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ABSTRACT

Described in this report is a longitudinal study that examined the transition that children make from oral to written texts in respect to their use of cohesive devices and particular story structure elements in two modes of oral and one mode of written language. The first section provides an overview of the study and discusses literacy development, while the next section discusses the selection of subjects (72 urban and suburban children in kindergarten through grade two), data collection procedures, coding preparations, cohesion coding and analyses, and story structure coding and analyses. The results of the coding analysis are discussed in the third section, which is followed by a section reviewing the results of the story structure analysis. Conventions of print are discussed in the fifth section, which is followed by a section reviewing three related studies. The report concludes with a description of a case study of one boy's struggle to write. Appendixes include (1) a sentence repetition test of standard English, (2) a modified index to status characteristics, (3) retelling procedures, (4) dictation procedures, (5) illustrative written text, (6) illustrative parsed typescript, (7) original typescript, (8) definitions and procedures for coding proppian functions, (9) supplementary MANOVA and ANOVA tables, and (10) text length and syntactic complexity results and discussion. (HOD)

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and 761513/711748
Final Report

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HOW CHILDREN LEARN TO WRITE: A LONGITUDINAL STUDY

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To Cindy, our colleague and dear friend.

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Martha L. King and Victor M. Rentel bear overall responsibility for the whole of the manuscript; however, others wrote and made special contributions to particular parts of the report.

Christine C. Pappas contributed to the writing of the procedures chapter, the analysis of the data, the writing of the cohesion results, and the compilation of the appendices.

Barbara S. Pettegrew contributed to the writing of the background and theory chapter and procedures chapter, the analysis of the data, and the writing of the cohesion results.

Jerome B. Zutell, Jr. wrote major sections of the chapter dealing with conventions of print.

John M. Quinn edited the manuscript.

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The early writing project, as this research came to be known, extended over a period of two years, and involved 40 children in nine classrooms in two schools. So many persons have been involved, in such a variety of ways, that giving proper credit to all is nearly an impossible task. Our greatest debt, is, of course, to the children who willingly, and often, enthusiastically, provided the data for the study; to their parents, who gave permission; and to their teachers, who cooperated in the data collection. We are deeply grateful to the teachers at Barrington Informal School in Upper Arlington--Nancy Blume, Marlene Harbert, Sherlyn Fernandez, Sandra Saunders, Marilyn Reed, Principal; and to those at Douglas Alternative School in Columbus--Sandie Barthelmas, Mary Bornstein, Connie Cline, Denise Harrison, Bruce Stassfurth, Mary Sykora, and Kay Noble, Principal. These persons were of invaluable assistance in every way that one might ask of professional educators.

This report is the result of the cooperation of many persons--teachers and children, parents, administrators, and secretaries and other support staff, of both the University and the public schools. We are especially grateful to the Columbus Public Schools and the Upper Arlington Public Schools for their permission to conduct the study in their districts. To our collegues at the University and in our home faculties of Early and Middle Childhood Education and Humanities Education, we wish to express our gratitude for their encouragement, keen interest, and vital contributions to the project. Without the generous resources made available by the chairmen of the two faculties--C. Ray Williams of Early and middle Childhood Education and Gil Jarvis of Humanities Education--this project could not have been completed. And, to all of those who transcribed, parsed, typed and retyped protocols, counted words, or recorded spelling errors, we owe an immense debt of gratitude.

A very special recognition is due Cynthia Cook (deceased), who served as assistant study director during the first year of research, and who made significant contributions to the overall organization of the project, as well as playing a key role in collecting data in one school. Her work remains a part of everything we do.

MLK VMR

Preface

Research has a way of growing; one study inspires, and leads to another. This seems especially true when the research is centered on children's learning and development. Originally, we set out to study how children develop in their ability to form oral and written texts. The key elements examined were story structure and the formation of cohesive ties between sentences. The subjects first studied were first/second-grade children, but a comparable population of kindergarten/first-grade children was soon added. The vast pool of writing samples led to a study of the development of concept of message, and conventions of print.

Two major investigations were undertaken to study other aspects of development: Pettegrew studied selected aspects of texture in oral narrative texts of children at different points in their transition to literacy; and Pappas investigated children's development of narrative capabilities as reflected in cohesive harmony. Other, smaller studies, were conducted along the way: children's use of conjunctions in oral and written texts, conjoining in children's dictated stories, and story structure in oral and written texts.

Another major study of cohesive harmony in children's written texts is underway, and will be followed by an investigation of point of view in narrative. A listing of the studies and reports is given below to provide a context for the present report.

Cohesive Ties in Writing and Story Structure in Three Modes of Discourse of First/Second Grade Children
Concept of Message and Conventions of Print
Case Study of T.S.: A Boy's Struggle to Write

Report No. 1

Text Formation: A Comparison of Literate and Pre-Literate First Grade Children
B. Pettegrew

Report No. 2

Cohesive Harmony and the Development of Narrative Capabilities.
C. Pappas

Report No. 3

Text Formation in Story Retelling and Dictation of Narrative Texts of Children in Kindergarten through Grade Two

Report No. 4

Cohesive Ties in Writing and Story Structure in Three Modes of Discourse of Kindergarten/First Grade Children
Case Studies of Juan and Stephanie

Report No. 5

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Chapter 1

Introduction: Background and Theory

Learning to write in the context of formal schooling represents for most children, not a fresh beginning, but a continuation of a process which is well under way and has its origins in children's acquisition of language. How children's oral language competence merges and interacts with their familiarity and understanding of written language is, at best, dimly understood. Aside from studies of Graves (1973, 1978, 1979), most research on student writing in school has been conducted with older pupils (Hunt, 1965; O'Donnell, Griffin and Norris, 1967; Britton, et al., 1975; Loban, 1976). Yet, during the formative early years before schooling begins, children acquire an enormous reservoir of knowledge and demonstrate their ability to abstract requisite information about language from their immediate linguistic environment. In fact, many children have made a clearly impressive beginning to understanding the writing system by the time they enter school.

The major purpose of this study was to investigate the initial period in schooling when children extend their communicative competence to include the written code. The study sought to describe and explain the changes in children's texts, beginning with their early attempts to create messages using signs and symbols, through the points at which various features of written discourse make their appearance in children's writing.

The particular goals of this longitudinal study were to describe and compare the structure of children's texts and the cohesive ties which relate various layers of meaning in these texts during the initial period of schooling in which formal writing instruction commences. In addition, the study sought to characterize the ways in which children interpreted and came to grips with formal conventions of writing such as punctuation, capitalization, spacing, formal beginnings and endings, titles, and letter formation. Finally, two case studies were conducted in an attempt to portray in detail both school context and what transpired as children moved through successive stages of learning to write.

Literacy Development

Studies in various aspects of language development--reading, speech, and spelling--clearly point out the significance of the early years just before and after the start of formal schooling for the development of literacy. A rich body of research (Bloom, 1970; Cazden, 1972; Brown, 1973; Slobin, 1973; Bruner, 1974; Halliday, 1975) describes the contributions of curiosity and intellectual drive to language learning. Studies of preschool children's efforts to read are filled with illustrations and evidence of children searching for information about the properties of written language and evidence of their desire for feedback and explanation of the written code (Durkin, 1966; McKenzie, 1974; Hollingsworth, 1976). Similarly, Read's investigations (1971,

1975) of young children's invented spellings portray children creating their own spellings based on identifiable abstract principles which reflect an underlying phonological and logical organization. Both Hildreth (1936) and Wheeler (1971) reported that children progress through rather well defined stages. They learn rudimentary aspects of writing by moving from scribbling to text production. They do this without formal instruction and, apparently, through spontaneous self-correction and self-motivation.

More complex elements of learning to write appear to incorporate these same spontaneous ingredients. Clay (1975) studied five-year-old beginning writers in New Zealand, analyzing children's scripts for rudiments of writing, such as letter formation, spacing, directionality, message potential, and arrangement. She concluded that children construct texts in order to represent meanings and that their texts reflect a variety of important underlying principles and concepts about writing.

All of these studies, however, have investigated precursors to writing but not the fundamental textual features of written discourse or the factors that enable children to create and sustain a well formed discourse.

The Link Between Oral and Written Discourse

Both Moffett (1968) and Britton (1970) have argued that the first tentative step children take toward writing is reflected in their ability to take over a conversation and maintain a topic, independent of the prompting and feedback ordinarily found in dialogue. Britton argues that young children achieve their communicative intentions through speech, but that writing at this stage in development serves another end. Its purpose is to create a tangible artifact, a drawing, or a display. Langer's (1953) notion of presentational symbolism, as distinguished from representational symbolism, would best characterize children's aims. They frequently tell stories while producing these displays (Britton, 1970). This form of solo discourse between thought and action embodies both, elements of dialogue which are less collaborative, and elements of narrative which are maintained by particular actions. The cues children utilize as they develop a text are found not in what an interlocutor says, but in the previous text and in the ongoing constructive actions of producing an artifact. As Vygotsky (1962) noted, language without an interlocutor must be consciously directed and sustained to replace the dynamic guiding quality afforded by a conversational partner. Sustained speech may be one of the means children employ to sort out distinctions between speech and writing.

There are, of course, other distinctions between speech and writing that children may come to appreciate through sustained speech. Gestures, prosodic information, and attributes of the discourse setting, all are carriers of meaning in conversation. They afford redundant sources of meaning for the participants in a conversation--sources which are not

explicitly realized in the spoken text. What children learning to write must grasp is how to take what is implicitly obvious in the context and render it explicit in text. Cook-Gumperz (1977) characterized this trait as the ability to appreciate language as a structure separate from action. Children must learn to place increased reliance on semantic and syntactic "foregrounding" as the dominant carrier of meaning. In short, they must learn to lexicalize and make explicit these alternative sources of meaning (Cook-Gumperz, 1977; Doughty, Pearce and Thornton, 1972; Ure, 1971).

Texts as Units of Meaning

The primary distinction between oral and written discourse, however, must be made on the basis of function (Halliday, 1973). Halliday argues that spoken language essentially has an interpersonal function while written language serves an ideational function. This latter function manifests the capacity to express through language the content of experiences, as well as the fundamental relationships that inhere among and within experiences, not only of the external world, but of the mind as well. Olson (1977) makes a similar distinction. He, like Halliday, distinguishes text from utterance on the basis of function. Utterances serve primarily to maintain social relations, while texts serve the truth functions of language, specifying the logical relations between sentences. One consequence of this specialization of function is that texts are highly conventionalized and premised on logical relations. Statements in texts are highly specialized. They explain and describe, rather than regulate and maintain, social or authority relations. They are statements coded for reflection rather than for action. Halliday has defined this specialized character of texts as the textual function of language.

Text refers to an internally consistent body of writing or speech which is interpretable without reference to anything outside the context of the discourse itself (Halliday and Hasan, 1976). Texts are semantic units encoded in sentences. They have meaning within themselves and in relation to the context of which they are a part. Thus, texts are embedded within, and shaped by, the social and linguistic contexts from which they arise. All texts are produced in an environment that consists of the larger culture as well as what is happening within a particular social situation in which the language user is participating. But not all elements in an environment are equally important either personally or linguistically. And any text produced is contingent upon a context of situation (Halliday, 1973)--a setting of relevant actions and events, relationships among participants in a discourse, and the medium of communication employed. Halliday referred to these contingencies, respectively, as field, tenor, and mode. All combine to produce text of a particular sort.

The semantic relationships that are defined by a text comprise a kind of unity. It is this unity that distinguishes a text from random sentences. The unity focuses upon the same topic. Halliday and Hasan

(1976) call this unity of meaning, texture. And they argue that texture is achieved through cohesion, which in turn, consists of the semantic relations which are established when one element of a discourse is interpretable only through some other element in the same text. A single instance of relationship between two such elements is known as a tie. Ties across sentence boundaries account for patterns of texture beyond that of structural relations inherent in grammatical units such as clauses. Halliday and Hasan (1976) identify five kinds of cohesive ties. They are reference, substitution, ellipsis, conjunction and lexis. The examples that follow are drawn from actual texts produced by the children who participated in this study, except where noted.

The use of reference in text includes those types of items which refer to other items on which they depend for their interpretation. Reference is a semantic relation--"a relation between meanings of particular instances rather than between words or other items of linguistic form" (Halliday and Hasan, 1976, p. 304). Items involved in reference are of three general types: personals, demonstratives (including the definite article, "the"), and comparatives. This subclassification is based on the type of reference involved.

Personals are the personal pronouns and their possessive forms. Examples include: she, her, hers, he, him, his, it, its, they.

Demonstratives, which represent a form of "verbal pointing," are the following pronouns: this, these, that, those, here, there, now, then. The definite article "the" resembles the demonstratives and is included in this category in that "the"+noun indicates that the item in question is specific and identifiable.

Comparatives are those items, typically adjectives or adverbs, which "refer indirectly to some referent according to similarity, either in general or in respect of a particular property; including, as a special case of similarity, identity" (Hasan, 1968, p. 31). Examples from a large number of candidate comparative reference items are: same, similar, such, more, less, identical, equal, other.

The following samples of text give examples of the three kinds of reference.

Personal:

[1.1] Once there was a mother and a little kid.
They was hungry.
("They" is interpreted by reference, as "a mother and a little kid.")

Demonstrative:

[1.2] And all the porridge was all over the street.
Then everyone was in the porridge and eating

bowls, spoons, buckets of it. And they ate it almost all up. But there's still some there.
("There" is interpreted by reference, as "the street.")

A second example of demonstrative reference illustrates reference to extended text rather than to a specific noun:

[1.3] And she tried to remember and remember and remember. And she said, "Halt little pot, halt!" And that didn't work.
("That" refers to the words, "Halt little pot, halt!")

Comparative:

[1.4] She didn't remember the magic words. So she said, "Little pot, please little pot, please will you stop?" It didn't stop. So she tried other words.
("Other" is interpreted as different from the words used in the first instance, "Little pot, please...?")

All of the examples cited thus far represent the paradigm case of cohesion: the presupposed element of the tie is located in a sentence preceding the one in which the presupposing member of the tie occurs. The tie is anaphoric (backward pointing) and endophoric (confined to the text). There are two kinds of departures from this model case that can occur. In the first, a presupposed item may point forward to subsequent text, as in the following fabricated example:

[1.5] They ran through the forest. John and Sally were afraid of forest creatures.
("They" is interpreted by reference to the subsequent items, "John and Sally.")

This direction of reference is cataphoric, that is, forward pointing while still being confined to the text.

The second kind of departure from the paradigm case occurs when the presupposed item is not to be found in the text and identification is achieved, if at all, only by recourse to some aspect of the environment of the text. This instance constitutes an exophoric tie--or, at least, an attempt at a tie in the case of failure to identify the intended referent. In instances when the presupposed element is not to be found in the text, some aspect of the larger environment ("environment" interpreted broadly) replaces the text as the relevant environment in which the relation of reference is established.

In all cases of exophora, the text producer's intended meanings are mediated via the extralinguistic situation. Hasan (in press) points out that this fact implies that the "natural environment" for exophora is face-to-face interaction where visual contact is present and where the channel of discourse is speech. She notes that, in certain contexts, exophoric presupposition is communicatively appropriate and sensible. For example, when a host passes a plate of cookies to his guest and says, "Have some more," and the guest replies, "Yes, thanks. They're delicious!" there is no need to explicitly "name" the cookies. The identity signalled by "more" and "they" is perfectly clear due to the cookies physical presence in the ongoing situation.

Another situation in which exophoric presupposition is appropriate and sensible is when the participants in a discourse share some knowledge or experience that eliminates the possibility of ambiguity or misunderstanding arising with the use of an exophoric reference device. Thus, when a wife asks her husband, who had earlier complained of losing his house key, "Did you find the key, yet?" he will not be puzzled as to the identity of the key in question. The same cannot be said of a casual listener who happens to overhear the conversation. Shared experience of the type common to families and other in-groups also appears to be a natural environment for exophoric presupposition. Greater explicitness would be redundant and quite possibly result in a linguistically bizarre utterance.

Hasan's (in press) expanded discussion of exophora specifies the ways in which a presupposed exophoric item may reside in aspects of the larger environmental context. Identification of the presupposed exophoric may be found: in the actual physical situation in which the text is produced, in some culturally shared knowledge of text producer and recipient (including shared knowledge of the language), or in some knowledge available to the text producer but of limited or restricted availability to the population of potential recipients.

The following is an example of reference to some aspect of the physical situation:

> [1.6] Oceans have sharks. Oceans have whales. Crabs are on the beach. I went to the beach a few weeks ago, and I played.
> (The speaker,"I," is identifiable in the actual physical situation in which the text was produced.)

It should be noted that, in quoted speech, such as the next example, the "I" becomes endophoric:

> [1.7] The little girl sat down on a log and began to cry. "I don't have any food," she said.
> ("I" is interpreted by reference to the little girl.)

In general, first and second person pronouns, referring to speech roles in the situation, are exophoric except as noted relative to example [1.7]. The typical expectation for third person pronouns is that they function endophorically.

An example of identification made on the basis of culturally shared knowledge is contained in the following passage, where a presupposition exists as to the specificity and identity of the referent:

[1.8] The little goose saw a cloud in the shape of a fox. She thought the fox was going to eat the moon.
(The moon is identifiable by reference to the only moon that exists, at least for Earthlings--including sentient geese. It is a unique member of a class and is referred to as homophoric reference.)

An example of exophoric reference, in which identification of the ultimate referent(s) is not possible on the basis of the fabricated text provided, is presented below:

[1.9] She took the pot and ran home. And they lived happily ever after.
(Who is "she?" What pot? And is there another character involved in this scenario? Unless the text's author can point to the person(s) and objects referred to--literally point as in the case of an available picture, or figuratively point, as in the case of a mutually shared experience of the events recounted--identification is not possible.)

Hasan (in press) has characterized reference items as implicit linguistic devices--devices which involve semantic presupposition. That is, implicit devices do not contain within themselves their precise meanings. Such intended meanings must be retrieved from some extrinsic source. The extrinsic source for endophoric reference is within the text. However the extrinsic source for exophoric reference is outside the text. Hasan suggests a cline of implicitness based on the availability of the speaker's intended meanings. Endophoric presupposition (such as that involved in cataphoric and anaphoric reference) makes meanings available to anyone who has access to the discourse. Exophoric presupposition, however, makes meaning less available in terms of actual language realization; interpretation of meaning is dependent on aspects of the situation and, therefore, is potentially more implicit.

Hasan further offers a grading of implicitness within exophora, again, depending on the criterion of meaning lability. Thus, if identification is mediated by culturally shared knowledge (including

knowledge of the formal requirements of the language, as in example [1.8]) meanings are more available than if they depended on one's being present on the actual physical scene in which the text was produced (as in example [1.6] and the cookies example). The most implicit of all is exophoric presupposition that depends on mutually shared knowledge of a limited or restricted kind. Thus, the presupposition involved in example [1.9] and in the lost key example, is considered by Hasan to be the most implicit of all. When reference items are involved in these most implicit situations they are classed as restricted exophora, because their intended meanings are limited or restricted to the smallest circle of potentially successful interpreters.

Substitution and ellipsis are cohesive relations distinct from reference, in that they involve relatedness of form and relations in wording, rather than relations in meaning. Like reference, they are considered implicit devices because the precise meanings they signal are available through what they semantically presuppose. Substitution involves the replacement of an item with a kind of linguistic "marker" or "counter" which stands for the removed item. Ellipsis is characterized as "substitution by zero;" the presupposing item is omitted altogether from the text although it is "understood."

Halliday and Hasan (1976) describe three subcategories of substitution and ellipsis: nominal, verbal, and clausal. A substitute item can stand for a noun phrase, a verb phrase, or for an entire clause. Similarly, in ellipsis, the word or words omitted may be a noun phrase, a verb phrase, or a clause.

