With this introduction, the teachers then asked the children to write a "pretend" story of their own which they thought someone would like to read or hear. The children were told that no help would be given in spelling but were encouraged to put down the letters which "made sense to them" (i.e., to "invent" spellings) for words they did not know how to spell. The children were told that either the teacher or the researcher would be asking them to read their stories when they were finished to make sure the teacher knew what their stories said. Unlined paper was provided for the children for writing down their stories.
While the children wrote their stories, the teacher and the researcher offered encouragement and only that help needed to ensure the production. As the children finished their stories, the teacher or researcher asked the children to read their stories, noting words in the child's spellings that were undecipherable or providing any other information which might have been relevant for understanding the children's written productions.

2. Initial Transcripts

a. Procedures for Oral Productions (Story Retelling and Story Dictations)

Subjects' audio-taped story retellings and story dictations were typed in traditional orthography and without punctuation with the exception of proper nouns and the first person singular pronoun "I." Lines of typed text were numbered sequentially to facilitate reference. Filled pauses, word corrections, and tongue slips (Rochester and Martin, 1977) were included in these initial transcripts. False starts in which the speaker abandoned wordings to begin again were also included. These non-silent phenomena have been referred to in the literature as "common speech errors" (Clark and Clark, 1977). The total verbalization of the child, in either context, retelling or dictating, thus corresponded to what Hasan (in press c) terms the
substance length of a language piece. It consisted of the totality of language patterns produced by the child which would have been available to the listener or the scribe in each of the oral story contexts. Unintelligible words or segments of the language piece were noted in the following ways by the typist: (...) for what appeared to be single words; and, (.......) for longer stretches of utterance. These unintelligible segments were very infrequent in the data. Any listener/scribe interjections were included and identified in the transcription.

b. Procedures for Written Story Productions

In contrast with the retelling and dictation procedures where an initial transcript was made, in the writing context the child's own written production itself, plus any relevant notes gathered when the child read back his/her story to the researcher, were treated as an initial transcript (see Section 3. b. below for the procedures used in identifying and parsing these written transcripts).

3. Identification of the "Text" and Parsing Procedures

a. Oral Productions of Story Retelling and Story Dictating Procedures

Using the initial transcripts described above and the audio-tapes, two research associates working together
used the following notational system to identify the "text" produced by each child:

# Boundaries of each subject's text production to be analyzed.

[ ] Non-silent phenomena (filled pauses, repetitions to correct, abandoning a sentence form, etc.) to be excluded from the analysis.

** Listener/scribe interjections to be excluded from the analysis.

** ** Child responses to Listener/scribe interjections not considered a part of the child's intended text to be excluded from the analysis.

The resulting discourse/text—what Hasan (in press c) calls the semantic length of a language piece—was then parsed into units which formed the basis for the cohesion analysis. In the larger study* from which the present data has been drawn, the basic unit of text segmentation was defined as a single independent clause together with any subordinate clauses grammatically related to it. This is the "minimal terminal unit" or "T-unit" defined by Hunt (1964, 1965) and also used by O'Donnell, et al. (1967) in their study of the syntax in speech and writing of elementary school children. According to O'Donnell, et al., this

is the unit which in an even earlier study by Loban (1963)
was called the "communication unit."

At this point, these cohesion units (T-units) were
identified and certain marks and other information were
added to the typescript by the researchers on the basis of
audio-tape information. Although the present study has
adopted a unit of segmentation (to be outlined below) which
differs from the T-unit definition of the larger study, the
following notational system for this information is the
same in both studies:

/ / Boundaries of each cohesion unit to be analyzed

1, 2, ... n Cohesion units numbered sequentially.

? or ! Question marks and exclamation points
were added when the child's intona-
tion warranted it and proved helpful in subsequent analysis. (No other
terminal punctuation was indicated.)

" " Direct quotes for which the child
identified lexically.

" " ((speaker: name)) Direct quotes for which the child
did not lexically identify the
speaker but did identify the speaker
by using a role voice.

" " ((speaker: ?)) Direct quotes which are ambiguous
with respect to speaker attribution
either by lexical or by role voice
identification

- (hyphen) Identifies a "word" made up of more
than one lexeme.

-- (dash) Clarifies phrases usually set off
by commas in graphic language such as appositives, etc.
Identifies contrastive stress or other kinds of emphasis used by the child.

Once the text was identified and segmented according to the procedures described above, the children's productions were then retyped reflecting only the sequentially numbered cohesive units. At this time an identification number was assigned to each of the children's productions so that their privacy was protected and so that the subsequent cohesion analysis would be blind. This retyped parsed transcript was now ready for cohesion analysis coding.

b. Written Productions Procedures

The identification of the semantic length of the text and the parsing of the text into units was done by referring to the child's own writing sample and the researcher's notes. More specifically, using the written "initial" transcription (described in A. 2. a. above), one research associate wrote down—in traditional orthography and without punctuation as in the oral initial transcripts—the units of the identified text and another associate confirmed them. Any questions regarding the text from either research associate were resolved together. Many of the same concerns for developing a notational system for editing the oral productions existed in the written
productions as well. For example, decisions about the boundaries of individual texts and about excluding "pencil errors"--an unintended repetition of a word--needed to be made. Thus, some features of the notational system for oral productions were specifically used when relevant (e.g., in numbering the units and using question marks and exclamation points) and some of the features (e.g., text boundaries) were just kept in mind when identifying and parsing the written texts. Sometimes children read words they intended to be part of their story but they did not include them in their written productions. The notation, (child read ____) , was adopted to include this kind of information. This information was not coded or counted but was used in helping to make decisions about the coding of other cohesive devices found in the text.

Just as in the oral productions, the confirmed units--with assigned identification numbers--were then typed. At this stage these type-written productions corresponded to the retyped parsed transcripts of the two oral productions and were now ready for analysis.

4. Definition of the Unit of Text Segmentation

As indicated in Section A. 3. above, the present study deviated from the larger study with respect to the point of segmentation in the texts analyzed. Instead of
the T-unit, the clause unit was adopted as the unit of text segmentation. The analyses in this study were drawn mainly from a systemic grammar framework. Consequently, adopting the clause (as defined by reference to the system network of transitivity) as the basic unit of segmentation was more internally consistent.

The clause unit consists of the major independent clause plus linguistic strings of the following four types: (1) subordinate rankshift and dependant clauses; (2) character identifying clauses; (3) certain greetings, direct addresses and exclamations; and, (4) certain dialogue sequences.

Both rankshift clauses (namely, those clauses functioning as a group or word; i.e., as units of ranks which are lower than the clause) and subordinate dependent clauses were included in the unit. The underlined clauses below are examples of a rankshift clause and a dependent clause, respectively:

1 finding a magic pot kept from from being hungry
    when she got home, she put the pot on the fire

According to Hasan (in press c), two distinct planes of narration are possible in the imaginative use of language. In the direct plane of narration, the "speaker" is the omniscient narrator or the omniscient dramatic 'I'.
In the **indirect plane of narration**, a character in the story is involved in the movement of the narrative by "saying things." That is, the indirect plane of narration is realized by the dialogue of characters. Thus, when a teller/writer of stories identifies the character who is talking, that identifying clause is not considered as a distinct unit but is included with the adjacent "thing" the character said.