The list of items that can occur as substitutes is very limited:

Nominal: one, ones, same

Verbal: do

Clausal: so, not

The following is an example of nominal substitution:

[1.10] Then she tried the pot. And she couldn't remember the words. She remembered the first words. But she couldn't remember the last ones.
("Ones" substitutes for "words.")

The following example illustrates verbal substitution:

[1.11] The little girl said, "Stop boiling pot, stop boiling!" And it did.
("Did" substitutes for the verbal element, "stop(ed) boiling.")

The following examples illustrate nominal and clausal ellipses, respectively:

[1.12] So every morning the little girl would go out and find nuts and berries. But one morning there wasn't any.
("Any" nuts and berries is understood.)

[1.13] And the lady with the magic pot said, "You want this pot, little girl?" And the little girl said, "Yes."
(["Yes," (I) want this pot] is understood.)

The source of presupposition in ellipsis and substitution is usually the textual environment and, therefore, endophoric. Exophoric ellipsis and substitution are infrequent, but can occur. Thus, the implicitness involved in the use of these two categories of linguistic devices is, like that for reference, variable. The following two examples of exophoric presupposition involving substitution and ellipsis produced by children in this study came--significantly--during the informal conversational exchanges between child and investigator prior to settling down to dictate and scribe a story. Setting up an audiotape recorder was part of the routine.

[1.14] Child to investigator:
You got a big one, today.
("One" exophorically presupposes the physically present tape recorder. There was no difficulty in interpreting the substitute item in this context.)

[1.15] Child to investigator:
It's got lots.
("Lots" of push buttons was understood. The child was touching the buttons on the tape recorder at the time.)

Conjunction differs from the cohesive relations discussed thus far, in that it is not phoric in the sense of pointing or reaching out to another item. Rather than a "search instruction," conjunctive elements embody specification of the way in which what is to follow is semantically connected to what has gone before. Halliday and Hasan describe four subcategories of conjunction: additive, adversative, causal, and temporal. The categories along with some of the words which typically signal the different kinds of relations follow:

Additive: and, nor, or, thus, furthermore

Adversative: but, yet, however, even so, actually, anyhow

Causal:	so, then, therefore, consequently, for, because, otherwise, in that case
Temporal:	then, next, just then, at once, soon, next day, meanwhile.

The following portion of text has examples of additive, causal, adversative, and temporal cohesion, respectively:

[1.16] Once upon a time there is a little girl and a mother. And they didn't have any food. So every morning the little girl would go out and find nuts and berries. But one morning there wasn't any. Then the little girl heard a creaked voice...

Lexical cohesion is characterized by Halliday and Hasan as the cohesive effect achieved by selection of vocabulary. They identify two broad types of lexical cohesion. The first, reiteration, involves the repetition of a lexical item. The second, collocation, involves the use of lexical items that "stand to each other in some recognizable lexicosemantic (word meaning) relation" (Halliday and Hasan, 1976, p. 285).

Reiteration can involve the repetition of a word in the form of its first occurrence, as in the following constructed example:

[1.17] 1) My dog is loud and messy.
2) That dog must be trained!

Reiteration can also involve repetition by using a synonym, hyponym, superordinate, or general term. Thus, "dog" in sentence (2) could be replaced by: canine or even bow-wow (synonyms); beast or animal (superordinates); or thing (general term). Repetition, in its various forms, frequently involves identity of reference, especially when accompanied by reference items as "the" and "that." However, the repetition of lexical items which do not depend on the identity of reference, as in the next constructed example, are still seen as contributing to the internal cohesion of a text.

[1.18] My cat is so sweet and loveable.
Your cat has redeeming qualities, too.
Cats in general make better pets than dogs,
don't you think?

The following example from a child's text illustrates how synonyms can share a common referent while the repetition of one of the items does not involve identity of reference.

[1.19] Once upon a time there was a little girl
and her mother who lived in a cottage.

And so the little girl took the pot and ran back to her house. (The synonym here is "house," which has an identity of reference with "cottage.")

One day the little girl was out at her friend's house... (Here is simple repetition of "house," which demonstrates no identity of reference with the earlier occurrence of "house.")

Collocation is a blanket term for the cohesive force that results from the co-occurrence in a text of words that display word-meaning relationships. Word meaning relationships are displayed by synonyms and superordinate terms, of course; but they also are displayed by pairs of opposites, complementaries, or words from an ordered series, such as days of the week. Cohesive force also is exerted through meaning relationships between pairs of words that have a part-whole relationship (meronomy) such as door, window, ceiling, and floor, which all are elements of a house. Cohesive force also exists among words which are members of a more general class, such as bread, nuts, berries, and porridge, which all are co-hyponyms of food.

There is the possibility of, collocational, that is, cohesion between any pair of items that tend to appear in similar contexts, or that tend to share the same lexical environment. For example, the occurrence of lexical items, such as: witch, magic, black cape, magic pot, magic words, magic spells. These items appear across sentences in a text and tend to contribute to text unity. The principle behind, both reiteration and collocation, according to Halliday and Hasan, is "continuity of lexical meaning" (1976, p. 320).

The descriptive framework for analyzing samples of language offered by Halliday and Hasan's categorization of the linguistic devices for integrating language with itself and with the environments in which it occurs, appears to have potential for describing the language children use as they make the transition to literacy. The categories suggested by Halliday and Hasan ought to be sensitive to differences in language use along an implicit/explicit dimension. If literacy learning entails learning uses of language characterized by greater explicitness, then there ought to be textual evidence of semantic options relative to text formation and which contribute to more explicit, disembedded language. Of particular interest in an analysis of patterns of texture among children at different points in the transition to literacy, are differences in reliance on exophora in forming texts, as well as in the relative use of lexical cohesion, the fully explicit text-forming device.

As children learn to compose both oral and written texts, one of the tasks they must accomplish is to create texture, that is, a semantic unity among the strands of meaning they are attempting to weave into a coherent whole. Because the overarching functions of writing and speech differ, the ways in which children employ cohesive ties, the particular ones they use, and the kinds of relationships they attempt to establish

when composing a text, can be expected to be different, depending upon whether they are composing in a speech or writing mode. Similarly, genre, context, and developmental level should entail variations in text cohesion. In addition, the ability to sustain a topic may also be linked to the kinds of cohesive resources children bring to the composing task. In short, by studying cohesive ties in the texts children produce as they mature, important patterns and text-forming attributes of the development of writing ability may be identified.

The Role of Stories in Beginning Writing Development

Stories also have a significant role to play in beginning writing development. Children frequently tell stories, both old and new, as they create their first written messages. These stories constitute a familiar rhetorical structure around which children organize the flow of discourse into groupings large enough to represent a coherent unit of pertinent meaning, but small enough to be constituted as a basic unit of memory for particular instances and events. At school age, children have learned the underlying structure of stories (Mandler and Johnson, 1977; Stein and Glenn, 1979). These structures appear to be nearly fully represented in memory, for, when asked to recall stories which have been randomly organized, children produce a stereotypic or canonically organized version of the tale (Mandler and Johnson, 1977; Stein and Glenn, 1979). Further, there is some evidence that four- and five-year-old children's descriptions of common personal event sequences such as eating lunch at McDonald's (Nelson, 1978), rely heavily on schematic organization, suggesting a gradual acquisition of a story schema beginning with script-like chronicles which continue to grow in structural complexity up to age ten and beyond (Botvin and Sutton-Smith, 1977) culminating in well-formed, episodically organized structures. If, indeed, memory for events and instances is so organized, and the evidence above strongly supports such a conclusion, then story schemata may constitute one of the fundamental cognitive bases for the rhetorical scaffolds employed by beginning writers.

The most common criterion employed in these studies of memory is a recall task in which subjects produce a written or oral account of what they have heard or read. All are based on the assumption that subjects tell or retell a story on the basis of an internalized structure or schema that has been acquired and governs production of the account. But the extent to which such a schema guides production is not really known, however likely or appealing such a notion might be.

If, indeed, such schemata guide production, then during the period when children are first exposed to formal writing instruction, to what extent do fairy tales and folk tales figure in the original stories they tell, write or dictate? Rubin and Gardner (1977) argue that children acquire a general frame (schema) for fiction starting at about three years of age which they then differentiate into specific story genres. By four years of age, children appear to have partially represented the "frame" for fairy tales (Rubin and Gardner, 1977). By six, stock

characters such as witches and fairies appear in their written and dictated stories (Applebee, 1978). Oral narratives produced by children demonstrate that action elements very much akin to Propp's functions--plot units--do, indeed, characterize the organization and structure of children's fantasy narratives (Botvin, 1977; Botvin and Sutton-Smith, 1977). Fairy tales have a highly conventionalized plot structure (Propp, 1968). To the extent that children have such structures represented in memory, there is a strong likelihood that they function as an abstract set of elements which permit a range of options for selecting and organizing events in a temporal sequence, revealing and emphasizing relations between and among characters and events (Leondar, 1977). Winograd (1977) has argued that there are patterns of discourse schemata which provide a guide for integrating language into texts--one of which is a narrative schema which represents a standard pattern of discourse learned by the language user. Finally, Halliday (1973) maintains that, in learning language, children develop conceptions of what language is and how it works, and that such learning involves the development of "relevant models" of language. Thus, these various perspectives converge on a notion that conventionalized models of text figure heavily in the design of children's narrartives. It is reasonable, therefore, to expect that fairy tales and folk tales provide a rhetorical framework for beginning writers.

Botvin and Sutton-Smith (1977) reported that many, but by no means the majority of their subjects, told fantasy narratives resembling the fairy tales analyzed by Propp (1968). Using a modification of Propp's morphological functions, Botvin and Sutton-Smith observed that the complexity of component action sequences in children's narratives increased in a direct relationship with age. Starting with nuclear dyads, children progressively expanded and elaborated these basic structures into fully-embedded complex arrangements of plot units. It is not clear, however, what role, if any, familiar folk and fairy tales played in providing these children with relevant models of fantasy texts, and to what extent such models guided their early productions. The most common plot units that occurred in the narratives analyzed by Botvin and Sutton-Smith involved either a lack and its liquidation or a villainy and its nullification. These nuclear plot units are identical to those posited by Propp--lack and lack liquidated; and villainy coupled with villainy nullified. In Propp's morphology, two additional pairings, struggle with victory, and difficult task with solution, augmented the obligatory functions of lack and villainy. This coincidence between children's narratives and the formal attributes of fairy tales, as set forth by Propp, suggests that, at some point in learning to compose, many, if not all children, employ a narrative schema quite similar to tales they have heard and read.

Why some children and not others told tales resembling traditional fairy tales is not clear, for only sex and age were considered as variables in the Botvin and Sutton-Smith study. Relatively little can be said about factors that influence the development of narrative capabilities in children, given the paucity of the literature on

beginning narrative development. It is reasonable to presume that children who have had limited opportunities and infrequent exposure to traditional tales will differ in the use of these functions in their narrative productions from children who have been steeped in such stories. Factors such as social class and linguistic code (Hasan, 1973) have been related to, and implicated in, other aspects of language development. Although Botvin and Sutton-Smith (1977) found no significant differences in length or complexity based upon sex, an earlier study (Sutton-Smith, Abrams, Botvin, Caring, Gildesgame and Stevens, 1975) did identify differences in structural complexity favoring girls.

The objective of this aspect of the study was to characterize the constructive composing capabilities of children on the basis of Propp's functions by determining: (a) the relative distribution of these functions in the fantasy narratives of children from different dialect/socio-economic backgrounds, and (b) the distribution of these functions by sex.

One further comparison was made between dictation and retelling in order to contrast an original production with a reproduction in a familiar face-to-face story telling context. The assumption was that, by providing children with one task relatively free of the creative dimensions of composing, while at the same time, controlling the number of functions available to them, a comparison with an original production would yield a baseline and an estimate of the extent to which such functions influence production at various points in development. Story retellings could be expected to vary, in part, as a function of recall and, in part, as a function of development. Dictations, on the other hand, were expected to vary only as a function of development. The further assumption was that differences in number of functions and number of types of functions would be influenced by socio-economic background--the point being that lower class children would have had more limited opportunities and less frequent exposure to fairy tales. These children, as compared with their middle class counterparts, were expected to produce relatively fewer functions in both task contexts, but then, to incorporate functions in their narratives with increasing frequency, owing to greater exposure to fairy tales through schooling. Fairy tales, of course, constitute only one genre of stories that children encounter in the literature curriculum. Our expectation, however, was based upon both, the trends reported in the literature reviewed above, and the argument that, in telling or retelling a story, responses are biased toward a typical or cannonical form (Bartlett, 1932; Mandler and Johnson, 1977; Stein and Glenn, 1979). Favat (1977), who compared various popular tales, ranging from Perrault to the Grimm Brothers and Anderson, observed that these tales have an extraordinarily predictable structure and bear a striking similarity to their Russian counterparts analyzed by Propp. On this evidence, it was assumed that children's fantasy narratives would skew toward a cannonical form--the fairy tale.

The Role of Context

Texts, spoken or written, are embedded in and shaped by the contexts from which they arise. It is through language that individuals represent reality to themselves and express their personal meanings to others. Language is learned and functions in situational contexts which convey meaning to the participants. The social situation--the activity, purpose, participants, and mode of discourse as selected, acted upon, and interpreted by the language user--determines the character of a text, including the form, theme, and cohesive patterns employed.

Learning to talk occurs largely in contexts involving the following: face-to-face interaction, shared perceptual environment, intimacy and familiarity. In addition, there is language which interacts with the ongoing action, frequently to the point of being ancillary to such action. Indeed, it may well be that shared attention and joint action are necessary conditions for learning to talk (Bruner, 1975; McNamara, 1972). Nevertheless, learning to write occurs in contexts unsupported by a matrix of shared intimacy, familiarity, face-to-face interaction, and salience to ongoing events. Language associated with literacy is disembedded from a context of events (Donaldson, 1978; Francis, 1975), and is directed toward an abstract audience well beyond the range of an immediate perceptual environment. Cook-Gumperz (1977) and Halliday (1978) have observed that adult language can be distinguished from that of children by its very freedom from situational constraints and capacity for indirect communication. The ability to emancipate language from situational constraints is dependent on learning the properties of texts associated with particular contexts (Hasan, 1973). The text itself is the relevant environment for establishing all meaning relations. In writing, unlike speech where attention may be directed always to intention and meaning, attention must be shifted, not only away from situational constraints, but away from intention as well. In speaking and listening, as Cazden (1974) noted, attention is focused upon meaning or intention. But with written language, the focus of attention must be shifted to means and to the form of language. This realignment is accomplished in large part within the formal context of schooling, where it may be assumed that, though perhaps unconscious, textual functions are given dominant accent (Olson, 1977).

Learning the language of literacy, that is, becoming a writer, requires children to learn how graphic language is produced, structured, and used in increasingly disembedded contexts. So children are expected to demonstrate gradual, but increasing awareness, of the specific consistent relationships that exist between messages expressed by written texts, and the combinations of graphic and textual information used to represent the various parts of those messages. Their focus on means, rather than the ends of communication, should result in substantial differences in coherence between dictation and writing. This problem is being studied in a related dissertation which, when completed, will be appended to a later report. Examined here, will be other aspects of children's concepts of message, as well as related concepts of spacing and directionality--their focus upon means.

One set of categories was developed to describe children's developing control over spatial arrangements on the page--between words, within words, and between sentences. Another set, defining concepts of message, rated the extent to which children demonstrated increasing awareness of the communicative functions of graphic symbols--the concept of sign. This scale incorporated the following categories: (a) picture carries a message, (b) letter strings represent speech, (c) copied messages, (d) invented patterns, and (e) readable messages. A third nominal scale rated the left-to-right directionality of the texts produced.

Overview of the Study

The three text production tasks which provided the data for this study represent school uses of language and involve constraints typically associated with the textual function of language. Although the narrative tasks in the study were similar, it was assumed that they all called for disembedded language. First-grade children during the middle of the school year were asked to:) retell a story (that had been read to them) to an adult who, ostensibly, did not know the story, (b) dictate to an adult scribe a story of their own composition, and (c) write an original story. Children were informed that other children and teachers--a wider audience--would be listening to the tape-recorded stories and reading transcribed versions of their dictated and written texts. The transcriptions provided the protocols that were analyzed for cohesion, exophoric presupposition, Proppian functions, genre, concept of message, directionality, and spacing. This procedure was repeated three times over a 16-month interval.

Each narrative task imposed a slightly different set of requirements on text formation. In the first task, content was made available to the children to be restructured into text; in the second, children structured both content and text; and in the third, children structured both content and text, in writing, and without the support of an interlocutor. The latter two tasks also varied in the extent to which graphic cueing was available to the children. These dimensions of task differences were observed for their effects on the various aspects of text formation set forth above.

The urban school subjects were 12 lower class, Black vernacular-dialect, speakers, and 12 middle class, midland-dialect speakers. We followed these subjects through the first and, later, the second grade. Also part of the study, were 12 middle class, midland-dialect speakers of identical age and grade, in a suburban school. Data were entered into a variety of multivariate and univariate statistical analyses with an equal number of boys and girls represented in each design. Dialect/socio-economic class, school, sex, observations, and narrative task, all were factors incorporated into these designs. Dependent variables were indexed by the number and types of: cohesive ties, Proppian functions, types of functions, moves, and exophoric reference. The study posed questions that, typically are investigated using logitudinal comparisons.

Chapter 2

Procedures of the Study

The purpose of this study was to describe the transition children make from oral to written texts, in respect to their use of cohesive devices in two modes of oral, and one mode of written, language, and their inclusion of particular story structure elements in the same three modes. The approach chosen to realize the goals of the investigation was a longitudinal study of two groups of subjects:

36 children, grade 1 through 2

36 children, kindergarten through grade one

The two populations permitted both, cross-sectional comparisons between groups as well as longitudinal comparisons over a period of 16 months. This report, however, will describe only the grade one through grade two population, as required in NIE Grant 79-0039. This population was stratified by sex, school, dialect and socio-economic class. They were observed at three-month intervals, across three modes of discourse: writing, dictation, and story retelling. These three contexts were expected to influence the production of texts differentially over the five observations, yeilding comparisons in the number and kinds of cohesive ties employed in each mode, as well as comparisons of the structural characteristics of texts produced in each mode.

Selection of Subjects

To study writing, a first essential was to select schools and classrooms in which the curriculum encouraged writing from children during the first two years of school. A second necessity was to locate schools where research associates could easily move in and out of classrooms to collect data and/or work with individuals or groups of children. A third requirement was to identify schools which reflected the characteristics of urban and suburban schools in America including, particularly, the language and socio-economic differences which prevail in these schools--because both, language and socio-economic factors have been implicated as important factors in school achievement.

The urban school selected as a site for this study contained a population of Black children from the neighborhood and a sizeable population of white middle class children transported to the school by bus. This fortuitous situation allowed us to observe children whose social backgrounds differed substantially, and who had in common a new kind of educational environment. Choosing a suburban school allowed us to compare the middle class children in the urban school with a like population in a different setting. A more detailed description of the schools, hereafter referred to as Urban and Suburban, follows.

Urban School

The Urban school, designated as an alternative school, is located in the central area of a large mid-western city, and it provides schooling for children pre-kindergarten to grade six. It is an open-space school with multigrade groupings in each work area. The school avoids grade level labels and, thus, each large classroom space is referred to as the Red Area, the Blue Area, or the Yellow Area.

The first year our first-grade subjects were located in the Red and Blue areas and distributed across five teachers. The Red Area housed kindergarten and grade one pupils, and occupied two separate but connected classrooms. The Blue Area was a vast wall-less carpeted space that was open to the library, located a half-flight above. There were three teachers for the 90 children, two aides, and two special reading teachers.

The teachers planned jointly and often brought the children together for large-group activities. Most of the work, however, was individualized or accomplished through small-group instruction. A very strong part of the program was the opportunity children had to talk with peers and with adults. The children had the benefit of special teachers in physical education, art, music and drama, as well as the help of students from local colleges, who were at various stages of teacher preparation.

Because of its location in the downtown area, Urban used the nearby community resources (e.g., art gallery, Center for Science and Industry, and businesses) as an extension of the classroom. Children in the Blue Area frequently took walking trips to places of interest.

Children from any elementary school in the city may make application to attend Urban School. While children in the neighborhood are given priority, there is an attempt to make the school population reflect the school system, as a whole, in terms of racial background, achievement, and socio-economic status.

During the first year of the study, the 24 subjects in Urban were distributed across five class teachers. The following year they were located with six different teachers, and in three work areas:

Teacher:	CC	MB	MS	DH	SB	BS
	6	3	4	7	2	6

This distribution, of course, made observations and work with children extremely time consuming and data collection very complex. While teachers were similar in their concern for children and their learning, they differed greatly in teaching style, approaches to literacy, and interest in children's writing. They were not expected to follow a set course of study in reading and writing, but rather, were in the process of developing one for their school. While this gave the teachers and children a great deal of freedom, it meant that the curriculum was ever chinging and not very predictable. Emphasis in

literacy instruction was on skills--in word recognition, handwriting, and spelling. A wide range of textbooks, audiotapes, and duplicated materials were used in teaching reading--usually at the discretion of each teacher. For instance, one teacher used experience stories written on charts, as a means of teaching reading.

Over the 15 months of the Project, change in emphasis and materials did occur. More attention was given to the content of children's writing, to exposing children to clusters of books and stories of a similar genre, and to reading aloud to children and telling stories.

Suburban School

The Suburban School was located in the oldest part of the most affluent suburb in the metropolitan area. It too was an alternative school for parents in that city who wanted their children to be educated in an environment that was less formal and prescriptive than that existing in most schools in the district. The school, which served a population of kindergarten through grade six, was housed in three separate buildings or "pods," each consisting of four classrooms. The school was located on the same grounds as the oldest elementary school in the district. Some facilities (library, playground, gymnasium) and resources (special teachers and health services) were shared, but the administration and curriculum were separate.

For almost a decade a core of teachers and the principal of the Suburban School had been studying and implementing informal or progressive approaches to educating children. The classrooms were arranged with work areas, including resource centers with materials for art, mathematics, and science; book and quiet reading areas; and open spaces where the class could meet as a group. Most instruction was individualized or conducted in small groups. The children were free to move about the classroom and to work with one or two friends; thus, peer teaching/learning became an important element in the instructional process. Every effort was made to integrate the curriculum which was organized around focal interests or longer units of study. The first grade, for example, typically studied foods and visited a super-market and distribution center. The second/third grade class pursued interests in witches, horses, plants, and the human body. Reading and writing were usually integrated with these projects, but some small group and individual instruction was given to reading. A great emphasis was placed on literature and using a range of books, both fiction and nonfiction, in all studies. Literature was studied for itself too. Teachers frequently read aloud to children, discussed books with them, and often organized books for study around a common theme, concept, author, or illustrator.

The teachers varied, of course, in their understanding of integrated learning and ability to implement the concept. They varied also in their beliefs about effective ways to foster literacy. When the Writing Project began, the subjects in mid-first grade were distributed across two classrooms: one was a kindergarten/first grade; the other, a first/second grade. In both classes, teachers used a modified language experience approach in which experiences were charted. In turn, these

charts often were copied by children. Great emphasis was placed on correct spelling and capitalization, so lists of words in manuscript writing were made available to children before they began any personal writing. This emphasis changed over time as teachers saw that children had more spelling ability than they had been able to use and that they wrote more and better texts when freed from spelling constraints.

The second year of the study the subjects were again distributed over two classrooms, both containing pupils in grades two and three. Again, the teachers differed. One placed strong emphasis on language and literature, and the other emphasized science and physical activities. Both, however, participated enthusiastically in the study and appreciated the growth in writing they saw their children experiencing.

Subjects (24) were drawn from the first grade of an "alternative" school, an elementary school so designated because of its open enrollment, open-space, and open curriculum. This school was atended by children not only from a largely Black neighborhood with an SES distribution ranging from low to lower middle class, but also from middle class neighborhoods throughout the city. An additional sample (12) was drawn from the first grade of a suburban school with a Socio-economic Status (SES) distribution ranging from middle to upper class. From the former population, 12 subjects were identified as vernacular Black dialect speakers, using the revised measure of standard English proficiency noted above ($\underline{M}$ = 21.67; $\underline{SD}$ = 5.99). Subjects scoring ten or more on this measure were assumed to be vernacular Black dialect speakers.

Identifying Black-Vernacular Speakers

We hypothesized that dialects or codes may be related to exophoric reference. Evidence suggests that speakers of Black English vary considerably, both as individuals, and as a group, in the number and kinds of forms they produce in varying circumstances (Carroll and Feigenbaum, 1967; DeStefano, 1973; Dillard, 1972; Labov and Cohen, 1967).

To assure that subjects spoke vernacular Black English, three alternative screening techniques were considered: (1) technical detailed linguistic interviews (Labov, Cohen, Robins, and Lewis, 1968; Fasold and Wolfram, 1970); (2) semi-informal interviews (Shuy, Wolfram and Riley, 1968); and (3) sentence repetition tasks (Garvey and McFarlane, 1970; Politzer, Hoover, and Brown, 1974; Rentel and Kennedy, 1972). Given the inter- and intra-subject variability noted above, sentence repetition tasks were employed because these tasks discriminate among subgroups on items where a difference exists between the form presented, and a form habitually used by a subject and offered as a substitute, with relatively high reliability (Garvey and McFarlane, 1970). In addition to the advantages of increased discriminability and reliability, sentence repetition tests require less time and less exacting training for their proper administration. Ten structures from the Garvey and McFarlane

scale with reliability coefficients greater than .55 were selected and included in the scale, (four repetitions of each structure) for a total of 40 items (see Appendix A).

Determining Socio-Economic Status

During the first few weeks of the study (February 1979), the socio-economic status of those children for whom parental permission forms were received was determined by using a modification of the Index of Status Characteristics (Warner, Meeker, and Ellis, 1949), a scale which rates occupation, source of income, house type and dwelling area (see Appendix B). Because Warner's occupation ratings are dated, Hollingshead's Job Scale was substituted and weightings adjusted. Weighted totals of the four subscales comprised the SES score for each subject. The total scale had a range of 12-84.

All 20 of the vernacular speakers fell within the bottom quartile of the SES distribution, leading to the conclusion that, at least within this population, their dialect was socially constrained--that is, a sociolect (DeStefano, 1973). From this population, six males and females were drawn at random ($\underline{M}$ = 71.00; $\underline{SD}$ = 8.51). Middle class subjects were drawn from both, the same inner city school, and from a suburban school, (six males and six females from each) in order to contrast school and control for class differences.

Dugan (1977) found that first-grade boys differed significantly from first-grade girls both, in the amount, and kinds of information they incorporated into their retellings of stories. Sex also appears to be a factor in the number of vernacular black forms produced by a speaker (Wolfram, 1966), women using fewer Black English forms than their male, ghetto counterparts. To control for these expected differences, sex was incorporated into the design of the study as a blocking variable.

One of the most vexing problems in longitudinal research is, of course, subject mortality. To compensate for the possible loss of subjects from the group of 36, initially drawn at random from the total stratified subject pool, two additional subjects were drawn randomly from each level of the pool--as noted earlier, stratified by dialect/socio-economic class, sex and school--and assigned to each level of the design. Data were obtained on these 12 replacement subjects, all blind to their identity as replacements. Thus, eight subjects were assigned to each cell constituting the blocking variables in the study. Two subjects were lost from the lower class, female, vernacular-speaking, urban-school cell. Two also were lost from the middle class, female, nonvernacular-speaking, urban-school cell. To obtain equal numbers within each cell, two subjects were dropped at random from the remaining four cells in the design for a total of 36 subjects.

To determine the extent to which the assignment of replacement subjects to the design had affected the composition of these levels, scores for middle class subjects from the Index of Status Characteristics

were subjected to an analysis of variance having two between-subject comparisons--sex and school. The results of this analysis are presented in Table 1.

Table 1

ANOVA of Socio-Economic Class by School and Sex

Source	df	MS	F	p <
School (A)	1	222.04	5.39	.05
Sex (B)	1	35.04	.05	
School X Sex (A x B)	1	22.05	.54	
Error (W/Ss)	20	41.19		
Total	23	47.95		

As can be seen from Table 2, subjects from the suburban school scored significantly lower on the Index of Status Characteristics. As indicated by Table 1, there were no other significant effects.

Table 2

Means and Standard Deviations of Socio-Economic Class by School and Sex

Index of Status Characteristics	Urban School	Suburban School
Mean	38.33	32.25
Standard Deviation	7.47	4.41

Quite obviously, replacing subjects in the urban school population unbalanced the equality that had been established within the middle class population for the two schools. This finding of school differences, thus necessitated a design arrangement wherein the suburban population had to be treated as a distinct subgroup. Therefore, data from the suburban school were analyzed, both separately, and in a school replication arrangement for all MANOVAS, ANOVAS, and discriminant function analyses. These design arrangements are discussed in later sections of this chapter.

The import of this difference between the urban and suburban middle class populations must be kept in perspective. The Index of Status Characteristics, the socio-economic scale employed in this study, has a weighted score range of 12 to 84. Both means reported in Table 2 rest well below the midpoint of the scale (48), and clearly within the "middle class" spectrum on the scale. Whether or not treating class extremes such as "middle class" or "lower class" has any greater import for language variation than significant differences found to exist within these larger categories has not been established. But, there is no good reason for ignoring such "within-class" variations. Therefore, the finding that middle class children in the two schools differed significantly on the Index of Status Characteristics argued for the inclusion of a school replication study as a minimum and separate analyses for each school, as necessary, where differences in the replication study were obtained.

Data Collection Procedures

During the early weeks of the study, research associates worked in the classrooms with individuals and small groups of children. They read stories to them, invited children to retell the stories, or to tell others "they knew." The research associates also encouraged them to write, often providing materials in the form of colored paper, booklets, or flow pens. Children also were given the opportunity to dictate stories of their own composition, with the researcher acting as scribe. The oral story retellings, as well as the dictated stories, frequently were audiotape recorded to prepare the way for the recording to be done as a part of the later data collection. These activities were carried out in the regular classroom or other available vacant rooms in the schools. Prior to the actual data collection, all children had the opportunity to hear, tell, and dictate stories.

The language samples in the three modes were collected in March 1979, October 1979 and May 1980. Seven research associates participated in the data collection, but all had been working in the classrooms and were known to the children as visiting teachers. At least one associate worked regularly with each classroom and knew the children well. All researchers were trained in data collection procedures (see appendices C and D).

Story retelling data usually were collected in a single day at school, this was followed by the collection of dictation data, which required three or four days in each school. Every effort was made to fit the dictation and writing experiences into the ongoing life of the classroom. The writing was carried out in the classrooms, with the teachers discussing the assignment with their children.

Story Retelling

Three very different folktales were chosen for the retelling experience. The quality of the story, reasonable length for retelling, and children's lack of knowledge of the tale, were among the criteria that influenced selection (see page for others).

In small groups of four to six, children were taken out of the classroom to a room in the school where the stimulus story could be read without interruption. One member of the research team served as story "reader" and the others as "listeners" for the retellings. The children were told they would be read a new story that the reader had enjoyed and wanted to share with them. The reader also told the children they would each have the opportunity to share the story with a visiting teacher when the reading was finished. The reader then read the story as it typically would be read in the classroom, providing enough time so that the pictures could be viewed. Upon completion of the story, 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. If, at any time, a child indicated concern about being able to remember everything about the story, in retelling it to another, he was reassured that it was all right to retell only what he could remember.

Following the reading each child was taken to a "listener" member of the research team who was introduced as a teacher who did not know the story that had just been read. The number of listeners matched the number of children in each story reading group so that no child was made to wait, i.e., the time and activity between the end of the reading session and the retelling was uniform for each child. In introducing the listener, the reader explained to each child that the visiting teacher did not know the story that had just been read and stated that the teacher would like to hear it. The reader then left the room, the listener reaffirmed the task, explaining that the retelling would be tape recorded for the purpose of sharing it with other teachers who were interested in stories. Once the child began his retelling, the listener tried not to interrupt the child's narrative. The listener was attentive, but did not collaborate in the child's text production. The intent was to allow the child to construct his own text and to avoid additions by the listener to the content or structure of the narrative.

Dictated Story Data

Dictated stories were collected at the two schools during the two-week data collection period, exclusive of the two days devoted to story retelling. Expectations for dictating original stories to members of the research team had been established prior to the data collection; all children had previous experience in dictating stories to a researcher who acted as scribe while being tape recorded as an ongoing classroom activity. The child was told that his story was to be written for him,

that it could be as long (or as short) as he wanted, and that it could be about anything that interested him/her. Emphasis was placed on composing "your very own story," rather than retelling a well-known one (e.g., "The Three Little Pigs") or a recently-viewed TV cartoon.

The story was taken down in manuscript writing by the researcher. The child was aware that his words were being written and could see the actual writing if s/he wished. Children were given an unobstructed view of the scribe's activities and ample opportunity to observe the scribe take down their dictations.

Dictation proved to be a fairly popular activity in first grade, with most children requesting a turn with the scribe. Generally the order of data collection followed a volunteer pattern, with the scribes working with children who indicated their readiness with a story. At the time of collection each child went with a scribe to an available room in the school where a tape recorder had been set up. The dictation session was tape recorded, and the child was told that the purpose of the recording was to check on the accuracy of the scribe's copy before it was typed and placed in the classroom storybook. Once the child began dictating, the researcher attempted to keep up with the child's dictation pace, accepting any comments or instructions the child gave regarding the scribe's performance and/or the writing process, but was careful not to interrupt the child's narrative. In cases when a child dictated an obvious retelling of a known story or rhyme the scribe elicited a second dictated text after encouraging the child to tell his/her own story (see Dictation Procedures, Appendix D).

Story Writing Procedures

During the two-week observation period, an "assigned writing" sample was collected from each subject. Every effort was made to make this activity a natural part of the ongoing work of the classrooms. But in some situations, particularly in the early collections in grade one, the children were not accustomed to writing original stories. In fact, many did very little writing, and what was produced often was copied from charts or the chalkboard. In the beginning, it was therefore necessary to develop, with the teachers, conditions that would interest children and cause them to write a story within a period of one or two days. Emphasis was placed on writing stories. Thus, children were given colored paper or paper folded into booklets to further establish the story context. Teachers discussed the writing assignment with the children and tried to link it to work and experiences that children were currently involved in. Sometimes the discussion centered about stories, a wordless picture book, or a recent particular experience--a visit to a grocery store, or a performance by a mime. The contexts were varied, but a first priority of the investigations was to work within the curriculum and constraints of each classroom.

Sessions for assigned writing were not limited in time. Nevertheless, the children normally were to begin in early morning and continue for an hour or more, or until most children were finished. Anyone who had not finished and wished to do so, kept his story to work on through the afternoon and next day. The researcher, as well as the classroom teacher, was available in the initial writing session. The researcher then returned the next day to sit down with the authors and read through the stories. This last step was essential because children were encouraged to use their personal, creative, or invented spellings. Occasionally these renditions were beyond interpretation without the help of the author. The exact word intended was essential for the cohesion and story structure analysis, as well as for the spelling coding.

As soon as the writing was obtained, two copies were made and the original returned to the classroom, if so requested by the teacher. In most instances, however, the original script was retained.

Preparing the Oral and Written Texts for Coding

Preparation of the transcriptions of the audiotaped oral narratives produced in the two tasks (story retelling and story dictation) proceeded in two stages.

In the first stage, a complete transcription of each audiotaped data collection session was made. The stream of speech was initially segmented at the level of the orthographically realized word. Transcriptions were typed in traditional orthography with capitalization of proper nouns and the first-person singular pronoun. No punctuation was included in the typescripts. These original typescripts were unedited and included all verbalizations recorded during the sessions. Filled pauses, word and phrase repetitions, stutters, corrections and false starts were included, as were any verbal interactions between child and listener/scribe. Interjections by the adult were rare, but when they did occur, interjections typically consisted of indications of continued interest such as "hmm" or repetition of the child's most recent words following an extended pause. Unintelligible words or segments of text, which occurred very rarely, were noted in the following manner on the typescripts: (...), for what appeared to be a single word, and (... ...), for longer utterances. Lines of typed text were numbered sequentially and words spoken by the listener/scribe were identified with the letters: IN. (An example of an original typescript appears in Appendix F.)

Using both the prepared typescripts and the audiotapes, a research associate, working with a second researcher, edited the typescripts in preparation for coding. First, each child's narrative text was abstracted from the total language recorded during the taping sessions. There was no difficulty in determing text boundaries; the two editors agreed in all cases. Context supported by the children's use of

narrative conventions such as "once upon a time..." or "there was once..." and "they lived happily ever after," facilitated boundary decisions. Also of help in many language samples, was a shift into a "story voice" distinct from the conversational language intonation preceding and following the narrative text. Marked for exclusion from the analysis were non-silent phenomena such as filled pauses, unmotivated repetitions, and abandoned forms. These non-silent phenomena correspond to what have been called "mazes" (Loban, 1963), or "garbles" (Hunt, 1964), in descriptions of child language. Editors also marked listener/scribe interjections and child asides (examples of the latter: "I wanted 'landed'"; "did I say 'pigs'?"; "you like writing, don't you?") for exclusion from the narrative texts. Examples of verbalizations excluded from the narrative texts (marked by brackets and asterisks) are given below. The first example is from the retelling corpus and the second is from the dictation corpus.

[2.1] once there was an old woman and her little girl and they were really poor and they only had [a little] a tiny loaf of bread and then every day the little girl would go out [to find] to the woods to find some nuts and berries ...

[2.2] ... [um] the witch [um] went to feed the hogs then [um] the witch went to feed the chickens then the horses* did I say pigs did I say pigs*
IN:**you said hogs**
oh then pigs [she went to feed] she went to feed the pigs ...

Editing also involved identifying and marking the units upon which the subsequent cohesion and story structure analyses were to be based. While cohesion, Halliday and Hasan (1976) point out, is not limited to relations "above the sentence," the present study focused on the means whereby structurally unrelated units of language are linked together. Halliday and Hasan refer to this "intersentence cohesion" as "the variable aspect of cohesion" (1976, p. 9). The analysis of "non-structural" cohesion requires the identification of sentences or sentence-like units in the language to be analyzed. Linguists point out the difficulty of defining the "sentence" (Allerton, 1969; Crystal, 1976; Garvin, 1964). As Allerton notes, traditional definitions of the sentence are made in terms of the conventionalized written language, i.e., as a sequence of words lying between punctuation marks. Such traditional definitions were not useful for the oral language data of this study; therefore, an operational definition of a sentence-like unit that could deal with spoken English was selected: the "T-unit." As defined by Hunt (1964), the T-unit is a complex clause consisting of one independent or main clause with any dependent or subordinate clauses attached to it or embedded in it. The T-unit has been used in many studies of child language development--in both speech and writing--

because of its efficacy and reliability. This kind of reliability is particularly important to the present study of the cohesive relations between non-structurally related elements of children's oral narratives.

An additional editing procedure involved segmenting, or parsing, the texts into the T-units, upon which the cohesion analysis was based. Also at this point, selected symbols, found to be helpful during cohesion analysis in interpreting text and making coding decisions, were added to the typescripts. The full notational system used in editing the typescripts is presented in Figure 1. And an example of an edited original typescript appears in Appendix F. Following the editing procedure, typescripts were retyped, and coded identification number replaced all other identification on the protocols.

One copy of the children's writing was kept in its original state for analyses related to concept of message, spelling, and other writing conventions. The second copy of all those scripts judged to be a text were cast into T-units, edited, and transcribed (with all spellings correct), following the procedures used for the oral texts. Story structure and cohesion coding were done on the typed scripts that had been parsed into T-units.