2 (a) / the monster said "I am hungry" /
(b) / "I am hungry" the monster said /
(c) / the monster said "I am hungry" /

((speaker: monster)) / I want some food" /

The character identifying clause may precede or follow the said thing. Thus, either 2 (a) or (b) is considered one unit. However, 2 (c) is considered two units since the second thing the character said is an independent predication.

Categories (1) or (2) above cannot stand on their own as separate units; only decisions about which unit they should be subsumed under are involved. Categories (3) and (4) below are also involved in the indirect plane of interaction. These latter categories cannot be defined as clearly as Categories (1) and (2) because Categories (3) and (4) may or may not stand alone as separate units.
Examples of cases in which Categories (3) and (4) are subsumed within an adjacent clause and in which they are considered as distinct clauses will be needed to provide clarification.

Typically if a greeting or an exclamation was all a character said in some dialogue or sequence, then it was treated as a separate unit; otherwise the exclamation or greeting was subsumed within the adjacent clause the character said. Consider the following:

3 (a) / "wow!" the girl said / then she ran to the treasure /
(b) / "wow! this is some treasure" said the girl /
(c) / ((speaker: girl)) "wow!" / then she ran to "the treasure"/
(d) / ((speaker: girl)) "wow!" / ((speaker: boy)) this is some treasure /

In 3 (a) and 3 (b) the exclamation, wow, has been included; in 3 (c) and 3 (d) wow is a separate unit. In 3 (a), wow is included with the character identifying clause. In 3 (c), the character who says wow is not lexically identified, but has been identified by the child by using a role voice in the audio-taped version of the text. In 3 (b) wow is included because the character has spoken more than the exclamation; whereas in 3 (d) wow is a separate unit.
because another character, boy, speaks **this is some treasure**.

In Category (4) both the indirect plane of narration and clausal ellipsis (usually in question-answer sequences (Halliday and Hasan, 1976)) are involved. Again, examples may be helpful:

4 / the boy asked "will you go to the store?" /  
(a) / "yes I will go" the man answered /  
(b) / the man answered "no" /  
   / ((speaker: man)) "it isn't necessary" /  
(c) / ((speaker: man)) "no" /  
   / ((speaker: man)) "it isn't necessary" /

4 (a), (b) and (c) represent responses to the character-boy's question. In 4 (a) *yes* is included with the rest of what is said because the total string *yes I will go* is the full form of the response. (It would be considered one unit even if the polarity of the response had been just the opposite—namely, "no I will not go." Once more the response is the full form.) In contrast, *no* in 4·(b) expresses polarity and presupposes all of the remaining features of the interrogative clause except the polarity. In this case *no* forms a unit with the character identifying clause. The next sequence, *it isn't necessary* is a separate unit. In 4·(c) no character identifying clause
5. Cohesion Analyses

Many of the procedures concerning the cohesion analyses to be performed on the texts in this study have already been discussed in Chapter II. Consequently, only a brief summary of its several stages will be provided here.
Further details will be included when it is necessary to explain the nature of the dependent variables examined in the study.

a. **Identification of Grammatical Cohesive Devices**

The first step of the cohesion analysis was the identification of the implicit cohesive devices employed by the children. These are the devices of reference, substitution, and ellipsis. Both intra- and inter-clause cohesive devices were identified. This was a departure from Halliday and Hason (1976) which focused upon devices found across sentence units only. However, the identification of the cohesive devices at the inter-unit level as well as at the intra-unit level was a prerequisite for any chain interaction analysis. Any restricted exophoric implicit device was noted by circling the device. The use of an ambiguous device was marked by placing a small question mark near it. The number of restricted exophoric devices was a dependent variable. A device was considered ambiguous when it was clear that the ultimate referent was somewhere in the co-text, but unclear as to the specific one the device referred to. Usually this ambiguity arose with referent items and in cases of subject ellipsis. The handling of these ambiguous items will be discussed below (Section A. 5. d.).
b. Lexical Rendering

In order to determine the nature and the amount of chain interaction in individual texts, the formation of identity and similarity chains is necessary which, in turn, requires that texts be transformed into those consisting wholly of lexical items or tokens. Such a transformation is called lexical rendering by Hasan (in press a). Lexical rendering consists of substituting the interpretive source in place of implicit or grammatical cohesive devices, dropping "function words" (e.g., conjunctions, prepositions, and so forth), and changing lexical items into their stem forms. In the example,

1. once upon a time there was a girl
2. one day she went to the woods

the referent item she in unit 2 refers back to girl in unit 1. Therefore, in the lexical rendering of this text, girl would be put in the place of she in unit 2. In addition, story markers were treated as one token, lexical verbs were transformed into their stem forms and articles and prepositions were dropped. The resulting lexically rendered text would look like this:

1. once-upon-a-time be(exis) a girl
2. one-day girl go woods
Items underlined indicate the cohesively interpreted lexical tokens (girl for she in our case). The total number of tokens of each lexically rendered text was determined for all texts produced by the children. (See Section 4. d. in Chapter II.) Again any restricted exophoric items were circled; ambiguous terms were marked with question marks.

c. Formation of Identity and Similarity Chains

Identity chains were formed first by scanning for those items which were related by a relationship of coreferentiality. The majority of these tokens was the cohesive devices of reference (pronouns and the article the) and subject ellipsis. Sometimes there were tokens which were the same as ones found in identity chains, but were not placed in a particular chain because they were not of the same identity relationship. They may have constituted another identity chain—two identity chains of girl, e.g., or they may have entered into a similarity chain—e.g., two tokens of girl forming an identity chain and two tokens of girl, each girl referring to two different girls. Therefore, all tokens which could enter into identity chains were exhausted first; then tokens which were based upon relationships of co-classification and co-extension were identified and placed into similarity.
chains. The five semantic relationships—reiteration, synonymy, antonymy, hyponymy, and meronymy—were considered in forming these similarity chains. Similarity chains constituted the lexical cohesive devices found in a text. In forming the two chains, the notations identifying restricted exophoric tokens and ambiguous tokens were retained. The number of tokens which formed chains was counted. These were the relevant tokens of the text.

In his study of the cohesive features in literary texts, Gutwinski (1976) reported the cohesive density of the texts he analyzed. His analysis indicated that there was one cohesive item per 6.8 words in James (an excerpt from *The Portrait of a Lady*) and one per 7.5 words in Hemingway (an excerpt from "Big Two-Hearted River: Part 1"). He found that this density of cohesive items did not differ greatly in the texts, but the proportion of the kind of cohesive device employed by Hemingway and James differed and indicated distinctive style differences between the two authors. The notion of cohesive density was explored in the present study also. Here, in contrast with Gutwinski, it was defined as the proportion of relevant tokens of the total number of tokens of a lexically rendered text. Thus, only the general notion of cohesive density was applied in the present study, and not the particular way Gutwinski used it. Not all relevant tokens interact. But for an
item to interact, it had to have been included either in an identity or similarity chain. Consequently, a comparison of the cohesive density with the cohesive harmony index may indicate a developmental characteristic in narrative competence.

d. Chain Interaction--Cohesive Harmony

The subset of relevant tokens which interact in a text are called the central tokens (Hasan, in press a). The number of central tokens over the number of relevant tokens constituted the cohesive harmony index which was the major variable in this study. To review briefly the conditions for chain interaction, two members of chain x must stand in the same relation to two members of chain y. The relations at the levels of group and clause are those specified and described in systemic grammar. When ambiguous items were involved, all possible tokens were considered for potential interaction. If found to be in some interaction according to the conditions specified above, the tokens with which they interact were counted and ambiguous ones were subtracted. That is, credit was given for the fact that some item (of chain x which includes ambiguous items) may have been in the same relation to other items (of chain y), but had to be modified to distinguish it from those texts in which no ambiguous items were found.
B. METHODS

1. Subjects

The subjects in the present study were middle-class six to seven-year-old, first grade children who produced a "story" in all three contexts—retelling, dictation and writing. Since many children beginning first grade (in the present study, in October) were not as yet writing, stipulating such a requirement obviously lowered the possible number of children who would be eligible for inclusion in the study. In addition, even though the children were asked to tell or write their "own story" (in the dictation or writing contexts, respectively), their productions were not always original nor always of the "story" genre. Two major factors were considered for deciding whether a "text" was a "story": (1) use of story markers such as once upon a time or happily ever after; and (2) use of first and second person pronouns only in the indirect plane of narration.* The second factor, therefore, excluded narratives about personal experiences of the type analyzed by

---

*I do not want to imply that if 'I' is used in the direct plane of narration in a text, it would not be a story. Certainly the 'I' as the omniscient narrator is a frequent feature of narrative. At this level of development, however, this factor easily excludes texts such as "I like my cat... I like my dog" and "we went to COSI and saw lots of things... we saw an old mine..."
Labov and Waletzky (1967) and ascertained that the same genre was present in all three contexts even though some of the children's attempts to produce a story were fragmentary.

Eleven children met the two criteria—that their productions were of the story genre and that they were their "own stories" in the dictation and writing contexts.

2. Research Questions

The major question posed in the present study was whether the contexts in which the children produced their stories affected the cohesiveness of their stories. The cohesive harmony index consists of the interaction of semantic structures and as argued above captures the rudiments of narrative form. Therefore, this question can be phrased as: To what extent does context influence the communicative competence of children using the genre story? More specifically, will context influence the completeness and/or cohesiveness of the stories produced by children?

Other minor questions were asked as well. As children produce longer texts and employ more complex grammatical structures, to what extent will context affect the cohesiveness of their stories? To what extent will children employ restricted exophoric implicit devices across contexts? To what extent will cohesive density vary as a function of the three contexts?
3. Coding

A reliability check of the initial stage of the cohesion analysis was done by this investigator and another research associate trained in cohesion analysis. Ten texts (whose basic segmentation was the T-unit) were randomly selected from the pool of texts collected in the larger study and were coded for instances of cohesion in the five categories according to the analysis scheme described in Halliday and Hasan (1976). The correlation coefficient calculated for the two coders at this initial stage was .96 (SPSS Subprogram RELIABILITY).

The texts analyzed in the present study were taken from this larger pool of texts using the criteria described in B. 1. of this chapter. All subsequent stages of cohesion coding analysis outlined in Chapter II and Chapter III were performed by this investigator only.

4. Data Analysis

A one-factor repeated design Multivariate Analysis of Variance procedure (MANOVA) was performed on six dependent variables with context (retelling, dictating and writing) functioning as the within-subjects treatment comparison. Computer program CANOVA, a component analysis of variance package (distributed by Clyde Computing Service, 1973) which includes a multivariate analysis of variance,
was used for this MANOVA procedure. This multivariate analysis uses Wilks' lambda criterion (likelihood test) using Rao's approximate $F$ test. The six dependent variables analyzed were as follows:

1. Cohesive harmony index (number of central tokens/number of relevant tokens)
2. Cohesive density index (number of relevant tokens/total number of tokens)
3. Total number of tokens
4. Number of units
5. Mean number of tokens per unit
6. Number of restricted exophoric implicit devices used.
CHAPTER IV
RESULTS

The multivariate tests for significance performed on the context treatment variable resulted in a multivariate $F_{(12,30)} = 4.17$, $p < .001$. A detailed display of the MANOVA findings can be found in Table 2. Since significance was observed for the context comparison, this significant multivariate effect was followed up by performing six univariate analyses of variance (ANOVAs), one for each of the six dependent variables. The rest of this chapter has been organized into four parts: the first part will address the results of the follow-up ANOVA of the major dependent variable, the cohesive harmony index; the second part will report the findings of the cohesive density index; part three will present the results of the clause complexity factor (the mean number of tokens per unit) and the two length factors (total number of tokens and number of units); finally, the last part will provide the results of the ANOVA of the restricted exophoric device variable which was the only dependent variable for which no significant differences were obtained.
1. Cohesive Harmony

Averaged ratios of central tokens to relevant tokens (the Cohesive Harmony Index) by context are contained in Table 3. An examination of Table 3 indicates that the index was highest in the retelling context and that the index was higher in the dictation context than in the writing context.

As indicated in Table 4, the follow-up univariate test statistic on the cohesive harmony variable was significant, $F(2, 20) = 11.60, p < .001$. The Geisser-Greenhouse conservative $F$ test was used to "correct" the above $F$ statistic for positive bias by reducing the conventional degrees of freedom to degrees of freedom $= 1,10$ (Kennedy, 1977). Significance for the context effect was still demonstrated at $p < .01$ using the conservative degrees of freedom.

Tukey's HSD test was used for the purpose of comparing the means at each level of context. The conservative posture which was adopted for the Geisser-Greenhouse $F$ test was maintained in performing this post hoc analysis. That is, the conservative number of denominator degrees of freedom (10), at $p < .05$, was used in selecting the value of the studentized range statistic employed in the Tukey procedure. The following pattern was seen for the cohesive harmony index: the index was significantly higher in the
Table 2

CONTEXT MANOVA ON SIX STORY-TEXT VARIABLES

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>df Hyp</th>
<th>df Err</th>
<th>F</th>
<th>p  &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context (A)</td>
<td>2</td>
<td>12.000</td>
<td>30.000</td>
<td>4.166</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>5.000</td>
<td>15.500</td>
<td>1.293</td>
<td>.317</td>
<td></td>
</tr>
<tr>
<td>Subjects (S)</td>
<td>10</td>
<td>60.000</td>
<td>83.645</td>
<td>1.024</td>
<td>.456</td>
</tr>
<tr>
<td></td>
<td>45.000</td>
<td>85.579</td>
<td>0.830</td>
<td>.751</td>
<td></td>
</tr>
<tr>
<td></td>
<td>32.000</td>
<td>85.869</td>
<td>0.746</td>
<td>.823</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21.000</td>
<td>84.308</td>
<td>0.647</td>
<td>.871</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.000</td>
<td>80.630</td>
<td>0.472</td>
<td>.925</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.000</td>
<td>74.500</td>
<td>0.056</td>
<td>.998</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