Cohesion Coding and Analyses

Coding of the edited narrative texts followed the scheme set out in Cohesion in English (Halliday and Hasan, 1976). The five categories identified by Halliday and Hasan which represent types of cohesion (reference, substitution, ellipsis, conjunction, and lexical cohesion), provided the framework for coding. All instances of exophoric, as well as endophoric, presupposition, within these categories, were coded. While not contributing directly to the integration of a text (i.e., cohesion, as technically defined), exophora does contribute to the creation of text through linking language with features of the larger textual environment and, as such, bears on the question of interest in this study: what options do children use in creating their texts? All coding was done by two research associates and one principal investigator. A reliability check was run on a sample of ten randomly-selected texts, five representing each task. A research associate trained in cohesion analysis also coded the ten texts. The correlation coefficient calculated for the two coders was .96 (SPSS Subprogram Reliability).

As noted earlier, exophora is a type of phoricity which takes one outside the text. Exophoric items are presupposing textual elements, whose intended, more precise meanings, are mediated through extra-linguistic factors. While it is possible for the presupposition involved in reference, substitution, and ellipsis to be exophoric, occurrences in the latter two categories are fairly infrequent (Halliday and Hasan, 1976).

#	Used to mark the boundaries of each narrative text.
[ ]	Used to mark non-silent phenomena (filled pauses, unmotivated repetitions, abandoned forms, etc.) and, following Hunt, considered extraneous to the T-unit.
* . . . *	This mark identifies listener/scribe interjections or child asides not considered a part of the child's intended narrative text.
** . . . **	Used to mark any responses to interjections or asides not considered a part of the narrative text.
/	Slashes mark T-unit boundaries and are numbered sequentially.
? !	Question and exclamation marks were added to the typescript when the child's intonation warranted it and proved helpful in subsequent cohesion analysis (no other terminal punctuation was marked).
" . . . "	Quoted speech in the text for which a speaker is lexically identified.
((sp:name) ..."	Quoted speech in the text which is not lexically attributed to a speaker but which can be attributed to a speaker based on context or the child's use of a role voice.
((sp:?)) "..."	Quoted speech in the text which is ambiguous with respect to speaker.
<u>underlining</u>	Underlining is used to mark contrastive stress or other kinds of emphasis used by the child which could aid the cohesion coder in interpretating the text.

Figure 1: Notational System for Editing
Oral Language Transcripts

A system for subcategorizing exophoric reference was adapted from Hasan's forthcoming work (in press) on semantic styles. The subcategorization is based on the type of situational knowledge required for interpretation of the exophoric item. Using the criteria and terminology proposed by Hasan, the following subcategories of exophoric reference were coded in the data of this study:

Formal Exphora--Those items which are only technically exophoric. One's knowledge of the language and a shared cultural context allow an adequate interpretation. Thus, upon hearing or reading the utterance, "On her way home from school the reluctant scholar dropped her books in the street," one does not feel compelled to identify what street. Specific identification of the entity marked by the definite article is, in this instance, irrelevant. "Generalized" exophoric reference ("You [i.e., one] shouldn't feed the animals at the zoo"), "institutionalized" exophora ("Jim went to see the police"), and "homophora" (reference to a whole class or to a unique member of a class, such as the stars, the moon) were included in this category.

Instantial Exophora--Those items whose presuppositions are mediated via some elements in the immediate situation: reference is being made to some aspect of the here-and-now. For example, if an author begins his story with, "I went to Mars on a spaceship and had a great adventure," full identification of the referent of the pronoun is situationally possible. Even if not present at the text's creation, a partial identification of "author" is possible and usually adequate. In the narrative texts of this study, instantial exophorics were limited to first- and second-person pronouns.

Restricted Exophora--Those items whose intended meanings go completely beyond the immediate situation and are available to the listener/reader only on the basis of shared knowledge mediated by past experience. Thus, in a story retelling that begins, "They didn't have any food--just this little piece of bread. She went out to look for nuts and berries," identification of "they" and "she" is not possible without recourse to knowledge that goes beyond this retelling situation and this text. (If the illustrated story on which the retelling is based were present during the retelling, and the pictures were pointed to, then these exophora would be considered instantial. The book, with its illustrations, was not available to the child during the retelling task in this study.)

The semantic constraints involved in telling a story to another who claims not to know the story, require that one talk in such a way that one's meanings are available to the listener. The use of formal exophora and certain instantial exophora (those representing speech roles in the

situation) in the tasks of this study, were seen as unambiguous in these contexts of narration. However, the use of restricted exophora relative to the characters and events in the stories, was seen as ambiguous. In this study, formal and instantial exophora, whose meanings were considered available to the listener, were included for purposes of data analysis in the category of endophoric reference. Restricted exophora formed a spearate category for tabulating purposes. Thus frequencies within six categories of presuppositional "ties" were tabulated: reference, restricted exophoric reference, ellipsis, substitution, conjunction, and lexical cohesion. Appendix G contains an edited, retyped dictation text, along with a sample of the coding record for this text.

Analysis of the Cohesion Data

Differential use of cohesive ties in writing was compared in three separate MANOVAs where dialect, school, and sex served as the between-subjects factors and observation analyses, the within-subjects factor. MANOVA (Jones, 1966) was selected because it permits the testing of group differences in terms of multiple dependent variables considered simultaneously. MANOVA packages the dependent variables into a transformed composite variable, Y, which represents a linear combination of the response variables weighted to maximize a discriminant criterion. A significant MANOVA test statistic suggests rejection of the null hypothesis of no difference among group centroids. If overall differences among groups are found, follow-up techniques allow the assessment of the relative contribution of each of the dependent variables to those differences.

Three separate comparisons were made because, in each instance, there was no comparable population. In one comparison, the objective was to explore differences between schools; in another, differences between dialects within a single school; and in the third, differences between sex over observations. They are listed below:

MANOVA 1	School X Sex X Observation
MANOVA 2	Dialect X Sex X Observation
MANOVA 3	Sex X Observation

Figure 2. Cohesion Multivariate Analyses of Variance

Text length was free to vary in the narrative tasks of this study. To allow for differential text length, frequencies of ties within the six categories identified for coding were expressed as a proportion of total ties for each text. Following the coding, it was observed that reference, conjunction, and lexical cohesion were used extensively by all children in the tasks. Ellipsis and restricted exophoric reference were

used by most of the children. Moreover, use of these latter two categories of linguistic devices involved more than one instance in the great majority of cases, although their relative frequency of use did not approach the magnitude found for reference, conjunction, and lexical cohesion. Substitution, however, as a text forming device, was used by few children in the samples, and even fewer had more than one instance of substitution in their texts. Therefore, this category was eliminated from the multivariate analysis of variance, performed on the proportion scores of the remaining five categories. These categories were: exophoric restricted reference, ellipsis, conjunction and lexical cohesion.

Since proportion scores were to be used in the MANOVA, they were subjected to an arcsine transformation to conform to the assumptions of the multivariate normal distribution. The arcsine transformation results in a variable that is normally distributed with a constant variance. Computer program CANOVA, a component analysis of variance (Clyde Computing Services, 1973) was used for the MANOVA analysis. The test of significance employed was Wilks's likelihood ratio criterion, transformed into Rao's approximate F.

Story Structure Coding and Analyses

Texts may be thought of as having fixed and variable elements. The purpose of text analysis is to characterize these two properties. Propp (1968) attempted to specify the fixed properties of Russian fairy tales according to the functions of the dramatis personna, focusing upon what characters do rather than upon who carries out actions or upon how actions are accomplished. Functions abstractly represent actions. They are defined without reference to the character who performs them. A person who helps the hero satisfy a need can vary from tale to tale. The helper can be a witch, the hero's friend, or a stranger. The underlying action is the same. But since the action does take place within the overall set of actions that go to make up the tale, a given act can have different meanings. Someone who helps the hero obtain an agent necessary for satisfying a need renders a service far different from a person who helps lure the hero into a trap. Thus identical acts can represent quite different functions. And quite different acts may have the same meaning. For example, a warning to a child not to go into the forest differs significantly from one given to a combatant in the course of a conflict. A function is always defined relative to its significance for the course of the action.

Functions, therefore, serve as fixed elements in a tale. They are the basic constituents of the story. Propp identified 31 functions. Not all functions, however, must occur in a single tale. When functions do occur in a tale, they ordinarily do so in a particular order. Thus, order constitutes a second fixed element in a tale. Order grows out of the elemental logic of actions. Help cannot be given without some pre-existing need for it or without some circumstance

wherein the hero's plight is made obvious. Likewise, the transfer of money must be preceded by a clear need or a rendered service. Thus, order derives not from convention, but from the logic of events and actions. Tales with the same functions and orders are most likely representative of the same genre. But too much should not be made of order. Even in Propp's analysis of Russian tales, he was forced to posit the notion of transformations to account for tales whose functions appeared in a noncannonical order. If the order of functions follows logically from the nature of the actions, then it is not necessary to preserve cannonical order.

Subsidiary or minor tales may be embedded within, or follow upon, the major tale. Propp referred to these subsidiary tales as moves. The terminology is not critical. Thus, we too referred to all such subsidiary actions as moves. What is significant about them is that parallel, repeated, and sequential moves, complicate a tale, giving rise to the question of how such subsidiary moves are to be coded and scaled. Propp, of course, solved the problem by bracketing moves. He specified that two functions were the basis for assigning a bracket, i.e., villainy and lack. In addition, two pairings--struggle, coupled with victory, and a difficult task, coupled with its solution--constitute mutually exclusive elements, distinguishing villainy tales from seeker tales. A tale, conceivably, could contain both pairs, one pair, or neither pair. Their presence simply helps to distinguish between moves, but in no way should be considered obligatory. What is obligatory is villainy or lack.

Functions may have double meanings. For example, in Magic Porridge Pot, the mother lacks knowledge of the witch's interdiction, which, of course, she cannot help but violate. Both lack and violation of an interdiction were coded because both meanings were inherent in the action that ensued. A text also may be vague in terms of the actions of a character which, in turn, makes functions difficult to assign. For example, the text says: "Mother Goose was going out." But no further mention is made of her actions. Is this sufficient as a case of absention? Coding in these instances was governed by the principle of assigning functions on the basis of consequences. Did the tale proceed as if absention occurred? If so, then the meaning of the function was absention and so coded. If the tale continued with subsequent actions indicating Mother Goose did not go out, then absention was not coded. Questions of this sort were always resolved by defining the function according to its consequences.

Interjudge Reliabilities for Coding Proppian Functions

On separate occasions, the same pair of judges coded two sets of protocols from two different story retellings. Interjudge reliabilities were computed for each set of 20 protocols (.85, .89). Dictation protocols (36) were coded by a different pair of judges, who achieved a slightly higher level of reliability than the first pair (.93). Overall, however, reliabilities were sufficiently high to warrant confidence in function definitions and coding procedures (see Appendix H).

Genre Classification

After judges had been trained and interjudge reliabilities had been extablished, each protocol then was classified as to its genre of discourse. For, even though task instructions to the children had specified that they tell or write stories, many children produced other genres of text. P ocols, thus, were classified as follows:

1. No " -No utterance produced by the child.

2. Statement/Label--A single word or phrase defining or describing something in the immediate environment. For example, "It was a duck," or "Desk."

3. Composition--A present tense depiction of a child's current experience. Compositions are closely identified with the circumstances, in and for which, they are produced, i.e., completing a writing assignment for the teacher. To illustrate: "My mom is nice. I go to school. My mom loves me."

4. Interaction--A text with many elements of a dialogue having an implied listener with whom an experience is being shared. For example: "First, you draw a circle. Then you draw a line. Then you make another line here."

5. Chronicle--Narrative that parallels real events in a child's life, yet expressed in a story frame with conventions such as, "Once a little girl and boy went to Disneyland." Character and actions that parallel non-fictive experience and thematic unity, characterize these texts.

6. Tale--Narrative that sets forth events and circumstances that may reflect real life but without essential dependence on historical fact. They have thematic unity, conventional story markers, and fantastic characters, as well as fantastic events. They are fictive in nature.

Following genre classification, chronicles and tales were coded and scored for Proppian functions by five judges blind to subject identity but aware of context variations. There was no way to conceal these differences entirely, because retellings, of course, were about the same well known stories. Only retellings and dictations were compared. Despite instructions to the contrary, many children failed to produce chronicles and tales in the wr ing context, thus precluding comparisons with a measure that presumed a story genre. As reported above, interjudge reliabilities were moderately high. Still, occasional coding problems and questions arose. Two judges resolved such questions and assigned a function as agreed. It should be noted that in scoring the retellings, no attempt was made to assess recall. Only the functions

found in the children's texts were scored, regardless of whether or not a counterpart for a given function could be found in the tale the children had heard. The present study sought only to compare "packaging" and production of functions. Studies of the role of memory and comprehension in production are under consideration for later analyses, and one completed study will be presented in Chapter 6.

Selecting Stories for Retellings

In selecting stories for retelling, a main concern was to find stories that were not known to our subjects, but would likely interest them. Our subjects varied greatly in their experiences with traditional literature. They ranged from one group, that seemed to have some acquaintence with almost all stories considered, to another whose backgrounds were meagre. Selecting stories became more of a problem than originally anticipated.

At the onset of the project, most Russian fairy tales were too long and complex for some of our subjects. We looked for well-formed and artfully illustrated folktales, especially for recently published ones or new versions of old tales. To heighten interest, we chose to use picture books, but this decision constrained our choice of stories.

Three very different stories were eventually selected for story retelling--a modern fable, a folktale, and a Russian fairy tale.

Squawk to the Moon, Little Goose, by Edna Mitchell Preston, illustrated by Barbara Cooney (Viking, 1974).

Magic Porridge Pot, by Paul Galdone (The Seabury Press, 1976).

Salt, by Harve Zemach, illustrated by Margo Zemach (Holt, Rinehart and Winston, 1967).

Squawk to the Moon, Little Goose is a story of lack that has, embedded within it, three brief tales of villainy which provide the trebbling element found in many folktales. The story also contains folktale features of trickery, and also refrain, as with Little Goose's, "Good's good and bad's bad."

In Proppian analysis, the tale had two moves.

a (beginning situation)
2 (interdiction) coupled with 1 (absentation)
8a (lack: maturity and insight) and 3 (violation of interdiction)
...
6 (trickery) coupled with 7 (complicity)
8b (villainy)
10 (counteraction)
11 (departure)
12 (preparation)

13 (reaction)
15 (translocation)
8b (villainy)
9 (mediation)
10 (counteraction) coupled with 14 (receipt)
18 (victory) coupled with 19 (liquidation)
...
20 (return)
30 (punishment)
31 (equilibrium)

Magic Porridge Pot is one version of the magic pot tales that exist in several different cultures. It is especially appealing to children because it is the mother sho uses the magic pot without permission and as a result creates a huge problem which the daughter solves.

Actually, Magic Porridge Pot is two tales, conjoined by an interdiction given in the first, and violation of the interdiction, in the second. In Propp's terms, it is a tale with two moves:

a (beginning situation)
8 (lack) joined with 11 (departure)
9 (mediation)
12 (function of donor) and 2 (interdiction)
14 (receipt of magic agent) and 15 (transference)
19 (lack liquidated) and 31 (equilibrium)

The final state of happiness in the first tale provides the beginning for the second.

1 (absention)
8a (lack) and 3 (violation of interdiction)
20 (return)
19 (lack liquidated)
31 (equilibrium)

Salt is a story of the younger brother, "the fool," succeeding in making his fortune while his two older brothers turn to villainy and fail. It is a tale of lack--lack of status, success--in which a tale of villainy is embedded. The villainy tale is interrupted by a giant's story, a tale of interdiction and lack.

a (beginning situation)
8a (lack), 11 (departure) and 12 (donor)
14 (magic agent) 15 (transference)
25 (difficult task) and 26 (solution of task)
30 (reward to hero) and 31 (promise of marriage)

a (beginning situation) and 11 (departure)
5 (delivery of victim to villain) 8 (villainy)
...

a (beginning, giant's tale)
8 (lack of transport, giant's lack of happiness)
2 (interdiction) 15 (transference)
20 (return home)
...

27 (recognition of hero)
28 (exposure of false hero)
30 (villainy punished) 31 (wedding)
...

3 (interdiction violated)
25 (difficult task)
26 (solution)
31 (equilibrium)

These stories were analyzed to determine their comparability in terms of Propp's functions. The criteria on which they were compared were: (a) total number of functions in a story, (b) the number of different types of functions in a story, and (c) the number of moves in a story. As noted earlier, a given function may occur in a story more than once, either through trebbling, or additional moves, roughly reflecting the tale's length. On the other hand, the number of different types of functions suggests something of the tale's richness while number of moves may indicate complexity. As can be seen from Table 3, Salt and Squawk to the Moon, Little Goose are equally rich, though Salt is shorter and somewhat more complex. They differ considerably, however, from Magic Porridge Pot, a fairly straightforward and brief story with a slight ironic twist in the second move. Both Salt and Squawk to the Moon, Little Goose contain parallel action and multiple embedding. While Squawk to the Moon, Little Goose embodies the simple, but clear, moral ambiance of a fable for children, Salt has all the atmospherics of a true Russian fairy tale. Thus, each story constituted a rather different experience for each retelling.

Table 3

Number of Functions, Types, and Moves in Three Stories

Stories	Functions	Types	Moves
Squawk to the Moon, Little Goose	29	18	2
Magic Porridge Pot	15	12	2
Salt	22	18	3

Analysis of Story Structure Data

Both multivariate and univariate analyses of variance were employed for story structure comparisons. For the multivariate analyses, as with cohesion, computer program CANOVA (Clyde Computing Services, 1973) was used. This program tests for significant differences with Wilks's liklihood ratio transformed to Rao's approximate F. Significant multivariate differences were followed-up with univariate analyses of variance.

Number of functions, function types, and moves, served as dependent variables in six complementary multivariate analyses of variance performed on the story structure data. In the first of these analyses, 144 scores for each dependent variable were organized into a mixed design, where sex (six males and six females) and dialect (six vernacular and six nonvernacular) served as between-subjects comparisons, and where modes of discourse (retelling and dictation) and observation periods (Spring 1979, Autumn 1979, Spring 1980) constituted the within-subjects comparisons. This study was designed to compare factors within the urban school setting. Similar design arrangements were employed in a second analysis whose purpose was to compare the urban with the suburban school controlling for dialect. While only middle class children from the two schools were compared, the two populations did differ on the index of status characteristics with t (24 df) = 2,79 ($p < .01$). Children from the suburban school averaged from middle to upper-middle class on the "index" (M = 33.33; SD = 4.37). While those from the urban school, averaged somewhat higher scores on the scale (M = 38.33; SD = 7.79). The two populations had been equated on the scale at the outset of the study, but because of subject mortality and replacement, this initial equality was lost necessitating a school comparison. For this comparison, dependent variables were organized into a 2 x 2 x 2 x 3 mixed design where sex and school were the between-subjects factors and where modes and observations were the within-subjects factors. A third multivariate analysis of variance then was employed to examine only the suburban school. As before, number of functions, function types, and moves, were organized into a mixed design with one between-subjects comparison--sex (six males and six females)--and two within-subjects comparisons--modes and observations.

Three additional multivariate analyses of variance focused upon dictation. Retelling was removed as a comparison in order to obtain a clearer view of dictation over the three observation periods--retelling differences having potentially spurious origins in the variance associated with apriori story differences. In all other respects, design goals and arrangements were identical to those reported above.

Significant MANOVA test statistics were followed up by univariate analyses of variance. These designs compared the same variables, organized in the same ways reported above, for the multivariate analyses. Significant univariate F ratios were subjected to Geisser-Greenhouse

conservative F corrections for repeated-measures designs. Post hoc comparisons were made using Tukey's H.S.D. procedure.

Procedures for Coding Concept of Message

Two additional univariate analyses of variance were performed on functions and function types from texts produced by a sample of subjects who were able to compose unequivocal fictional narratives. Just 14 subjects were able to do so by mid-first grade. This number rose to 27 at the end of grade two. The point of these two analyses was to obtain developmental data controlled rigorously for genre. Other genres of text were excluded from these analyses to eliminate genre as a contaminating source of variance.

During the early stages of becoming literate, young children begin to gain control over basic concepts about the organization of surface features of written language. They learn the specifics of how texts convey information, e.g., that the groups of letters, not the pictures, carry the message, or that particular patterns of letters correspond to particular spoken words (Clay, 1975; Henderson, 1980). Simultaneously, they also internalize and use the rules governing direct physical aspects of text, e.g., conventions of spacing and directionality. As part of this study, samples of children's writings were examined to see how children differed in their understanding and use of these principles.

Sets of exhaustive, mutually exclusive categories, were developed for each of the three dimensions of Concept of Message, Directionality, and Spacing. (These will be described in greater detail in the section, Results and Discussion: Conventions of Print.) Based on their writing samples, each subject was classified as being in one category, for each dimension, for each of the five observations. Because of the explicit nature of the categories (e.g., percent of word boundaries observed, string of random letters), a single investigation--working with the writing samples and data collectors' written comments--classified the data. No assumptions have been made about the linear or progressive nature of the categories. It was expected however, that, in a general way, subjects would be classified in the higher number categories as they gained more control over the conventions. The number and percentage of children per category was tabulated by sex, dialect, school, and observation. These data will be reported in Chapter 3.

Chapter 3

Results and Discussion: Cohesion

Children create integrated patterns of text through cohesive ties. They learn that these patterns of meaning are achieved in large measure through cohesion--the semantic relations established when children tie the interpretation of one element in a text to another. As described in Chapter 1, ties across sentence boundaries define a pattern of meaning relationships which contribute to the identity of a text. This pattern of relationships is known as texture. Five kinds of cohesive ties are employed to achieve texture: reference, ellipsis, substitution, conjunction and lexical cohesion. Children learn that through these devices, they can create internally consistent texts which stand on their own. They discover that all necessary meanings can be captured in a text without referring to anything in the immediate context. This chapter will present evidence for these crucial developmental items. There also will be a discussion of the evidence, first, in terms of overall patterns of cohesion in writing, and later, in terms of differences arising from school contexts, socio-economic class, dialect, and sex.

Overview of Results

Lexical cohesion, coupled with an increase in children's ability to verbalize many meanings previously coded in gesture and action, accounted for the greatest change over time, as revealed in the cohesion data. The next largest change was children's increased use of conjunction. And the third largest, was a decrease in the use of exophoric reference. Other changes varied among the three populations in the sample. Similarities and differences were probed in a series of multivariate analyses, followed up discriminant function analyses. These analyses and interpretations will be presented in the following order:

1. Urban school results, which included the lower class vernacular and middle class nonvernacular subjects.
2. Urban/Suburban school replication results, which included both groups of middle class subjects.
3. Suburban school results, which included only upper middle class subjects.

Results

Three multivariate analyses of variance (MANOVA) were performed on the arcsine transformed proportions for five of the text-forming variables identified during the coding analysis of the writing data. Table 4 lists the text forming categories used for these analyses.

Table 4

Dependent Variables for the Cohesion MANOVAs

Variable Number	Text Forming Category
1	Restricted Exophoric Reference
2	Reference
3	Ellipsis
4	Conjunction
5	Lexical Cohesion

The first MANOVA analyzed the cohesion data from the urban school. Dialect and sex were the between-subjects factors, and observations was the within-subjects factor. Table 5 displays the means and standard deviations for the cohesion proportions from the urban school. (The means and standard deviations for the substitution cohesion category proportions can be found in 1.1 in Appendix I.)

The second MANOVA analyzed cohesion data from the nonvernacular subjects in both the urban school and the suburban school. The between-subjects factors in this analysis were school and sex; observations was the within-subjects factor. Table 6 displays the means and standard deviations for the cohesion proportions for the school replication analysis. (The means and standard deviations for the substitution cohesion category proportions can be found in Table 1.2 in Appendix I.)

The third MANOVA analyzed cohesion data from the suburban school. Sex was the between-subjects factor and observations was the within-subjects factor. Table 7 displays the means and standard deviations for the cohesion proportions from this suburban school. (The means and standard deviations for the substitution cohesion category proportions can be found in Table 1.3 in Appendix I.)

Results from MANOVA on Writing Data for the Urban School

Results from the MANOVA on the urban data (see Table 8) indicated a significant multivariate test statistic for the main effects of dialect, sex, and observation. None of the first- or second-order interactions were significant.

Table 8 shows that a significant Wilks's lambda criterion for observation: $F(10, 72) = 3.31$, $p < .001$ was obtained. It should be noted that, after removal of effects associated with this leading root for observation, no significant discrimination remains.

Table 5

Means and Standard Deviations for Cohesion MANOVA (Transformed Variables) in Writing at Urban School--by Dialect, Sex, and Observation

Dialect	Sex	Observation	R Exo Ref		Reference		Ellipsis		Conjunction		Lexical	
			M	SD	M	SD	M	SD	M	SD	M	SD
Vernacular												
	Males	1	0.18	0.38	0.24	0.23	0.00	0.01	0.07	0.11	0.28	0.24
		2	0.70	0.72	0.27	0.35	0.00	0.00	0.00	0.00	0.05	0.10
		3	0.04	0.10	0.12	0.14	0.00	0.00	0.07	0.11	0.28	0.31
	Females	1	0.06	0.09	0.25	0.21	0.00	0.00	0.18	0.20	0.37	0.21
		2	0.19	0.23	0.13	0.22	0.00	0.00	0.00	0.00	0.19	0.23
		3	0.00	0.00	0.30	0.24	0.01	0.02	0.08	0.09	0.30	0.25
Nonvernacular			0.10	0.17	0.38	0.17	0.01	0.02	0.09	0.07	0.45	0.17
	Males	1	0.10	0.28	0.46	0.31	0.04	0.07	0.13	0.10	0.25	0.18
		2	0.26	0.64	0.51	0.58	0.02	0.06	0.08	0.09	0.13	0.15
		3	0.05	0.10	0.50	0.32	0.02	0.04	0.14	0.12	0.17	0.15
	Females	1	0.04	0.08	0.51	0.29	0.04	0.08	0.19	0.10	0.25	0.09
		2	0.21	0.20	0.35	0.25	0.05	0.10	0.07	0.12	0.18	0.21
		3	0.01	0.02	0.49	0.26	0.04	0.05	0.13	0.08	0.18	0.21
Sex Means			0.01	0.01	0.41	0.07	0.06	0.09	0.14	0.08	0.40	0.11
	Males		0.19	0.44	0.36	0.35	0.01	0.04	0.11	0.13	0.21	0.20
	Females		0.09	0.16	0.34	0.23	0.03	0.06	0.08	0.09	0.32	0.21
Observation Means		1	0.34	0.52	0.31	0.38	0.02	0.06	0.04	0.08	0.14	0.18
		2	0.03	0.07	0.35	0.28	0.02	0.03	0.10	0.10	0.29	0.24
		3	0.05	0.10	0.39	0.21	0.03	0.06	0.15	0.12	0.37	0.16

Table 6

Means and Standard Deviations for Cohesion MANOVA (Transformed Variables) in Writing—by School, Sex, and Observation for Urban-Suburban School Replication

School	Sex	Observation	R Exo Ref		Reference		Ellipsis		Conjunction		Lexical	
			M	SD	M	SD	M	SD	M	SD	M	SD
Suburban			0.02	0.06	0.47	0.24	0.02	0.03	0.15	0.10	0.40	0.17
	Males	1	0.06	0.14	0.77	0.42	0.00	0.00	0.14	0.15	0.17	0.22
		2	0.03	0.05	0.43	0.12	0.00	0.01	0.22	0.07	0.35	0.10
		3	0.01	0.02	0.35	0.08	0.01	0.01	0.19	0.05	0.47	0.07
	Females	1	0.00	0.00	0.53	0.14	0.01	0.02	0.09	0.13	0.41	0.09
		2	0.01	0.01	0.39	0.13	0.06	0.03	0.13	0.08	0.44	0.10
		3	0.01	0.02	0.37	0.07	0.02	0.03	0.12	0.05	0.52	0.14
Urban			0.10	0.28	0.46	0.31	0.04	0.07	0.13	0.10	0.25	0.18
	Males	1	0.26	0.64	0.51	0.58	0.02	0.06	0.08	0.09	0.13	0.15
		2	0.05	0.10	0.50	0.32	0.02	0.04	0.14	0.12	0.17	0.15
		3	0.04	0.08	0.51	0.29	0.04	0.08	0.19	0.10	0.25	0.09
	Females	1	0.21	0.20	0.35	0.25	0.05	0.10	0.07	0.12	0.18	0.21
		2	0.01	0.02	0.49	0.26	0.04	0.05	0.13	0.08	0.38	0.21
		3	0.01	0.01	0.41	0.07	0.06	0.09	0.14	0.08	0.40	0.11
Sex Means	Males		0.07	0.27	0.51	0.35	0.01	0.04	0.16	0.11	0.26	0.18
	Females		0.04	0.11	0.42	0.17	0.04	0.06	0.11	0.09	0.39	0.17
Observation Means		1	0.13	0.34	0.54	0.39	0.02	0.06	0.10	0.12	0.22	0.20
		2	0.02	0.06	0.45	0.21	0.03	0.04	0.15	0.09	0.34	0.17
		3	0.02	0.04	0.41	0.16	0.03	0.06	0.16	0.08	0.41	0.14

Table 7

Means and Standard Deviations for Cohesion MANOVA (Transformed Variables)
in Writing at Suburban School--by Sex and Observation

Sex	Observation	R Exo Ref		Reference		Ellipsis		Conjunction		Lexical	
		M	SD	M	SD	M	SD	M	SD	M	SD
Males		0.03	0.08	0.52	0.31	0.00	0.01	0.18	0.10	0.33	0.19
	1	0.06	0.14	0.77	0.42	0.00	0.00	0.14	0.15	0.17	0.22
	2	0.03	0.05	0.43	0.12	0.00	0.01	0.22	0.07	0.35	0.10
	3	0.01	0.02	0.35	0.08	0.01	0.01	0.19	0.05	0.47	0.07
Females		0.00	0.01	0.43	0.13	0.03	0.03	0.11	0.09	0.46	0.12
	1	0.00	0.00	0.53	0.14	0.10	0.02	0.09	0.12	0.41	0.09
	2	0.01	0.01	0.39	0.13	0.06	0.03	0.13	0.08	0.44	0.10
	3	0.01	0.02	0.37	0.07	0.02	0.03	0.12	0.05	0.52	0.14
Observation Means Overall:	1	0.03	0.10	0.65	0.32	0.00	0.02	0.11	0.13	0.29	0.20
	2	0.02	0.03	0.41	0.12	0.03	0.03	0.17	0.09	0.39	0.11
	3	0.01	0.02	0.36	0.07	0.01	0.02	0.15	0.06	0.50	0.11

Table 8

Cohesion MANOVA in Writing
by Dialect, Sex, and Observation for Urban School

Source	df	dfHYP	dfERR	F	p
Between Subjects	23				
Dialect (A)	1	5.00	16.00	9.41	.001
Sex (B)	1	5.00	16.00	3.38	.028
Dialect X Sex (AxB)	1	5.00	16.00	0.65	.668
S/AB	20				
Within Subjects	48				
Observation (C)	2	10.00	72.00	3.31	.001
		4.00	36.50	1.01	.417
Dialect X Observation (AxC)	2	10.00	72.00	0.42	.931
		4.00	36.50	0.47	.760
Sex X Observation (BxC)	2	10.00	72.00	0.96	.427
		4.00	36.50	0.46	.220
Dialect X Sex X Observation (AxBxC)	2	10.00	72.00	0.62	.789
		4.00	36.50	0.15	.964
SC/AB	40				
TOTAL	71				

To determine the nature and source of the observation differences, relative to the use of the cohesion categories, a discriminant analysis was performed on this factor. The analysis yielded: (1) standard discriminant weights--standardizing the discriminant weights transforms them into comparable units (Jones, 1966); (2) structure coefficients for each of the dependent variables, which represent correlations between discriminant scores and the original variables; and, (3) group means on the discriminant function. The discriminant weights and structure coefficients, along with the results of the univariate ANOVA significance tests on each of the five cohesion categories, are presented in Table 9.

Taken together, these follow-up techniques indicate the three variables that are the best discriminators for observation differences. In order of decreasing importance, these variables are: the use of lexical cohesion, the use of restricted exophoric reference, and the use of conjunction.

The mean differences (see Table 5) show that the use of lexical cohesion increased over the three observations. An average of 14% of all text forming devices used were lexical in the first observations; increasing to 29% in the second; and increasing further, to 37% in the last observation.

With respect to the use of restricted exophoric reference, a different pattern was observed. The mean differences (see Table 5) indicate that the use of restricted exophoric reference was highest in the first observation (34% and then decreased in observations two and three (3% and 5% respectively).

The pattern in the use of conjunction, on the other hand, was similar to that of the use of lexical cohesion. That is, the use of conjunction increased over the three observations. An average of 4% of the text forming devices used were conjunction in the first observation, increasing to 10% in the second, and increasing further, to 15% in the last observation.

From a multivariate perspective, plotting the group means on a linear representation of the discriminant function, which includes all of the dependent variables, reveals separation among the observations in the following manner: observation one, $\bar{X} = .103$; observation two, $\bar{X} = 1.172$; and, observation three, $\bar{X} = 1.583$. The sharpest discrimination is between the first and third observations, with observation two falling between these two observations but more like the third observation.

Sex factor follow-up. The significant multivariate test statistic for the main effect for sex was followed up by performing five univariate analyses of variance (ANOVAs) on each of the dependent variables. Table 10 displays the univariate F test statistics from the ANOVAs. An

Table 9

Discriminant Analysis and Univariate ANOVAs
Use of Cohesion Categories in Writing at Urban School for Observation

Cohesion Category	Standardized Discriminant Analysis Weights	Structure Coefficients	Univariate F Tests (2, 40)	p<
Restricted Exophoric Reference	- .533	- .697	8.07	.001
Reference	- .079	.168	0.43	.65
Ellipsis	- .027	.112	0.35	.71
Conjunction	.487	.690	9.06	.001
Lexical Cohesion	.557	.758	7.53	.002

examination of Table 10 indicated that the univariate sex factor was significant only for the lexical cohesion dependent variable, F (1, 20) = 9.28, $p < .006$. This result indicated that the mean proportions for lexical cohesion for males and females displayed in Table 5 were significantly different. More specifically, girls at the urban school used a significantly higher proportion of lexical cohesive ties (.32) than the boys did (.21).

Dialect factor follow-up. To determine the nature of the dialect group differences relative to the use of the cohesion categories, a discriminant analysis follow-up was performed on the dialect factor. This analysis yielded standardized discriminant weights and structure coefficients for each dependent variable, as well as group means on the discriminant function for dialect. Table 11 presents the discriminant weights and structure coefficients along with the univariate ANOVA significance tests on the cohesion categories.

Taken together, these follow-up techniques indicate that the best discriminators for dialect group differences are first, the use of reference, and second, the use of ellipsis. Therefore these two dependent variables are the major contributors to the discrimination between the vernacular group (group mean on the discriminant function = .453) and the nonvernacular group (group mean on the discriminant function = 1.85).

The mean differences (see Table 5) show that the use of these two implicit text forming devices are higher for the nonvernacular dialect group than for the vernacular dialect group. More specifically, for the nonvernacular group, an average of 46% of cohesive ties used were reference ties. Whereas, for the vernacular group, only 24% were reference. For the nonvernacular group, an average of 4% of cohesive ties were established with ellipsis, but for the vernacular group, virtually no cohesive ties were achieved through ellipsis.

Results from MANOVA on Writing Data for Urban-Suburban School Replication

The second MANOVA analyzed cohesion data from the nonvernacular subjects in both the urban and suburban schools. Results from this MANOVA are presented in Table 12.

The MANOVA summary table indicated a significant multivariate test statistic for the main effects of school, sex, and observation. None of the first- and second-order interactions were significant.

Table 10

Mean Squares, F-Values and Levels of Significance for Cohesion Categories (Transformed Variables) in Writing at Urban School for Sex Factor

Factor	df	Restricted Exophoric Reference			Reference			Ellipsis			Conjunction			Lexical		
		MS	F	p<	MS	F	p<	MS	F	p<	MS	F	p<	MS	F	p<
Sex (B)	1	0.200	2.32	.14	0.005	0.05	.83	0.005	2.15	.16	0.012	0.81	.38	0.218	9.28	.006
Error Term (S/AB)	20	0.086			0.096			0.002			0.015			0.023		

Table 11

Discriminant Analysis and Univariate ANOVAs
on Use of Cohesion Categories in Writing for Dialect for Urban School

Cohesion Category	Discriminant Analysis Weights	Structure Coefficients	Univariate F Tests (1, 20)	p<
Restricted Exophoric Reference	- .008	- .222	1.53	.23
Reference	.768	.647	9.02	.007
Ellipsis	.680	.558	9.34	.006
Conjunction	.532	.445	3.96	.06
Lexical Cohesion	- .476	- .091	0.38	.55

Table 12

Cohesion MANOVA in Writing by School, Sex, and Observation for Urban-Suburban School Replication

Source	df	dfHYP	dfERR	F	p<
Between Subjects	23				
School (A)	1	5.00	16.00	5.68	.003
Sex (B)	1	5.00	16.00	3.29	.03
School X Sex (AxB)	1	5.00	16.00	0.19	.96
S/AB	20				
Within Subjects	48				
Observation (C)	2	10.00	72.00	2.02	.04
		4.00	36.50	0.27	.90
School X Observation (AxC)	2	10.00	72.00	0.94	.50
		4.00	36.50	0.74	.57
Sex X Observation (BxC)	2	10.00	72.00	0.35	.97
		4.00	36.50	0.14	.97
School X Sex X Observation (AxBxC)	2	10.00	72.00	0.50	.88
		4.00	36.50	0.29	.88
SC/AB	40				
TOTAL	71				

Observation factor follow-up. The school replication MANOVA produced a significant Wilks's lambda criterion for observations, F (10, 72) = 2.02, $p < .04$. After removal of effects associated with the leading root for observations, no significant discrimination remained (see Table 12).

To determine the nature and source of the observation differences relative to the use of the categories, a discriminant analysis follow-up was performed on the observation factor. This analysis yielded standardized discriminant weights and structure coefficients for each dependent variable, as well as group means on the discriminant function for observation. Table 13 presents the discriminant weights and structure coefficients, along with the univariate ANOVA significance tests on the cohesion categories.

Taken together, the structure coefficients and univariate significance tests revealed that use of lexical cohesion to be the primary discriminator among the three observations. Following lexical cohesion, the use of conjunction also contributes significantly to the difference among observations. Table 6 shows that the use of lexical cohesion increased regularly across the three observations. Lexical ties represented 22% of cohesive devices used at observation one, 34% at observation two, and 41% at observation three. The use of conjunction similarly increased over time. It went from 10% at observation one, to 15% at observation two, and to 16% at observation three.

From a multivariate perspective, plotting the group means on a linear representation of the discriminant function, which includes all of the dependent variables, reveals separation among the observations in the following manner: observation one, X = 1.189; observation two, X = 2.117; and, observation three, X = 2.498. The sharpest discrimination occurs between observations one and three, with observation two, while falling between these extremes, apparently more like observation three.

Sex factor follow-up. Five univariate analyses of variance (ANOVAs) on each of the dependent variables were performed as follow-up procedures for the significant effect for sex. Table 14 displays these follow-up ANOVAs. An examination of Table 14 revealed that the univariate sex factor was significant for two dependent variables: ellipsis, F (1,20) = 5.13, $p < .04$; and lexical cohesion. F (1,20) = 16.29, $p < .001$. This result indicates the mean proportions for these two dependent variables for males and females, displayed in Table 6, were significantly different. More specifically, Table 6 shows that girls used a higher proportion of ellipsis (.04) and lexical cohesion (.39) than boys did (.01 and .26, respectively) in forming their written texts.