Means and Standard Deviations of Cohesive Harmony by Context

<table>
<thead>
<tr>
<th>Context</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retelling</td>
<td>0.85</td>
<td>0.08</td>
</tr>
<tr>
<td>Dictation</td>
<td>0.81</td>
<td>0.10</td>
</tr>
<tr>
<td>Writing</td>
<td>0.49</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Note. Each mean and standard deviation is based on an $n = 11$ and is reported to the nearest hundredth place.
Table 4
ANOVA OF COHESIVE HARMONY FOR CONTEXT FACTOR

<table>
<thead>
<tr>
<th>Factor</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p &lt;</th>
<th>p* &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context (A)</td>
<td>2</td>
<td>0.425</td>
<td>11.60</td>
<td>.001</td>
<td>.01</td>
</tr>
<tr>
<td>Residual (SA)</td>
<td>20</td>
<td>0.037</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Level of significance for Geisser-Greenhouse conservative F test using reduced degrees of freedom (1, 10).
retelling context than it was in the dictation and writing contexts; and the index was, in turn, significantly higher in the dictation context than it was in the writing context.

2. Cohesive Density

Averaged ratios of relevant tokens to the total number of tokens (the Cohesive Density Index) by context are contained in Table 5. An examination of Table 4 indicates that the pattern for the cohesive density index appeared to be similar to the pattern seen for the cohesive harmony index; that is, the index was highest in the retelling context and higher in the dictation context than it was in the writing context.

Table 6 summarizes the results of the follow-up ANOVA for the context effect on the cohesive density variable. Significance was observed for the context treatment, $F(2,20) = 6.01, p < .009$. As in the analysis of the Cohesive Harmony Index, the Geisser-Greenhouse conservative $F$ test was employed. Significance for the context treatment was demonstrated at $p < .05$ using the conservative, reduced degrees of freedom.

Using the same conservative stance in the post hoc analysis, Tukey's HSD test was employed for comparing the means of the cohesive density index at each level of context. The results indicated, however, that the cohesive
Table 5
Means and Standard Deviations of Cohesive Density
by Context

<table>
<thead>
<tr>
<th>Context</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retelling</td>
<td>0.89</td>
<td>0.05</td>
</tr>
<tr>
<td>Dictation</td>
<td>0.85</td>
<td>0.04</td>
</tr>
<tr>
<td>Writing</td>
<td>0.69</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Note. Each mean and standard deviation is based on an n = 11 and is reported to the nearest hundredth place.
Table 6
ANOVA OF COHESIVE DENSITY FOR CONTEXT FACTOR

<table>
<thead>
<tr>
<th>Factor</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p &lt;</th>
<th>p* &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context (A)</td>
<td>2</td>
<td>0.130</td>
<td>6.01</td>
<td>.009</td>
<td>.01</td>
</tr>
<tr>
<td>Residual (SA)</td>
<td>20</td>
<td>0.022</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Level of significance for Geisser-Greenhouse conservative F test using reduced degrees of freedom (1, 10).
density index followed a different pattern from that which was seen in the cohesive harmony index data. More specifically, the only significant difference seen here was between the retelling and writing contexts: namely, the cohesive density index was higher in the retelling context than it was in the writing context. Thus, there were no differences observed relative to the cohesive density measure between the retelling and the dictation context or the dictation and the writing context.

3. Clause Complexity and Two Measures of Length

Averaged mean number of tokens per unit (the Clause Complexity measure) and averaged tokens and units (the length measures) are contained in Table 7. An examination of Table 7 indicates that the children produced longer texts (measured either by number of tokens or units) in the retelling context than they did in the dictation context, and that they produced longer ones in the dictation context than they did in the writing context. A similar finding was seen for the clause complexity measure. That is, more complex clauses were found in the retelling context than in the other contexts; likewise, more complex clauses were seen in the dictation context than in the writing context.
Table 7

Means and Standard Deviations of Measures of Clause Complexity and Token and Unit Length by Context

<table>
<thead>
<tr>
<th>Measures</th>
<th>Clause Complexity</th>
<th>Tokens</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Retelling</td>
<td>5.15</td>
<td>0.64</td>
<td>194.09</td>
</tr>
<tr>
<td>Dictation</td>
<td>4.59</td>
<td>0.48</td>
<td>104.09</td>
</tr>
<tr>
<td>Writing</td>
<td>4.17</td>
<td>0.79</td>
<td>38.82</td>
</tr>
</tbody>
</table>

Note. Each mean and standard deviation is based on an n = 11 and is reported to the nearest hundredth place.
Follow-up ANOVAs were performed on the clause complexity dependent variable and on each of the length dependent variables. Significance was observed in all three univariate analyses for the context effect. Once again, besides the conventional $F$ tests, the Geisser-Greenhouse conservative $F$ tests were performed. Significance was still observed for the context treatment, as summarized in Table 8.

Tukey's tests were performed (using the conservative approach as described in 1 and 2 above) to compare means (of the clause complexity measure and the token and unit measures, respectively) at each level of context. Not surprisingly, the pattern of results for the two length measures was the same. The texts produced in the retelling context were significantly longer than those produced in either the dictation or writing context. However, no significant differences relative to the text length existed between the dictation and writing context. With regard to clause complexity, significant differences obtained only between the retelling and writing contexts. Clause complexity did not differ both between retelling and dictation and between dictation and writing.
Table 8

MEAN SQUARES, F-VALUES AND LEVELS OF SIGNIFICANCE

ON MEASURES OF CLAUSE COMPLEXITY AND TOKEN AND UNIT LENGTH FOR CONTEXT FACTOR

<table>
<thead>
<tr>
<th>Measures</th>
<th>Clause Complexity</th>
<th>Token Length</th>
<th>Unit Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>MS</td>
<td>F</td>
<td>p&lt;</td>
</tr>
<tr>
<td>Context (A)</td>
<td>2.70</td>
<td>5.76</td>
<td>.01</td>
</tr>
<tr>
<td>Residual (SA)</td>
<td>0.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Level of significance for conventional F test using conventional degrees of freedom (2, 20).

**Level of significance for Geisser-Greenhouse conservative F test using reduced degrees of freedom (1, 10).
4. Restricted Exophoric Devices

Only nine instances of restricted exophoric devices were found in the thirty-three texts produced by the eleven children in this study. The ANOVA of this dependent variable by context was not significant and is summarized in Table 9.
Table 9
ANOVA OF RESTRICTED EXOPHORIC DEVICES FOR CONTEXT FACTOR

<table>
<thead>
<tr>
<th>Factor</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context (A)</td>
<td>2</td>
<td>0.091</td>
<td>0.35</td>
<td>.71</td>
</tr>
<tr>
<td>Residual (SA)</td>
<td>20</td>
<td>0.258</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER V
DISCUSSION

The main purpose of the present study was to assess the narrative capabilities of eleven children who produced a story in three contexts—retelling, dictating and writing. This was done by examining how well the children used a story genre in each of the contexts. Children's capabilities were measured by means of a Cohesive Harmony Index which taps both story structure and the cohesive properties of texts. Five other variables besides the cohesive harmony of stories were also investigated. The discussion of the results of the variables will proceed in the reverse order reported in Chapter IV.

1. Restricted Exophoric Devices

It had been hypothesized that children's use of restricted exophoric devices might have been an important factor of assessing narrative capabilities. However, only nine instances of such devices occurred in the thirty-three texts produced by the children in the three contexts. This finding suggests that the children were quite capable of introducing and presenting characters in their stories and of using the definite article the appropriately so that the ultimate referent could easily be found in a text.
2. Clause Complexity and Length

The complexity of clauses and the length of texts produced in the three contexts were minor variables investigated in this study. As argued in Chapters II and III, as children produced longer texts or texts containing more complex clauses, these features of their texts might have been associated with lower coherence (as measured by the cohesive harmony index). However, while the multivariate test employed in the study was significant for context, no set of dependent variables clustered together to suggest any interesting explanatory construct to discriminate between or among contexts. Thus, it was for this reason that follow-up of the significant multivariate F was done univariately, that is, by performing six separate analyses of variance.

Chapter IV reported that significant differences relative to length were seen among contexts. It is not surprising to find that the children produced longer texts (measured either by number of tokens or number of units) in the retelling condition than in the other two contexts since this retelling context was wholly oral, the channel with which six-seven year old children are most familiar. That they were "retelling" the stimulus book read to them was probably also a factor contributing to the length of the texts produced in this context. Interestingly enough,
despite the fact that a scribe was available to write down their stories, the children did not produce significantly longer texts in the dictation context than they did in the writing context. There are two aspects which are similar in each of these two contexts which may explain this result: the requirement of having to compose an original story in the dictation and writing contexts might have represented a challenge for the children; and/or the fact that stories were written down (either by the scribe in the dictation context or by themselves in the writing context) might have had some salience for the children at this time in their development.

The children produced more complex clauses in the retelling context than they did in the writing context. Two factors seemed to be responsible for the complexity of clauses in retelling of the stimulus story: (1) subordinate dependent and rankshift clauses were much more provident; and, (2) children's use of extended text reference to repair the inaccurate sequences of events occurred more frequently. Neither of these were abundant in the writing texts which explains the difference observed between the retelling and the writing contexts.

In comparing dictated and written stories, more subordinate clauses and a few instances of extended text references were seen in the stories the children dictated,
but not enough of each to see any marked difference between these contexts. The frequency of these features in the retellings was not significantly higher than their frequencies in the dictated stories.

3. Cohesive Density

Relevant tokens are those tokens in a lexically rendered (LR) text which form either an Identity Chain (IC) or a Similarity Chain (SC). They represent the semantic relations of co-referentiality, co-classification and co-extension obtaining between and among "bits" of language in a particular text. The cohesive density of a text—the ratio of the number of relevant tokens to the total number of tokens—is related to the cohesive harmony of that text in a very important way: all tokens which interact had to have been included in either an IC or SC. Thus, the cohesive density of a text can be seen as a prerequisite stage for cohesive harmony and as such warrants investigation on its own.

The stories produced in the retelling context were much more cohesively "dense" (an average of 89% of the total tokens of texts were relevant ones) than the stories the children wrote themselves (here only an average of 69% relevant tokens). An interpretation for this finding cannot be based solely on either a memory for a structured
stimulus or some capacity limitation explanation. On the one hand, a presumption that children's recall of the relevant semantic relations as realized in the stimulus book produced the high percentage of relevant tokens in their retellings is untenable; for, if that were the case, dictated stories would have produced substantially lower cohesive density than the retellings—which did not occur. And, since there were no significant differences between the cohesive density of the children's dictated and written stories, an argument suggesting that children's struggles with the mechanics of writing is also inadequate; for if that were the case, the cohesive density would have been significantly higher in the dictations. An adequate interpretation for this finding should incorporate both explanations.

4. Cohesive Harmony

The major dependent variable explored in this study was the cohesive harmony index, which, it has been argued, taps both global story form and the semantic cohesive properties of stories. To the extent that the magnitude of the index (the ratio of central to relevant tokens) is some indication of the presence or absence of obligatory story elements and of the degree of cohesion present in stories, it reflects a competence in using the story genre in each
of the three contexts. The results reported in Chapter IV indicated that context did, indeed, affect the magnitude of the cohesive harmony index. The children produced the "best" stories—"best" defined here only in terms of the magnitude of the cohesive harmony index—in the retelling context. The cohesive harmony index is an indication of the extent of chain interaction in a particular text. As such it reflects the extent to which a speaker or writer is saying "similar kinds of things about similar kind [sic] of phenomena" (Hasan, in press a, p. 20). In retelling *The Magic Porridge Pot* (Galdon, 1976), subjects attributed the lack and lack liquidated to the characters; they competently expressed these characters; "goings" and "doings." The stimulus story consisted of two major episodes and contained only three characters; namely, a little girl who is the major protagonist of the story, her mother, and an old woman who gives the little girl a magic pot. Because they scored highest on story retelling, obviously the task was not a difficult one for the eleven children in the study. As a consequence, even though they were the longest texts, the children's retellings had more cohesive harmony than the stories produced in either the dictation or writing contexts.

Although the dictated stories were not as "good" as the retelling ones, they were "better"—that is, they
had a higher cohesive harmony index—than those which the children wrote themselves. In the dictation and writing contexts, children had the task of producing their own original stories which were written down. Dictated and written stories did not differ with respect to length or clause complexity; more interestingly, they did not differ with respect to cohesive density. That is, despite the fact that the dictated and written stories were similar along these three dimensions, the dictated stories had higher cohesive harmony than the written ones. Thus, the children were more capable of composing "better" stories when they had a scribe to write down their stories than when they had to both compose and write down their stories. Consequently, it is the children's simultaneous struggles with the writing task itself as well as orthographic concerns such as spelling and punctuation which seems to be the major contributing factor for explaining the difference in the stories created in the dictation and writing contexts.

5. Further Considerations of the Cohesive Density and Cohesive Harmony Findings

The major aim of the present study was to investigate the developing narrative capabilities of young first grade children. Such an aim involved a focus on the novice,
a child learning or becoming a storymaker, not on the expert. Inherent in such a focus, however, is the problem of how to document or measure this "becoming" since the tools to accomplish the task have been evolved from approaches whose orientation has emphasized the already expert or competent storymaker. Prevalent in these approaches are schemes of global narrative form or structure. In applying these schemes to stories which have been produced by young children and which are frequently brief, fragmentary and/or laden with ambiguous referent terms, the determinations as to whether certain elements of form are present are very difficult to make (Pappas, 1980). A concurrent aim of the present study, therefore, was to try to provide a more suitable means for analyzing and evaluating the stories produced by young children. The cohesive harmony measure has the advantage of tapping both global structure and semantic cohesive properties in stories. Furthermore, it can be more easily applied to brief or fragmentary stories and can be modified to take account of ambiguous devices.