Table 13

Discriminant Analysis and Univariate ANOVAs
in Writing in School Replication for Observation

Cohesion Category	Standardized Discriminant Analysis Weights	Structure Coefficients	Univariate F Tests (2, 40)	$p <$
Restricted Exophoric Reference	- .221	- .528	2.41	.10
Reference	- .739	- .401	1.37	.27
Ellipsis	.188	.195	0.29	.75
Conjunction	.479	.572	3.64	.04
Lexical Cohesion	.721	.847	9.96	.001

Table 14

Mean Squares, F-Values and Levels of Significance for Cohesion Categories (Transformed Variables) in Writing in School Replication for Sex Factor

Factor	df	Restricted Exophoric Reference			Reference			Ellipsis			Conjunction			Lexical		
		MS	F	P<	MS	F	P<	MS	F	P<	MS	F	P<	MS	F	P<
Sex (B)	1	0.020	0.54	.47	0.136	1.90	.18	0.011	5.13	.04	0.040	3.17	.09	0.315	16.29	.001
Error Term (S/AB)	20	0.036			0.071			0.002			0.013			0.019		

School factor follow-up. A discriminant analysis follow-up was performed to determine the nature of the school group differences relative to the use of the cohesion categories. Discriminant weights and structure coefficients (yielded in the discriminant analysis), along with the univariate ANOVA significance tests on each of the five cohesion categories, are presented in Table 15.

It should be noted that the standarized discriminant analysis weights and the structure cofficients for the dependent variables displayed in Table 15 do not reflect the same pattern, relative to the magnitude of the contribution of the variables. Standardized discriminant weights represent the unique contribution of each of the variables to the function and, as such, are partials. In the event that two variables are highly correlated, standardized discriminant weights will be suppressed, which can lead to erroneous conclusions, relative to the importance of a given variable to the discriminant function. Structure coefficients, on the other hand, represent correlations between the discriminant scores and the original variables. Therefore, structure coefficients are recommended over discriminant weights in interpreting the relative contributions of the variables to the function (Pettegrew, 1981).

Examination of the structure coefficients (along with the ANOVAs) displayed in Table 15,. indicated that the best discriminator for school group differences was the use of lexical cohesion. Group means on the discriminant function which includes all of the dependent variables were: 3.046 for the suburban school, and 2.008 for the urban school.

The mean differences (see Table 6) show that the use of lexical cohesion was higher in the suburban school (.40) than in the urban school (.25).

Results from MANOVA on Writing Data for Suburban School

The third MANOVA analyzed only the cohesion data in writing at the suburban school. Significant multivariate test statistics for the effects of sex and observation were seen (see Table 16.). After removing the effects of the leading root for observation, no significant discrimination remained. The interaction of sex X observation was not significant.

Observation factor follow-up. To determine the nature of differences in the use of cohesive options across observations, a discriminant analysis follow-up was performed. The standardized discriminant weights and structure coefficients derived in this analysis are displayed in Table 17, along with the univariate statistics for each dependent variable.

Table 15

Discriminant Analysis and Univariate ANOVAs
on Use of Cohesion Categories in Writing for School

Cohesion Category	Standardized Discriminant Analysis Weights	Structure Coefficients	Univariate F Tests (1, 20)	p<
Restricted Exophoric Reference	- .024	.419	3.10	.09
Reference	- .377	- .050	0.04	.84
Ellipsis	.447	.437	3.95	.06
Conjunction	- .198	- .231	0.65	.43
Lexical Cohesion	- .987	- .820	18.64	.001

Table 16

Cohesion MANOVA (Transformed Variables)
in Writing by Sex and Observation for Suburban School

Source	df	dfHYP	dfERR	F	p<
Between Subjects	11				
Sex (A)	1	5.00	6.00	4.91	.04
S/A	10				
Within Subjects	24				
Observation (B)	2	10.00	32.00	2.85	.01
		4.00	16.50	1.64	.21
Sex X Observation (AxB)	2	10.00	32.00	1.04	.44
		4.00	16.50	1.10	.39
SB/A	20				
TOTAL	35				

Table 17

Discriminant Analysis and Univariate ANOVAs
on Use of Cohesion Categories in Writing at Suburban School for Observation

Cohesion Category	Standardized Discriminant Analysis Weights	Structure Coefficients	Univariate F Tests (2, 20)	P≤
Restricted Exophoric Reference	.811	- .210	0.30	.75
Reference	.934	.844	7.68	.003
Ellipsis	.680	.410	3.74	.04
Conjunction	1.40	.337	1.56	.23
Lexical Cohesion	1.91	.733	11.05	.001

An examination of the structure coefficients and the ANOVAs indicated that three major variables were responsible for the discrimination among observations. More specifically, the use of reference was the major contributor for the discrimination. The use of lexical cohesion, followed by the use of ellipsis, were the other two major contributing variables.

The mean differences for the use of reference (see Table 7) reflects a steady decrease across the three observations (65%, 41%, and 36%, respectively). For the use of lexical cohesion, a steady increase over the observations can be seen (29%, 39%, and 50%, respectively). The use of ellipsis, the third major important variable contributing to the observation differences, was nonexistent in observation one, increased to an average of 3% in observation two, and then decreased to only 1% in the last observation.

An examination of the group means on the discriminant function indicates separation among the three observations: observation one, $X = 8.92$; observation two, $X = 10.40$; and, observation three, $X = 10.76$. The sharpest discrimination occurs between observations one and three. Observation two falls between these extremes, but is more similar to observation three.

Sex factor follow-up. The significant sex factor was followed up by performing five univariate ANOVAs on each of the cohesion categories. Table 18 presents these univariate follow-ups. These analyses indicated that only the dependent variables of ellipsis and lexical cohesion were significant. An examination of the mean differences for the sex groups on these two variables (see Table 7) revealed that in their writing, the girls used a significantly higher proportion of both, ellipsis, and lexical cohesion devices, than did the boys.

The girls relied on ellipsis for 3% of their cohesive ties, whereas the boys did not use this text forming option in their written texts.

The use of lexical cohesion comprised 46% of the girls' cohesive options, but only 33% of the boys'.

Overview of Discussion

Discussion of the cohesion results will be organized in the following way. A major focus of the study was to describe the development of children's writing in terms of their use of cohesive devices to form texts. Thus, the discussion section will begin with an interpretation of changes in the use of cohesive ties over observations, a factor for which significant differences were obtained for all three of

Table 18

Mean Squares, F-Values and Levels of Significance for Cohesion Categories (Transformed Variables) in Writing at Suburban School for Sex Factor

Factor	df	Restricted Exophoric Reference			Reference			Ellipsis			Conjunction			Lexical		
		MS	F	p<	MS	F	p<	MS	F	p<	MS	F	p<	MS	F	p<
Sex (A)	1	0.007	2.22	.17	0.067	1.56	.24	0.006	30.83	.001	0.044	3.32	.10	0.145	5.23	.05
Error Term (S/A)	10	0.003			0.043			0.000			0.013			0.028		

the analyses--urban school, school replication, and suburban school. Over observations, increased use of lexical cohesion was the most consistent feature in children's writing development. The increased use of lexical cohesion will be addressed first. There also were persistent sex differences in the use of lexical cohesion in all three analyses. These differences will be discussed next.

The discussion will return to development for an interpretation of the emerging role of conjunction as a text-forming strategy in writing. Conjunction was an important contributor to developmental differences in two of the three major analyses.

Following the section on conjunction, the roles of other cohesive categories of writing development will be discussed. Then, differences in patterns of development, arising from school context and socio-economic class/dialect, will be examined. Finally, an attempt will be made to wrap up these varied interpretations in a summary of major conclusions.

Discussion

As children at both schools learned to compose written texts, one of the more important transitions they made was to abandon the familiar supportive elements of face-to-face dialogue--context and paralinguistic meaning--for the lexically-rich abstractions of literacy. Unlike face-to-face interactions with their intimacy and shared perceptual context, school texts are oriented toward both graphic language and increasingly disembedded contexts (Donaldson, 1978). These texts can be expected to become ever more packed with lexical meaning (Ure, 1971) as the text becomes the relevant environment for establishing all necessary meaning relations. The most consistent finding in this study is related to this notion. Over the 16-month period of the study, encompassing the latter half of first grade and the entire second grade, children from these two schools increased their use of lexical cohesion dramatically, irrespective of social or linguistic background. All three analyses of cohesion writing data demonstrate this movement. At the urban school, 14% of their ties were achieved through lexical cohesion midway through first grade. But this percentage increased early in second grade to 29% and then, to 37% by the end of grade two. At the suburban school, the use of lexical cohesion increased across these three observations, from 29% to 39%, and then to 50% The third analysis examined the cohesive patterns in written texts, produced by nonvernacular-speaking children from both schools. They showed a similar increase in the use of lexical cohesion over the period of the study--from 22% to 34%, and then to 41%.

In all probability, increased skill in lexicalizing textual meanings was accompanied by more extravagant use of lexical devices to achieve cohesion.

At some risk, it is possible to speculate on two different explanations to account for the pervasiveness of lexical cohesion, both earlier and later, in the 16-month interval the children were studied. Lexical ties in early texts may have reflected, to some extent, a form of hypercohesion which was achieved through extensive use of lexical reiteration. Lexical ties, later in development, may reflect a growing capacity for employing multicohesive lexical options to achieve cohesive ties. In the case of hypercohesion, lexical ties are used to underscore clearly the cohesive relation of co-referentiality; for example, children sometimes relied upon "extra" cohesive ties, involving lexical reiteration. The following example illustrates this tendency.

(1) a monster was up in a planet
(2) he was chasing a rocket
(3) it was the same planet
(4) some rockets were surrounding the planet

The function of unit (3) appears to be one of establishing unequivocally the co-referentiality of "planet," expressed in unit (1), before further reiteration is attempted in unit (4). This example indicates a problem--and a very subtle one--that children have in establishing lexical relations. The problem is that the lexical item "planet" has an identity role to play, as well as a potential cohesive function. This child appears to have solved the problem of dual function by overmarking the cohesive relation. In unit (4), then, the child unhesitatingly employed definite reference coupled with a lexical tie, when using only the latter would have sufficed.

Multicohesion is a term which signifies that children use lexical options simultaneously (reiteration, hyponymy, co-hyponymy, synonymy, antonymy, and meronymy) to achieve multiple cohesive ends. The following excerpt will be presented to illustrate these semantic options. This excerpt is from a longer text and will be presented in the same order as in the original text, but intervening units will be omitted from the example. Unit numbering, however, will be preserved to convey a sense of length.

(1) once there was a little hamster named Dancer
(8) Dancer ran all around the house
(9) then someone opened the door
(10) she skitter-scattered out of the house
(14) when she was outside she made lots of friends
(18) Toby the tomcat was her best friend
(19) she met Bom Bom the bird and Tommy the tiger

This excerpted text is from a sample of protocols collected at the end of second grade, what has been referred to throughout this report as observation three. While there are several sets of lexical ties in this text that might be discussed, for the sake of brevity, only one will be examined in detail. In unit (14), the category, "friends," is established. The lexical tie of reiteration is established with "friend" in unit (18), which is coupled with the hyponym, "Toby the Tomcat," and

further expanded in unit (19), with "Bom Bom the bird" and "Tommy the tiger," both functioning as co-hyponyms of "Toby the Tomcat," in unit (18). These lexical ties are thus multicohesive and presumably extrordinarily elastic.

There is a third possible explanation for the prevalence of lexical cohesion in children's texts. Lexical cohesion is open ended. These ties derive from the lexical organization of the language. Both semantic and lexical aspects of the lexicon permit the establishment of a broad range of lexical ties through reiteration, synonymy, antonymy, meronymy, hyponymy, and metonomy. With lexical cohesion, the potential exists for establishing relations among the many dimensions of the lexicon. The selection of particular cohesive devices to achieve presuppositional relations through lexical cohesion rests upon the availability of a given meaning in a child's lexical inventory. Thus, rate of acquisition of word meanings presumably bears upon the question of what kinds of ties children are likely to employ in achieving cohesive relations.

In developing a vocabulary, children appear to fill in some semantic fields earlier than others. Simple terms appear to be acquired earlier than complex terms, particularly where the meaning of a simple term forms the core of a more complex one (Clark, 1973; Bowerman, 1976). In other semantic fields, order of vocabulary acquisition may be a product of exposure and experience. In still other fields, order of acquisition may depend upon the development of underlying logical structure as a precursor to comprehension and production of a particular term. In any case, varied inventories of meanings may be expected from one semantic field to another. These varying inventories may, in turn, affect the distribution of cohesive ties among at least three of the five categories of cohesion: reference, conjunction, and lexical cohesion. It may be the case that lexical cohesion is more prevalent in children's early written texts simply because children have a larger inventory of lexical tokens to draw upon and a more restricted inventory of conjunctions and reference items from which they may select. Lexical cohesion may rest upon a developmentally advanced base.

One set of findings, however, lessens the force of this conclusion. Females in our sample of children used proportionately more lexical cohesion than males. The magnitude of these sex differences, across all comparisons, was substantial, with girls averaging 11% to 16% more lexical ties than boys. No analogous differences were obtained for conjunction and reference. If lexical cohesion is more prevalent in children's written texts because of larger inventories of lexical tokens, the disparity between boys and girls for lexical cohesion would have to be accounted for by substantial differences in rate of vocabulary acquisition favoring girls. In recent reviews of studies dealing with variation in language acquisition (Cherry, 1975; Wells, 1979), differences in rate of acquisition have been called into question because such differences seldom have achieved statistical significance. To accept the conclusion that the prevalence of lexical cohesion in children's written texts stems from a developmentally advanced lexical

base for lexical ties, such acceptance would necessarily entail acceptance of the presumption that vocabulary is inordinately constrained by sex, from ages six through eight. An advanced developmental base, in given semantic fields, may indeed account, in part, for the prevalence of lexical cohesion early in writing development. But it is equally likely that other factors, such as hypercohesion and multicohesion, play important roles in explaining our findings.

In addition to lexical cohesion, conjunctions were employed more often at the end of grade two, than they were at the outset. Averaging about 4% in grade one, children at the urban school increased their use of conjunctions, as contributors to texture, by about 5% during each of the other two observation intervals (i.e., up to 10% and 15%, respectively). The school replication analysis, which included children from both the urban and suburban schools, indicated an increased use of conjunctions as well: from 10%, in the middle of first grade, to 15% and 16%, in the two observations of second grade. Thus, conjunctions apparently played a significant role as a text-forming strategy for these children.

Children used conjunctions immoderately but pointedly to achieve a variety of textual ends. Though their use of conjunctions may have been primitive, and perhaps uncultivated, children laced the fabric of their texts with conjunctions, using them to link clauses, as they struggled to sustain the network of meanings they were building. With persistence, they packed a variety of meanings into just a few conjunctions, seeking to loosely knot disparate strands of meaning to a textual core (Rentel, Pappas, Pettegrew, and King, 1980). To connect sets of meanings, children appeared to use a strategy of settling for one of a few readily available conjunctions--for example, "and." They let the burden of interpretation rest on lexical props and the inferential generosity of the audience to achieve whatever precision was required or desired.

For example, the conjunction "and" ordinarily is used to achieve coordination and the cohesive relation additive. That is, when "and" is used as a cohesive tie following a full stop, it seems to mean, "Add this to what has already been said." Children depend heavily on ties of this sort. The following excerpt illustrates this relation.

(1) once there were these bombers
(2) and they tried to destroy this bridge
(3) and they had airplanes and bombers

The sense of "and" in this excerpt is: "Add this and this to what has been said." The next unit that followed in this text also began with "and."

(4) and they could not reach it

As used in unit (4), "and" seems to mean, "Although the bombers tried to destroy the bridge, they could not reach it." The cohesive relation,

adversative, is embodied in this use of "and." Used this way, "and" corresponds to the "although" clause in a hypotactic structure. Here, the normal cohesive form is "yet," but "and" also is used commonly to achieve this relation. "And" appears to be the first of these adversative contrastives to emerge in text.

Later in development, precision replaced expedience as both, an expanding repertoire of conjunctions, and a deepening reservoir of meanings (Clark, 1979) were available. (For example, in observations one and two, only the conjunctions, "and," "but," "so," and "then" could be found in the children's writing. But, by the end of second grade, in addition to these conjunctions, "because," "soon," "although," "or," "now," "plus," and "still" had been added.) But the all-important capacity to sustain a text had been well served by this strategy. A more detailed account of synergistic use of the conjunction "and" may be found in Chapter 6.

Further, there is considerable evidence (Clancy, Jacobsen, and Silva, 1976; Cromer, 1976) that, during the period of early schooling, children have juxtaposed a reasonably complete series of understandings about coordination, subordination, causality, antithesis, and sequence, with evolving notions of conditional and temporal statements, children also develop individual strategies for using these understandings, but they require organization into a working system of relevant cohesive options. Increases in the proportions of conjoined cohesive ties, seen over observations, indicate that such a system has begun to emerge in writing by the end of second grade.

The cohesive devices discussed thus far in this chapter represent the case in which the presupposed element of a tie resides in a sentence preceding the presupposing member of the relationship. Such ties are either anaphoric--backward pointing, or cataphoric--forward reaching. Both are endophoric, that is, confined to the text. There are, however, cases where the presupposed item is not to be found in the text. To identify the presupposed item, recourse must be made to some aspect of the environment in which the text is embedded. Such a tie is exophoric and it may be interpreted only via the extratextual environment. As noted in Chapter 1, there are several varieties of exophoric presupposition. When an exophoric tie involves reference to a referent whose identity cannot be determined on the basis of the text provided, but instead, depends upon some degree of shared knowledge of a limited or restricted kind, then texture and comprehensibility suffer. Children, quite reasonably, can be expected to carry over into the writing situation a presumption of shared perceptions and familiarity--even to the point of intimacy. With such presumptions, exophoric reference can be regarded as wholly predictable at the outset of writing, but, less likely, as children learn to orchestrate their resources for indirect communication. Thus, as children free their texts from situational constraints, restricted exophoric references should diminish in frequency. And such was the case in the writing children produced over the 16-month span at the urban school. Of the total ties

in their written texts, 34% were references of the restricted exophoric variety at the time they were first observed in the middle of grade one. This percentage declined abruptly to 3% by the second month of their second year in school, and remained at approximately that level (5% through the third observation, near the end of grade two.

Reference, whether exophoric or endophoric, is a form of verbal pointing. Clearly this diminishing use of restricted exophora demonstrates that children at the urban school had shed their dependence on situational constraints and had learned to address the text itself as the relevant environment for establishing intention and meaning. They rarely referred to the context of situation, but stayed fairly consistently within their texts. At the outset, children were prone to use reference in the following way: "He jumped out of bed and went to the river. She had fun." Identification of the ultimate referent was not possible from the information given. Who was "he?" What "river?" And who was "she?" The example, though fabricated, was typical of the kinds of restricted exophoric reference found in the early texts children wrote. Later, as communication in graphic language superseded the situation as the relevant environment for layering meaning in a text, children in the urban school produced increasingly lexicalized texts. They were marked by proportionately less exophoric reference and more intrinsic endophoric reference.