One of the most interesting findings in the present study was the fact that the measures of cohesive density and cohesive harmony by context were different. More specifically, significant differences were seen between each of the three contexts on the cohesive harmony index;
whereas significant differences were seen only between the retelling and writing contexts on the cohesive density index.

If cohesive density is a prerequisite for cohesive harmony, it is not easy to explain why the pattern of the findings are different for the measures. Thus, it is necessary to re-examine the nature of these two measures in order to suggest what these findings might mean.

Assuming that the degree of coherence in texts is variable, Hasan (in press a) has been exploring the functioning of grammatical and lexical cohesion in the creation of coherence in texts. The cohesive density measure is an indication of the proportion of the tokens subsumed in chains; it is merely a "count" of tokens found in all of the separate cohesive ties. And, again, according to Hasan, the cohesive harmony measure is thought of as a correlate to the judgment of coherence; it is a "count" of the grammatical and lexical devices "marching in step" (Hasan, in press a, p. 17).

Another way to view these measures is to suggest that cohesive density and cohesive harmony may correspond to etic and emic perspectives, respectively. According to Algeo (1974), these terms were coined and proposed by Pike (1967) as concepts which are applicable to all human activities. Algeo has provided a good example to explicate
these concepts by describing the differences a noncardplayer and a bridge-player would see in observing a game of bridge. The noncardplayer, seen as an "alien" in this situation, may notice many things: cards being handled and passed around; players picking up the cards in front of them and carrying out short conversations in cryptic phrases; one player putting all of his cards on the table with the other three putting theirs down one by one; all of the cards being put together and the process repeated. The bridge-player, as the "native" to the game, on the other hand, sees different things: a distinct unit called a "hand" which consists of the deal, the bidding, the play and the scoring. The noncardplayer may have seen a number of etic facts which might have been fit into the emic categories of the bridge-player and others which would have been irrelevant. Moreover, other emically significant events might have been completely missed by the noncardplayer. Knowing which events at the card table are significant is knowing the rules of the game. Thus, the etic and emic standpoints are alternative ways of viewing the same reality. In Algeo's words,

The etic standpoint is a view from outside, either random in its selectivity or with a set of presuppositions that have only a chance relationship to the scene being described. The emic standpoint is a view from within that notices just those features of the scene that are marked as significant by internal criteria.

(p. 3)
For the present purpose, then, the concepts etic and emic can be adapted to describe a perspective or stance toward the data. Since the cohesive density measure by nature is presenting an alternative perspective—what has been suggested here as an etic one—differences on it compared to those seen on cohesive harmony are no longer so difficult to understand. Etic "facts" in this case are tokens in chains and they may or may not be "significant," that is, meet the requirement for interaction. Only between the retelling contexts and the writing contexts were differences observed relative to cohesive density. These two contexts are context "extremes"—the texts produced were wholly oral and non-original in the retelling context and were wholly written and original in the writing one—and resulted in producing a significantly different amount of etic "facts." Being able to produce some amount of etic facts by itself, however, is not a sufficient condition for an emic perspective. That is why it was possible to have different patterns of results for the cohesive density and cohesive harmony measures; viz., with respect to the amount of etic facts, no differences were seen between the retelling and dictation contexts or between the dictation and writing contexts; whereas with respect to emic facts, significant differences were seen between these contexts. If the cohesive harmony measure is an emic
index, then it represents the extent to which the rules of storymaking are realized in the texts produced by the children in each of the three contexts. Given the differences observed among the contexts were significant and were indicative of the degree of narrative competence the children demonstrated in the respective contexts: given that they were more capable in retelling the stimulus story than they were in dictating stories; given that they were more capable of creating dictated stories than written stories; then it follows that the cohesive harmony measure can be seen as an emic one.

6. Limitations and Implications

No specific conclusions about narrative competence such as children being more capable in retelling a story than in dictating or writing one should be generalized from the findings of the present study. There are several reasons for this. First of all, although children demonstrated that their stories were the best in the retelling context, the result could have largely been due to the specific book the children were asked to retell in the study. That is, if another book consisting of many episodes with sub-themes and containing many characters had been used instead, the cohesive harmony of these texts might have been much lower, lower than the dictated stories
in which details are controlled by the children, for example. Secondly, the eleven children used as subjects in this study were middle-class children who were already reading and writing at the beginning of first grade. In her study, Pettegrew (1981) reported that levels of literacy of children entering first grade were associated with different use of cohesive devices in text formation. Therefore, the inclusion of children of a different level of literacy than those used in the present study might have also resulted in findings different from those reported in the present study. Finally, the specific time the children produced their texts— that is, at the beginning of first grade—is another important factor which may have influenced the results. If the texts had been produced at the end of first grade or in the second or third grade, for example, differences between the dictation and the writing contexts might not have been observed.

While the specific conclusions about narrative capabilities cannot be generalized, important general implications can still be drawn from the study. The findings of the present study support the importance of viewing the development of narrative competence within a synergistic, variable perspective of language learning. Research in the development of narrative competence must attempt to examine more than the form of children's
stories. In fact, when such semantic aspects as children's use of referent items to refer to characters throughout stories are inspected, it becomes even more difficult to make decisions about form. Synergy, of course, suggests that children do not learn form, then meaning, then use of language in an additive way, but that they learn these aspects of language simultaneously. Therefore, if researchers continue to concentrate on form alone, misleading conclusions about children's capabilities will result, delaying or preventing a fuller understanding of the development of narrative competence in children. The variable aspect of the language model set forth earlier suggests that the facts of language behavior are variable in different contexts. Thus, it is necessary to warn against making generalizations about competence or the capabilities of children from a single context. Certainly, the present study strongly supports such a warning since the competence displayed was indeed variable in each of the three contexts. In conclusion, extending the synergistic variable model of language learning to research on the development of narrative capabilities will provide a better appreciation of the origins of the tale in children's stories and a better understanding of the route children travel in becoming competent storymakers.
APPENDIX A

Initial and Retyped Parsed Transcripts of a Retelling Text
Initial Transcript of a Retelling - Subject 63

o.k. (child's name) tell me about that story

1 # / once there was a little girl and her mother / 2 [the lived poor they um] they were very poor / and 3 the little girl went out for berries and nuts / 4 there's no berries and nuts / [so this one] so she 5 sat down on a log / she started crying / [and then 6 the um] then an old witch came by / and he gave her 7 ((sp: old witch)) a pot / and she said "this pot is magic" / and if 8 ((sp: old witch)) you put it over a fire and you say 'pot boil boil' 9 then the pot will boil" / "and if you say 'stop 10 little pot stop' then the [um] little pot will 11 stop" / and then she ran home as fast as she could / 12 so they [um] made as much as they can to eat / and 13 then they ate it / and then they stopped eating 14 it / and she went down to her friend's at the end 15 of the [um] village / and [um sh-] her mother made 16 ((sp: mother)) [some] some porridge / and [she] she said "pot boil 17 boil" / and then she made as much as she wanted / 18 and then she forget the words 'stop boil stop' / 19 [and then] then it came running and running / 20 and then it came to the top of the [um] pot /
[and] and it began to run over the side / and it ran down the village / it was following [the mother] her mother / [and] and she came to the end of the village / and [then she] then her friends [and she] and her daughter looked out the window / and they saw that the porridge was following her mother / and then she ran out of the house / and ran back to her house / [and then] and then [um] she said [stop boil stop] [[I mean]] "stop pot stop" / and [then um] then they made some more pot / and they lived happily every after / #

* ahh anything else *

** nope 88

Retyped Parsed Transcript (Retelling) - Subject 63

1 once there was a little girl and her mother
2 they were very poor
3 and the little girl went out for berries and nuts
4 there's no berries and nuts
5 so she sat down on a log
6 she started crying
7 then an old witch came by
8 and he gave her a pot
9 ((speaker: witch)) and she said "this pot is magic"
((speaker: witch)) and "if you put it over a fire and say 'pot boil boil' then the pot will boil"

((speaker: witch)) "and if you say 'stop little pot stop' then the little pot will stop"

and then she ran home as fast as she could

so they made as much as they can to eat

and then they ate it

and then they stopped eating it

and she went down to her friend's at the end of the village

and her mother made some porridge

((speaker: mother)) and she said "pot boil boil"

and then she made as much as she wanted

and then she forgot the words 'stop boil stop'

then it came running and running

then it came to the top of the pot

and it ran down over the side

and it ran down the village

it was following her mother

and she came to the end of the village

and then her friends and her daughter looked out the window

and they saw that the porridge was following her mother

and then she ran out of the house
and ran back to her house

((speaker: girl)) and then she said "stop pot stop"

and then they made some more pot

and they lived happily ever after
APPENDIX B

Example of Cohesion Analysis and Coding of a Retelling Text
there was a little girl and her mom
and they lived in a village
they didn't have anything to eat except a little piece of bread
the little girl when they didn't have anything in their cupboard went to the woods
and she couldn't find anything
she sat down on this tree that had fell down
and no sooner had she sat down then there was this old lady who gave her a magic pot
((speaker: old lady)) and she said "take this magic pot"
((speaker: old lady)) "and when you want it to boil say 'boil little pot boil'"
((speaker: old lady)) "and when you want it to stop say 'stop little pot stop'"
so the little girl took the pot home to her mother
and she told her mother that it was a magic pot
((speaker: girl)) she said for the pot to boil "boil little pot boil"
and it boiled nice porridge
they had porridge for many many days
then once the little girl went to her friend's house at the other end of the village
and her mother got hungry
((speaker: mother)) so she said "boil little pot boil"
and it boiled and boiled
and she took a nice spoonful of it
but she forgot the magic words to make it stop
((speaker: mother)) she says "halt little pot halt"
but it was pouring out of the side until it was flooding all over the floor
she opened the door to let the porridge out
and she ran to the other side of the village
the porridge was close behind her until she got there
and the little girl went back wading in the porridge to her house
((speaker: girl)) she said "stop little pot stop"
((speaker: girl)) "stop little pot stop"
and the pot stopped
then people came out with spoons buckets pitchers and plates
and they all had lots of porridge for a long time
Retelling Text, Lexically Rendered - Subject 52

1. be (exis)little girl girl mom
2. girl mom live village
3. girl mom have anything eat little piece bread
4. little girl go woods girl mom have anything girl mom cupboard
5. girl find anything
6. girl sit-down tree fall-down
7. girl sit-down old lady be(exis) give girl magic pot
8. lady say "take magic pot"
9. girl want pot boil say 'boil-boil little pot'
10. girl want pot stop say 'stop-stop little pot'
11. little girl take pot home girl mother
12. girl tell girl mother pot be(attr) magic pot
13. girl say pot boil "boil-boil little pot"
14. pot boil nice porridge
15. girl mother have porridge many-many days
16. little girl go girl friend house end-village
17. girl mother be(attr) hungry
18. mother say "boil-boil little pot"
19. pot boil-boil
20. mother take nice spoonful porridge
21. mother forget magic words make(=cause) pot stop
22. mother say "halt-halt little pot"
23. porridge pour-out side porridge flood floor
24. mother open door let-out(=allow to flow) porridge
25. mother run side-village
26. porridge close(=be near) mother mother got (=arrive) side-village
27. little girl go-back wade porridge girl house
28. girl say "stop-stop little pot"
29. "stop-stop little pot"
30. pot stop
31. people come-out spoons-buckets-pitchers-plates
32. people have lots porridge long time
Identity and Similarity Chains for Retelling Text -
Subject 52

Identity Chains:

1. girl(25); mom(5), mother(12) ....................................... 42
2. lady(2) ............................................................... 2
3. cupboard, home, house, floor, door ................................ 5
4. village, end-village, side-village(2) ............................... 4
5. pot(12), "pot"(7), side .............................................. 20
6. people(2) ............................................................... 2

Similarity Chains:

7. be(exis)(2), live ............................................................. 3
8. have(4) ....................................................................... 4
9. little(6), "little"(7) .......................................................... 13
10. anything(3), bread, porridge(9) ........................................ 13
11. go(2), run, go-back, got(=arrive), wade, come-out 7
12. woods, tree ................................................................... 2
13. give, take(3) ............................................................... 4
14. sit-down(2), fall-down ................................................... 3
15. magic(4) ....................................................................... 4
16. want(2) ................................................................. 2
17. boil(3), boil-boil, "boil-boil"(3), stop(3), "stop-stop"(3) ........ 14
18. say(7), tell ............................................................... 8
19. be(attr)(2) ............................................................... 2
20. nice(2) ................................................................. 2
21. pour-out, flood ........................................................... 2
22. days, time ................................................................ 2
23. long, many-many .......................................................... 2
24. piece, spoonful, lots ..................................................... 3
25. spoons-buckets-pitchers-plates (see IC5 and SC 18) ........ 1
26. house (see IC3) ........................................................... 1

Total Number of Relevant Tokens ...................................... 167
Chain Interactions for Retelling Text - Subject 52

1. little-girl
  girl-mom
  be (exist)