There were significant differences in the proportion of reference ties employed by nonvernacular, middle class children, over the proportion used by vernacular-speaking, lower class children. Overall, in the texts produced by children at the urban school, 46% of the cohesive devices employed by nonvernacular-speaking children were reference ties. Vernacular-speaking children, on the other hand, used reference as a text-forming strategy 24% of the time. These findings for reference, when taken in conjunction with those for ellipsis, the other variable which contributed significantly to the discrimination for the dialect/socio-economic class factor, suggest an underlying difference between the text-forming strategies employed by the two groups of children. Ellipsis constituted 4% of the nonvernacular children's cohesive ties, but was utilized, even more sparingly by some, and not at all, by most vernacular-speaking children. What is more important, however, is that the two variables together, reference and ellipsis, described a construct which characterized the texts from these two groups of children as essentially different. Their texts were not different in terms of being more or less cohesive, because, in either case, the ties were endophoric and text-forming. Instead, they were predicated upon different proportions of cohesive devices which were used to achieve the same textual ends. When these relatively stable differences over time are contrasted with conjunction and lexical cohesion, both of which increased significantly over the 16-month period, and restricted exophoric reference, which fell dramatically between first and second grade for all the urban children, a style difference in text-forming strategies between the groups is suggested for reference and ellipsis. The sorts of microscopic analyses of specific reference devices, text

genres, and types of ellipses that children employed, remain to be done. Thus, a detailed description of these style distinctions is not possible at present. Yet, the pattern is sufficiently robust to identify reference and ellipsis as potential orgins for style differences. Moreover, if the pattern holds, further detailed analyses will add delicacy rather than substance to the distinction.

The patterns and distributions of restricted exophoric reference, lexical cohesion, and conjunction, in the urban school, imply a converging developmental construct. Structure coefficients in the discriminant analysis for observations in the urban school, as well as standardized discriminant weights and group means plotted on a linear representation of the discriminant function, indicate that both groups of children in the urban school had come to bear a closer resemblance to each other by the end of second grade. Both the nonvernacular middle class children and the vernacular-speaking lower class children steadily increased the proportion of lexical devices they employed over the 16-month interval. A similar pattern was evident in the increasing proportion of conjoined ties in their written texts, while the proportion of restricted exophoric devices employed by both groups dropped steeply by the beginning of second grade and remained roughly at that level through the end of second grade. The sharpest discrimination was between observations one and three, with observation two more closely paralleling observation three. By the end of grade two, children's written texts had become more highly lexicalized, more consistently endophoric, and more broadly textured.

Before turning to the suburban school, it should be noted that middle class, nonvernacular-speaking children at the urban school differed from their counterparts in the suburban school in the proportion of lexical ties employed in their written texts. Mean differences between the two populations indicated that the use of lexical cohesion was higher in the suburban school (.40) than in the urban school (.25). These differences reflect, in all probability, increased lexicalization, accompanied by greater proportions of lexical ties in the texts produced by these suburban children. The proportion of lexical ties employed by urban children was consistently lower than the proportions employed by suburban children across all three observations, even though both groups of children increased their proportion of lexical ties significantly over this 16-month period. These differences cannot be attributed to atypical scores in either population, for as shown in Table 6, standard deviations for the urban school (.18) were extremely close to the standard deviations for the suburban school (.17). Because these differences were present in the two populations from the middle of first grade (urban: M = .16; suburban: M = .29), when the first observation was made, and were maintained through the last observation, at the end of second grade (urban: M = .33; suburban: M = .50), school characteristics alone do not give an adequate account of differences in the proportions of cohesive ties found in these two sets of texts. It is improbable that the beginning six months of schooling was responsible for these differences. More likely, the explanation may reside in the fact that

children from the suburban school represented a slightly higher stratum of the middle class distribution. As reported in Chapter 2, the mean score and standard deviation on the Index of Status Characteristics for suburban children was: $\underline{M}$ = 32.25, $\underline{SD}$ = 4.41. The mean score and standard deviation for urban children was: 38.33, $\underline{SD}$ = 7.79. When compared using the $\underline{F}$ statistic, the two groups were significantly different: $\underline{F}$ (1, 20) = 5.39, $\underline{p} < .05$. Differences in mean proportions of lexical cohesion were, at least in part, a reflection of these social class differences and not a result of school differences alone.

In addition to increases in proportions of lexical cohesion over observations, the discriminant function analysis for the school replication indicated that conjunctions also contributed to the discrimination, with the greatest increases occurring between first and second grade, that is, observations one and two. These increases in conjoined cohesive ties probably reflect, as observed earlier, increased understanding of coordination, subbordination, antithesis, sequence, causality, temporal notions, and conditional relations, buttressed by a wider repertoire of conjoining options (Clancy, Jacobsen and Silva, 1976).

Sex differences were obtained in the replication study for lexical cohesion and ellipsis, with girls using larger proportions of both in their written texts. As noted earlier, these differences in lexical cohesion between boys and girls were probably best accounted for in terms of well known, rate-of-acquisition differentials for language development, which normally favor girls. For ellipsis, however, this explanation did not hold. Inspection of means for ellipsis in Table 6 indicated that boys in the suburban school were atypical. Just one subject accounted for all ellipsis in observation two. And the same subject, along with one other, accounted for all elliptical devices used in observation three. Girls in the suburban school, on the other hand, were very similar to both boys and girls in the urban school. Even though these three subgroups employed ellipsis sparingly, the groups used comparable proportions of elliptical ties. Given these anomalous facts, no reasonable interpretation of the sex differences in the replication study were tenable.

Because the replication study indicated significant differences between the urban middle class nonvernacular speakers, and their suburban counterparts, for proportions of lexical cohesion in their written texts, caution dictated a separate analysis of the cohesive strategies employed by the suburban children. As noted earlier, the suburban children's scores on the Index of Status Characteristics were significantly lower than the urban children's scores--lower scores reflecting higher socio-economic status. The Index of Status Characteristics, the socio-economic scale employed in the study, has a range of, from 12 weighted points, to 84 weighted points. While statistically, the urban and suburban means differed (38.33 and 32.25 respectively), both fell squarely within the range of scores identified as "middle class" by this scale. It is doubtful that the scale has sufficient discriminability to make too much of a case for the significant finding of differences

between the two populations of children. But, given the descriptive nature of this study, a very conservative stance has been adopted. Therefore, both socio-economic class and school differences were treated as if confounded when, indeed, they may not have been.

In many respects the curriculum outlook of the suburban school was similar to that of the urban school. The suburban school's first grade, like the urban school's, was premised upon an alternative "open school" concept, but the two schools differed dramatically in terms of space utilization and instructional organization. Each first grade class in the suburban school was self-contained. And, in contrast with the urban school, fewer pupils were accomodated in much smaller, more manageable physical areas, even though the two schools had very similar goals and instructional philosophies.

The suburban school was located in the oldest suburb of the city--a neighborhood that, by conservative standards, would be considered well-appointed. Children from the suburban school lived within walking distance of the school. In contrast with the urban school, the first grade population of the suburban school was distributed rather narrowly on the Index of Status Characteristics, with scores ranging from 25 to 40. Scores in the urban school ranged from 31 to 61 for the middle class population, and from 31 to 79 for the entire first grade population.

Thus, even though the two schools held a common curricular outlook, they differed considerably in population homogeniety and instructional organization. School differences, as opposed to population differences, were interpreted cautiously. In all probability, both school and population differences were sufficient to warrant separate analyses and interpretations for the suburban school data.

In the suburban school, girls produced a significantly higher proportion of ellipsis and lexical cohesion in their written texts than did boys. In fact, just two boys accounted for all elliptical ties produced by boys in the suburban school. And, while all the girls in the suburban sample used ellipsis as a text-forming strategy, they did so mainly at the beginning of second grade, suggesting the possibility of a genre-based origin for these ties. Inspection of the written texts for observation two, indicates that girls used ellipsis frequently in dialogue between characters. Boys' texts, on the other hand, with one exception, appeared to contain much less dialogue and more action or adventure elements in their story plots.

Thus, differences in the proportions of ellipsis employed by girls and boys may be related to genre preferences. Conversely, differences in proportions of lexical ties, differences that favored girls, more than likely reflected a faster rate of development for girls. Inspection of the means in Table 7 shows that, over observations, these differences were narrowing. Over the three observations, mean lexical cohesion proportions for boys were, . , .35, and .47, respectively. For girls

the proportions were, .41, .44, and .52. While, indeed, there were overall differences between boys and girls in their proportional use of lexical ties, the differences between them were fast disappearing.

Across observations, the discriminant function on the suburban school cohesion data indicated that reference was the major contributor to the discrimination, followed by lexical cohesion and ellipsis. Mean differences in the use of reference as a proportion of cohesive ties, indicates a steady proportionate decrease over observations. Text length, however, increased significantly over observations. Correspondingly, on average, the number of reference ties increased from 2.08 to 23.85 ties. The proportionate decrease for reference probably reflects greater precision and economy of use, rather than less reliance on reference as a text-forming strategy.

As argued earlier, in the discussion of findings for the urban school, proportionate increases in lexical cohesion indicate both, the growing depth and breadth of vocabulary development in these children, as well as the versatility and power of lexical cohesion as a text-forming strategy.

Lexical cohesion is open-ended. It derives from the lexical organization of the language, which has both semantic and lexical aspects. The semantic aspects of lexical cohesion permit the establishment of a variety of relational ties: reiteration, synonymy, antonymy, hyponymy, meronymy, and metonymy. Lexical aspects, though, are an endless iteration of the many dimensions of the lexicon. The orchestration of these lexical devices into relational harmony may be one of the essential elements of text coherence (Hasan, 1978, Pappas, 1981). It is, in both senses--semantic and lexical--that these proportional increases in lexical cohesion must be interpreted.

Lexical aspects of lexical cohesion coupled with reference, establish relations of identity in a text (Hasan, 1978). Each member of the set refers to the same person, thing, event, and so forth. These sets impose limits on the text--its identity. Semantic aspects of lexical cohesion specify the classes and related classes to be found in a text, that is, the semantic field of a text. Proportionate increases in lexical cohesion indicate both, an increasing capacity to specify classes and related classes of information in concert, and the ability to achieve various textual ends in a genre which children are achieving increasing control over.

Ellipsis, the remaining variable that contributed to the discrimination among observations, as noted above, may have reflected a style variable associated with dialogue in stories. Nevertheless, such an interpretation is more possible than probable, and stems from the concentration of ellipsis at observation two, the point at which dialogue, associated with elliptical ties, occurred. No causal link was inferrable from this association.

Summary of Cohesion

Lexical cohesion plays an interesting and important role for children, in their efforts to tie together the threads of meaning in their written texts. As their ability to lexicalize meanings broadens and deepends, they become more adroit in their use of lexical ties. At the very earliest stages of writing development, children appear to underscore the cohesive relation of co-referentiality through the use of reiteration. In these cases, where a lexical item has a dual role to play--for example, an identity role, as well as a potential cohesive function--children appear to solve the problem of dual function by overmarking the cohesive relation. Later in their development, these hypercohesive ties diminish as a useful strategy, and children appear to discover the versatility of lexical ties as a means of establishing textual relevance through synonyms, antonyms, hyponyms, meronyms, and reiteration. Early in writing development, boys and girls differ considerably in their ability to utilize lexical cohesion as a text-forming device; by the end of second grade, they appear to be almost, equivalent in their use of this resource. The early superiority of girls gradually tapers off but does not disappear altogether.

Children also grow dramatically in their ability to confine their reference ties to the text itself. Exophoric reference drops sharply at the beginning of grade two. Endophoric reference also decreases, but this decline appears to be related to greater precision and economy in the use of reference. The same pattern of versatility, precision, and organization, into a working system of cohesive options, was typical of children's maturing control over conjunctions as text-forming devices. Initial use of conjunctions in writing is marked by reliance on a few conjunctions to achieve a variety of ties between clauses. Later, this imprecision gives way to more disciplined and less provisional use of conjunctions. Coordination, subordination, causality, antithesis, and crisper notions of sequential, temperal, and conditional relations are used more definitively and less equivocally. By the end of second grade most children are able to define conjunctive relations explicitly.

Earlier differences, between lower class vernacular speaking children and nonvernacular speaking middle class children, all but disappeared. What remains as variation, probably is best described as style variation in proportions of reference and ellipsis. Consistent proportional differences in the use of these two devices stems from greater use of lexical cohesion and less use of reference on the part of vernacular-speaking lower class children, while the opposite holds for middle class urban children. By and large, however, over the 16-month period of the study, the text-forming strategies of these two groups of children become increasingly comparable. With the exception of lexical cohesion, the same gradual reduction of differences between the entire urban and the suburban populations occurs. And even the difference in lexical cohesion between the two populations diminishes substantially by the end of grade two.

Clearly, children have acquired a wide range of cohesive options and a reasonably well organized set of systematic options for utilizing those strategies in the formation of cohesive fictional narratives. By the end of grade two, their cohesive ties are routinely endophoric. They employ substitution and ellipsis sparingly. Conversely, they are unhesitant in their use of lexical cohesion, conjunction, and reference. Restricted exophoric reference has all but faded completely from their texts. In short, so far as cohesion is concerned, their transition from oral to written texts, while not complete, is well under way by the end of second grade in the sample of children investigated in this study.

Chapter 4

Results and Discussion: Story Structure

Number of functions, types of functions, and moves provided the operational definitions of story structure in these analyses. Number of functions was assumed to reflect the reach of a text and the sustaining power of its composer while number of function types, the breadth of a text and the range of its composer. The number of moves was assumed to index the complexity or dimensionality of a text. That is, the number of moves was assumed to indicate the ability of a composer to balance successive and simultaneous threads of discourse. These indices were operationalized and coded, and frequencies were tabulated for each text in the corpus.

Overview of Results

In writing, both the numbers of functions and function types increased significantly over observations. Over a period of 16 months, the children in this study were able to write increasingly more ambitious stories which contained a wider range of functions (charactrers and actions) and a greater number of functions. Retellings for middle class children also contained a significantly wider range of functions by the time these children reached the end of grade two. Over and above the range of function types contained in the stories children heard, differences in their retellings of the stories reflected an increment of growth attributable to their increased ability to comprehend and recall elements within stories. For middle class children, there were neither differences over observations in their dictated stories, nor were there differences over observations in the dictated stories produced by lower class children.

On the whole, middle class children incorporated a significantly larger number of functions and function types in their dictations and retellings than did lower class children. Middle class boys and girls did not differ from each other, but were significantly different from their lower class counterparts in the number of functions they included in their retelling texts. On the other hand, lower class boys included significantly fewer function types in their retellings than middle class boys and girls; but lower class girls did not differ from either, lower class boys, or middle class boys and girls, in the number of function types they included in their retellings. For dictations, only middle class girls differed significantly from their counterparts in all groups on a range of function types. All children included significantly more function types in retellings than in dictations, but only middle class children included significantly more functions in their retellings than they did in their dictations. There were no differences between the two modes for lower class children when the number of functions was the dependent variable.

There were no overall school differences when middle class subjects in the two schools were compared. Within each school, boys did not differ significantly from girls, either in the number of functions, or in the number of function types they included in either dictations or retellings. In both schools, boys and girls produced significantly more functions and function types in their retellings than they did in their dictations. There was only one difference between the two schools: suburban girls included a significantly wider range of function types in their retellings than did urban girls.

Only one significant difference was obtained, that being for the dependent variable, moves. Middle class children produced more complex stories than their lower class counterparts.

Results

First, a two between-subjects, two within-subjects multivariate analysis of variance was performed on the story structure data from the urban school, comparing dialect, socio-economic class, sex, modes of discourse, and observations. Results of the MANOVA using Wilk's lambda (likelihood ratio) criterion expressed by Rao's F transformation, are shown in Table 19. The F statistics from the MANOVA indicate significant effects for the dialect by sex by mode interaction, F (3, 18) = 4.50, p < .02, and significant effects for the dialect by mode interaction, F (3, 18) = 9.82, p < .001. Table 19 also reveals significant main effects for dialect: F(3, 18) = 5.72, p < .006; for mode: F (3, 18) = 49.96, p < .001; and for observations, where both roots were significant: F (6, 76) = 8.30, p < .001; F (2, 38.50) = 4.63, p < .02. All of these significant multivariate test statistics were followed up by performing univariate analyses of variance (ANOVAs) on each of the three story structure dependent variables.

Follow-up ANOVAs on Functions for the Urban School

Table 20 displays the follow-up univariate ANOVAs on functions for the significant multivariate test statistics resulting from the MANOVA on the story structure data at the urban school. An examination of Table 20 indicated that these univariate test statistics were significant for all factors except observations.

Table 21 presents the means and standard deviations for functions, according to dialect, sex and mode.

Table 19

Story Structure MANOVA for the Urban School by Dialect, Sex, Mode, and Observation

Source	df	dfHYP	dfERR	F	p <
Between Subjects	23				
Dialect (A)	1	3.00	18.00	5.72	.006
Sex (B)	1	3.00	18.00	0.47	.70
Dialect X Sex (AxB)	1	3.00	18.00	0.54	.66
S/AB	20				
Within Subjects	120				
Mode (C)	1	3.00	18.00	49.96	.001
Dialect X Mode (AxC)	1	3.00	18.00	9.82	.001
Sex X Mode (BxC)	1	3.00	18.00	1.31	.36
Dialect X Sex X Mode (AxBxC)	1	3.00	18.00	4.50	.02
SC/AB	20				
Observation (D)	2	6.00	76.00	8.30	.001
		2.00	38.50	4.63	.02
Dialect X Observation (AxD)	2	6.00	76.00	1.15	.34
		2.00	38.50	0.53	.60
Sex X Observation (BxD)	2	6.00	76.00	0.61	.72
		2.00	38.50	0.17	.84
Dialect X Sex X Observation (AxBxD)	2	6.00	76.00	0.61	.72
		2.00	38.50	0.63	.54
SD/AB	40				
Mode X Observation (CxD)	2	6.00	76.00	1.77	.12
		2.00	38.50	1.33	.28
Dialect X Mode X Observation (AxCxD)	2	6.00	76.00	0.37	.90
		2.00	38.50	0.16	.85
Sex X Mode X Observation (BxCxD)	2	6.00	76.00	1.20	.32
		2.00	38.50	0.43	.65
Dialect X Sex X Mode X Observation (AxBxCxD)	2	6.00	76.00	1.68	.14
		2.00	38.50	1.09	.35
SCD/AB	40				
TOTAL	143				

Table 20

Follow-up Univariate ANOVAs on Functions for Significant Multivariate Test Statistics from the Urban School MANOVA

Factor	df	MS	F	P <
Dialect (A)	1	1167.32	14.02	.001
Error Term (S/AB)	20	83.25		
Mode (C)	1	1393.74	85.43	.001
Dialect X Mode (AxC)	1	90.25	5.53	.03
Dialect X Sex X Mode (AxBxC)	1	93.44	5.73	.03
Error Term (SC/AB)	20	16.31		
Observation (D)	2	50.58	1.92	.16
Error Term (SD/AB)				

Table 21

Means and Standard Deviations of Functions by Dialect, Sex, and Mode for Urban School

Dialect	Mode	Sex	M	SD
Vernacular			9.81	4.97
	Retelling		7.49	5.65
		Males	8.22	5.08
		Females	11.39	4.45
	Dictation		5.17	5.39
		Males	3.94	3.11
		Females	6.39	6.84
Nonvernacular			13.18	7.19
	Retelling		17.08	4.51
		Males	18.50	2.92
		Females	15.67	5.40
	Dictation		9.28	7.29
		Males	7.83	6.40
		Females	10.72	8.01
	Overalls:			
	Retelling		13.44	5.97
	Dictation		7.22	6.69

To determine the nature of the significant second-order interaction of dialect X sex X mode, Tukey post-hoc tests were employed. These comparisons indicated that both, vernacular, and nonvernacular boys and girls, included significantly more functions in their retellings than in their dictations, as shown in Figure 3. There were no differences within dialect groups, as a function of sex, for either retelling or dictation: vernacular boys and girls did not differ significantly from each other in either dictation or retelling; nor did nonvernacular boys and girls.