2. girl-mom
   live
   have-anything
   bread-piece

4. little-girl
   go
   have-anything
   cupboard

6. girl
   sitdown

7. girl
   sitdown
   give
   pot
   magic

8. take
   pot
   magic

9. girl
   want
   pot
   boil
   say
   boil
   boil
   pot
   little

10. girl
    want
    pot
    stop
    say
    stop
    stop
    pot
    little

11. little-girl
    take
    pot
    girl-mother

12. girl
    tell
    girl-mother
    pot
    magic

13. girl
    say
    pot
    boil
    boil
    boil
    pot
    little

14. pot
    boil
    nice-porridge
15. girl-mother—have—porridge
   many—days
16. girl—go—house
17. mother—say—boil—pot—little
18. pot—boil—boil
19. mother—take—spoonful—porridge
   nice
20. pot—stop
21. mother—say—halt—pot—little
22. porridge—pourout
   porridge—flood
23. mother—run—side-village
24. mother—got(arrive)—side-village
25. little-girl—go-back—house
girl
26. girl—say—stop—pot—little
27. stop—pot—little
28. pot—stop
29. people—come-out
30. people—have—porridge—lots
   long—time

Total Number of Central Tokens . . . . . . . . . . . . . 138
<table>
<thead>
<tr>
<th>Six Dependent Variables for Retelling Text - Subject 52</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Cohesive Harmony Index (Central Tokens/Relevant Tokens - 138/137) = 0.8263</td>
</tr>
<tr>
<td>(2) Cohesive Density Index (Relevant Tokens/Total Tokens - 167/178) = 0.9382</td>
</tr>
<tr>
<td>(3) Total Number of Tokens = 178</td>
</tr>
<tr>
<td>(4) Number of Units = 32</td>
</tr>
<tr>
<td>(5) Mean Number of Tokens per Unit (178/32) = 5.5625</td>
</tr>
<tr>
<td>(6) Number of Restricted Exophoric Devices Used = 0</td>
</tr>
</tbody>
</table>
APPENDIX C

Example of Cohesion Analysis and Coding of a Dictation Text
once upon a time a little girl and boy went outside
and they went skating
and they saw a duck on the pond sinking into the ice
and they helped him get out
and warmed him up
the next day they went out sledding
and they saw a worm
and they took him to their house
so they had two pets in their house
the next day the mom had to go out into the town to get some food
and they saw a little bunny rabbit laying on the ground
so they picked him up
and went back home
and then it was springtime
and flowers grew
and trees grew
and their father got them horses
and they lived happily ever after
1. once-upon-a-time little girl boy go-outside
2. girl boy go-skate
3. girl boy see duck pond sink ice
4. girl boy help duck get-out
5. girl boy warm-up duck
6. girl boy go-out-sled
7. girl boy see worm
8. girl boy take worm girl boy house
9. girl boy have two pets girl boy house
10. mom have-to go-out town get(=obtain) some food
11. girl boy see little bunny-rabbit lie ground
12. girl boy pick-up bunny-rabbit
13. girl boy go-back home
14. be(ambient) springtime
15. flowers grow
16. trees grow
17. girl boy father get (=obtain) boy girl horses
18. girl boy live happy-ever-after
Identity and Similarity Chains for Dictation Text -

Subject 25

Identity Chains:

1. girl(17); boy(17) ................................. 34
2. duck(3) .......................... 3
3. worm(2) .......................... 2
4. bunny-rabbit(2) .......................... 2
5. house(2); home .......................... 3

44

Similarity Chains:

1. go-outside, go-skate, go-out-sled, go-out, go-back .......................... 5
2. see(3) .......................... 3
3. sink, get-out .......................... 2
4. little(2) .......................... 2
5. flowers, trees .......................... 2
6. grow(2) .......................... 2
7. get (=obtain) .......................... 2
8. mom, father .......................... 2
9. pets (see IC2 and 3), horses (see IC2-4) .......................... 2

22

Total Number of Relevant Tokens .................................. 66
Chain Interactions for Dictation Text - Subject 25

1. girl-boy—gooutside
2. girl-boy—goskate
3. girl-boy—see—duck—sink
4. duck—get-out
5.
6. girl-boy—gooutsled
7. girl-boy—see—worm
8. girl-boy—house
9. girl-boy—house
10. mom—get(=obtain)
11. girl-boy—see—bunnyrabbit
12.
13. girl-boy—goback
14.
15. flowers—grow
16. trees—grow
17. father—get(=obtain)
18.

Total Number of Central Tokens . . . . . . . . . . . . . . . . . 41
<table>
<thead>
<tr>
<th>Six Dependent Variables for Dictation Text - Subject 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Cohesive Harmony Index (Central Tokens/Relevant</td>
</tr>
<tr>
<td>Tokens - 41/66) = .6212</td>
</tr>
<tr>
<td>(2) Cohesive Density Index (Relevant Tokens/Total</td>
</tr>
<tr>
<td>Tokens - 66/85) = .7765</td>
</tr>
<tr>
<td>(3) Total Number of Tokens</td>
</tr>
<tr>
<td>= 85</td>
</tr>
<tr>
<td>(4) Number of Units</td>
</tr>
<tr>
<td>= 18</td>
</tr>
<tr>
<td>(5) Mean Number of Tokens per Unit (85/18)</td>
</tr>
<tr>
<td>= 4.7222</td>
</tr>
<tr>
<td>(6) Number of Restricted Exophoric Devices Used</td>
</tr>
<tr>
<td>= 0</td>
</tr>
</tbody>
</table>
APPENDIX D

Example of Cohesion Analysis and Coding of a Writing Text
1. once there was a kitten
2. he is lost
3. he could (child read: not) find his mom
4. one day he found his mom
5. he was very happy
6. his mom took him home
7. ((speaker: kitten)) he said to his dad "I love you"

Writing Text, Lexically Rendered - Subject 49

1. once be(exis) kitten
2. kitten be(attr) lost
3. kitten find kitten mom
4. one-day kitten find kitten mom
5. kitten be(attr) very happy
6. kitten mom take kitten home
7. kitten say kitten dad "kitten love dad"
Identity and Similarity Chains for Writing Text - Subject 49

Identity Chains:

1. kitten (12) ........................................... 12
2. mom (3) .................................................. 3
3. dad (2) .................................................. 2

17

Similarity Chains:

1. lose, find (2) ........................................ 3
2. be (attr) (2) ......................................... 2

5

Total Number of Relevant Tokens ........................................... 22
Chain Interactions for Writing Text - Subject 49

1.

2. kitten—be(attr)

3. kitten—find—mom—kitten

4. kitten—find—mom—kitten

5. kitten—be(attr)

6.

7.

Total Number of Central Tokens . . . . . . . . . . . . . . 12

Six Dependent Variables for Writing Text - Subject 49

(1) Cohesive Harmony Index (Central Tokens/Relevant Tokens - 12/22) = .5455

(2) Cohesive Density Index (Relevant Tokens/Total Tokens - 22/31) = .7097

(3) Total Number of Tokens = 31

(4) Number of Units = 7

(5) Mean Number of Tokens per Units (31/7) = 4.4286

(6) Number of Restricted Exophoric Devices Used = 0
LIST OF REFERENCES


Hasan, R. _Ways of saying: Ways of meaning._ In S. M. Lamb, M. A. K. Halliday and A. Makkai (Eds.), _Semiotics of culture and language._ The Press at Twin Willows, in press b.

Hasan, R. _Measuring the length of a text._ Mimeo, c.


Todorov, T. The two principles of narrative. Diacritics, Fall, 1971, 37-44.