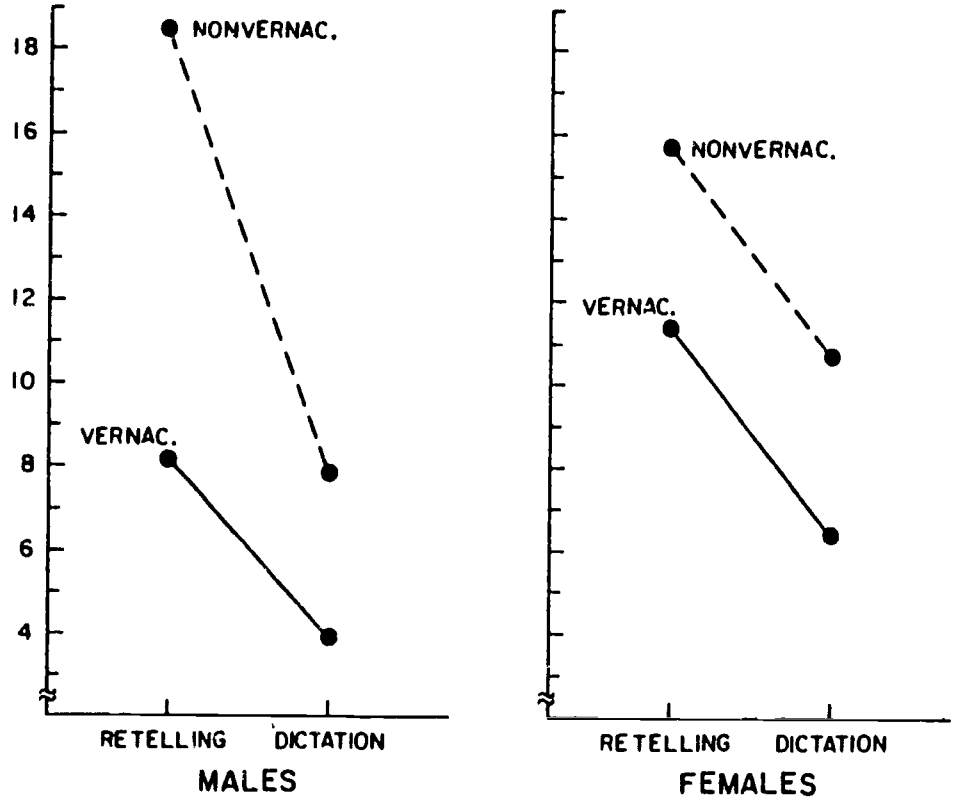


Figure 3: Vernacular-Nonvernacular by Retelling-Dictation Interaction for Males on Functions for Urban School

On the other hand, nonvernacular boys included significantly more functions in their retellings than did vernacular boys or girls, but they did not differ significantly from their vernacular counterparts in the number of functions they included in their dictations. Nonvernacular girls, however, were significantly higher than vernacular girls and boys in the number of functions they included in both their retellings and dictations.

Since a similar pattern existed for dialect X mode at levels of sex, (see Figure 3), Tukey post-hoc techniques were employed to examine the nature of the significant first-order dialect X mode interaction factor (see Table 20).

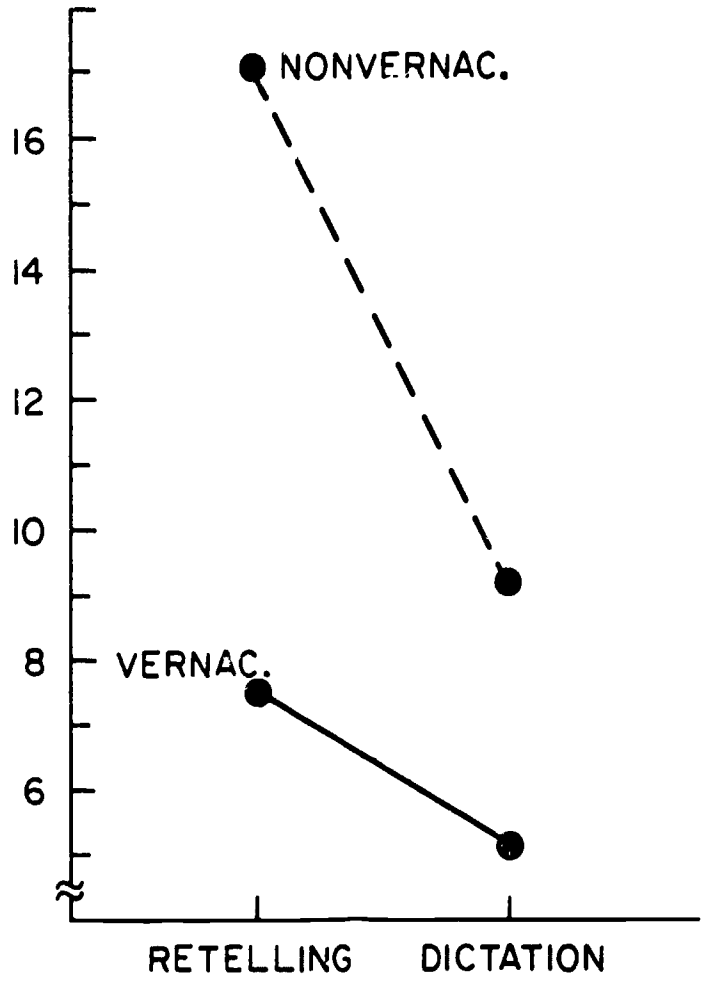


Figure 4: Dialect by Mode Interaction on Functions for Urban School

This dialect by mode interaction is graphed in Figure 4. Nonvernacular subjects had a significantly higher number of functions in both, their retellings and their dictations, than did the vernacular subjects as shown in Table 21. And, while nonvernacular subjects' retellings were significantly higher than their dictations, there were no differences between the two modes for vernacular children.

As shown in Table 20, the follow-up ANOVAs on the functions dependent variable indicated two significant main effects--one for dialect: F (1,20) = 14.02, $p < .001$; and one for mode: F (1,20) = 85.43, $p < .001$. Significantly more functions were incorporated into texts produced by nonvernacular children, as shown in Table 21. They averaged eight functions more than their vernacular counterparts. Table 21 also indicates that retellings had significantly more functions than dictations.

Follow-up ANOVAs on Function Types for Urban School

Univariate ANOVAs on function types, following up the significant multivariate test statistics of the story structure MANOVA at the urban school (see Table 19), are presented in Table 22.

Table 22

Follow-up Univariate ANOVAs on Function Types for Significant Multivariate Test Statistics from Urban School MANOVA

Factor	df	MS	F	P <
Dialect (A)	1	403.34	17.01	.001
Error Term (S/AB)	20	23.72		
Mode (C)	1	1050.81	125.12	.001
Dialect X Sex X Mode (AxBxC)	1	119.17	14.19	.001
Error Term (SC/AB)	20	8.40		
Observation (D)	2	48.34	5.63	.007*
Error Term (SD/AB)	40	8.59		

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) was significant at $p < .05$.

As observed above for functions, Table 22 shows a significant dialect by sex by mode interaction for function types: F (1,20) = 14.19, $p < .001$.

Table 23 displays the means and standard deviations of function types. For the second-order interaction, Tukey post-hoc comparisons of cell means indicated that, for dictations, there were no differences between dialects as a function of sex. But, as shown in Figure 5, in retellings, nonvernacular girls and boys included significantly more function types in their texts than did vernacular boys. There were no significant differences in function types between nonvernacular boys and vernacular girls, on their retellings. However, for dictations, nonvernacular girls employed more function types than vernacular girls, while boys did not differ significantly in their dictations. For both sexes, in both dialects, a significantly greater range of functions was produced in retelling than in dictation.

Table 23

Means and Standard Deviations of Function Types
by Dialect, Sex and Mode for Urban School

Dialect	Sex	Mode	M	SD
Vernacular			5.36	3.91
	Males	Retelling	7.00	3.46
		Dictation	3.72	2.91
	Females	Retelling	9.55	3.18
		Dictation	3.83	2.92
Nonvernacular			9.38	4.76
	Males	Retelling	13.67	3.11
		Dictation	4.94	3.08
	Females	Retelling	11.39	3.43
		Dictation	7.50	3.91
Overalls:		Retelling	10.40	4.06
		Dictation	5.00	3.51

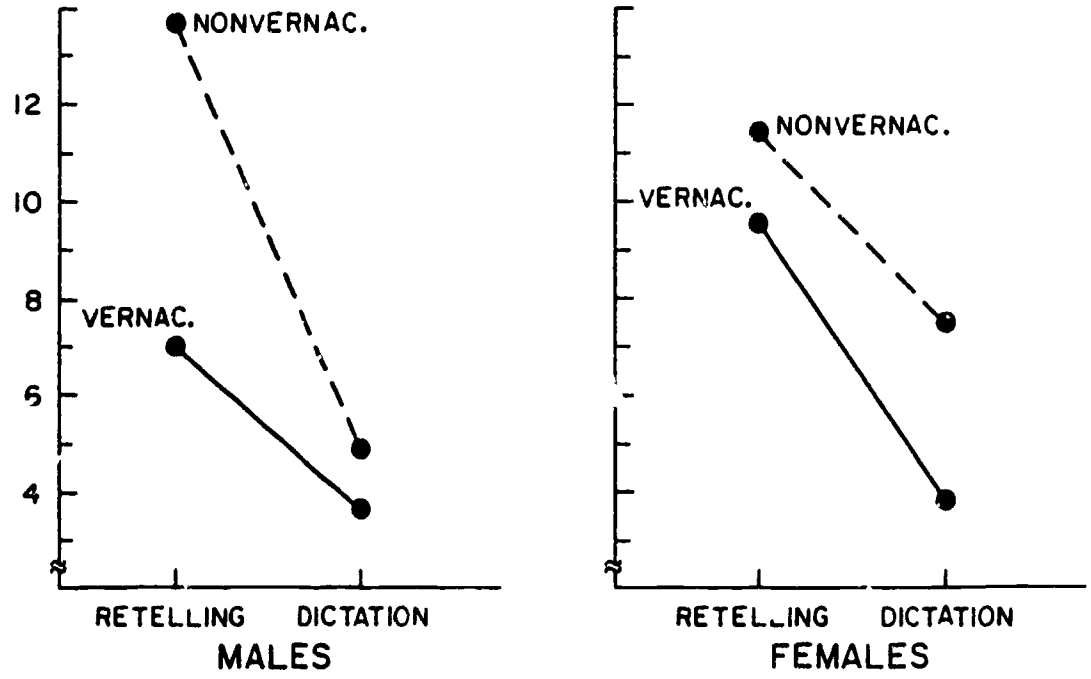


Figure 5: Vernacular-Nonvernacular by Retelling-Dictation Interaction for Males and Females on Function Types for Urban School

As indicated by the significant main effect for dialect, F (1,20) = 17.01, $p < .001$, nonvernacular subjects (M = 9.38, SD = 4.76) incorporated a significantly wider range of functions in their texts than did vernacular children (M = 5.86, SD = 3.91).

Finally, as noted in Table 22, there was a significant main effect for mode: F (1,20) = 125.12, $p < .001$; and a significant main effect for observation: F (1,20) = 5.63, $p < .05$. The Mode results indicate that retellings had more function types than dictations (see Table 23). Overall, the range of functions that children employed in composing a text increased significantly over the 16-month period as can be observed from the means in Table 24. No significant differences, however, were obtained between intervals.

Table 24

Means and Standard Deviations of Function Types by Observations for Urban School

Observation	Function Types	
	M	SD
1	6.75	4.39
2	7.60	3.89
3	8.75	5.42

Follow-up ANOVAs on Moves for Urban School

Table 25 presents the results of ANOVA follow-up procedures for moves, the dependent variable which was assumed to tap complexity or dimensionality in the texts children produced. The only significant finding obtained was for the dialect main effect: F (1,20) = 9.46, $p < .006$.

Table 25

Follow-up Univariate ANOVAs on Moves for Significant Multivariate Test Statistics for Urban School MANOVA

Factor	df	MS	F	p <
Dialect (A)	1	18.06	9.46	.006
Error Term (S/AB)	20	1.91		

Table 26 displays the means and standard deviations on moves for this dialect factor, and indicates that nonvernacular children produced texts of significantly greater complexity.

Table 26

Means and Standard Deviations of
Moves by Dialect for Urban School

Dialect	M	SD
Vernacular	1.44	0.89
NonVernacular	2.15	1.13

(Means and standard deviations of moves by dialect, sex, and mode may be obtained from Table 2.1 in Appendix I. While no other significant main effects or interactions were obtained in this analysis, these additional means and standard deviations are presented for those who may wish to compare mode and sex. Similarly, means and standard deviations of functions and moves are presented for the three observation intervals in Table 2.2, in Appendix I.)

The Urban-Suburban School Replication

As with the previous analyses, number of functions, types of functions, and moves, were operationalized as story structure variables. Means and standard deviations for these three story structure variables will be presented in conjunction with relevant follow-up ANOVA summary tables. Story structure data from the two schools were organized into a two between-subjects (school and sex) and two within subjects (mode and observations) design, and compared, using a multivariate analysis of variance. Results of the MANOVA are shown in Table 27.

Table 27

Story Structure MANOVA by School, Sex, Mode, and Observation for Urban-Suburban School Replication

Source	df	dfHYP	dfERR	F	p <
Between Subjects	23				
School (A)	1	3.00	18.00	2.86	.07
Sex (B)	1	3.00	18.00	1.23	.33
School X Sex (AxB)	1	3.00	18.00	0.45	.72
S/AB	20				
Within Subjects	120				
Mode (C)	1	3.00	18.00	165.25	.001
School X Mode (AxC)	1	3.00	18.00	0.40	.75
Sex X Mode (BxC)	1	3.00	18.00	2.97	.06
School X Sex X Mode (AxBxC)	1	3.00	18.00	5.63	.007
SC/AB	20				
Observation (D)	2	6.00	76.00	12.39	.001
		2.00	38.50	4.26	.02
School X Observation (AxD)	2	6.00	76.00	0.64	.70
		2.00	38.50	0.56	.58
Sex X Observation (BxD)	2	6.00	76.00	0.72	.63
		2.00	38.50	0.09	.92
School X Sex X Observation (AxBxD)	2	6.00	76.00	0.27	.95
		2.00	38.50	0.10	.90
SD/AB	40				
Mode X Observation (CxD)	2	6.00	76.00	4.72	.001
		2.00	38.50	2.07	.14
School X Mode X Observation (AxCxD)	2	6.00	76.00	1.21	.36
		2.00	38.50	0.95	.22
Sex X Mode X Observation (BxCxD)	2	6.00	76.00	1.37	.24
		2.00	38.50	1.25	.30
School X Sex X Mode X Observation (AxBxCxD)	2	6.00	76.00	1.96	.08
		2.00	38.50	0.27	.77
SCD/AB	40				
TOTAL	143				

The F statistics from the MANOVA indicate significant effects for the school by sex by mode interaction: F (3,18) = 5.63, $p < .007$; the mode by observation interaction: F (6,76) = 4.72, $p < .001$; for modes F (3,18) = 165.25, $p < .001$; and for observations: F (6,76) = 12.39, $p < .001$; and F (2,38.50) = 4.26, $p < .02$ (both roots significant).

Follow-up ANOVA on Functions for the Urban-Suburban School Replication

As shown in Table 28, the follow-up univariate ANOVA on functions for the significant multivariate statistics obtained from the MANOVA on the story structure variables in the school replication study, indicated significant univariate effects for the mode factor and for the school by sex by mode interaction.

Table 28

Follow-up Univariate ANOVAs on Functions for Significant Multivariate Text Statistics from the Urban-Suburban Replication MANOVA

Factor	df	MS	F	p <
Mode	1	2617.95	135.94	.001
School X Sex X Mode (AxBxC)	1	200.69	10.42	.004
Error Term (SC/AB)	20	19.26		

Means and standard deviations are presented in Table 29. To determine the nature of the significant second-order interaction of school by sex by mode, Tukey post-hoc comparisons were employed. These cell means reveal that boys and girls do not differ significantly in the number of functions in corporated in their dictations or their retellings within either school. The same pattern existed with both schools. This school by sex by mode interaction is graphed in Figure 6. Table 27 also indicates a significant effect for the mode factor: boys and girls produced significantly more functions in their retellings than in their dictations.

Table 29

Means and Standard Deviations of Functions and Function Types by School, Sex, and Mode for Urban-Suburban School Replication

School	Sex	Mode	Story Structure Measures			
			Functions		Function Types	
			M	SD	M	SD
Suburban			14.07	7.85	10.35	4.93
	Male	Retelling	17.50	5.14	13.11	3.64
		Dictation	10.11	10.40	6.72	4.43
	Female	Retelling	19.89	3.77	14.44	3.43
		Dictation	8.78	3.75	7.11	2.45
Urban			13.18	7.19	9.38	4.76
	Male	Retelling	18.50	2.92	13.67	3.11
		Dictation	7.83	6.40	4.94	3.08
	Female	Retelling	15.67	5.40	11.39	3.43
		Dictation	10.72	8.01	7.50	3.91

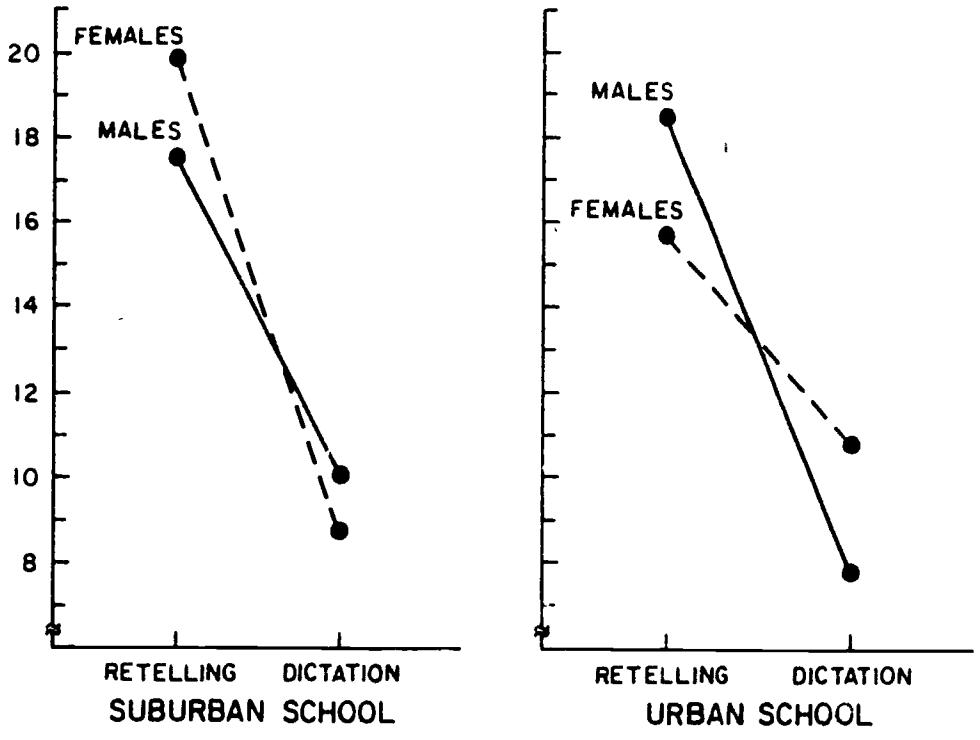


Figure 6: Males-Females by Retelling-Dictation Interaction for Schools, on Functions for Urban-Suburban School Replication

Follow-Up ANOVA on Function Types for Urban-Suburban School Replication

Table 30 presents follow-up ANOVAs on function types for the significant multivariate effects obtained on the MANOVA for the story structure variables in the school replication analysis. Table 30 shows that these univariate test statistics were significant for the mode and observation factors, as well as for the school by sex by mode interaction and the mode by observation interaction.

Table 30

Follow-up Univariate ANOVAs on Function Types for Significant Multivariate Test Statistics from Urban-Suburban Replication MANOVA

Factor	df	MS	F	p <	df*	p**
Mode (C)	1	1560.20	272.53	.001	1	.001
School X Sex X Mode (AxBxC)	1	75.11	13.12	.002	1	.002
Error Term (SC/AB)	20	5.73			20	
Observation (D)	2	109.63	11.69	.001	1	.01
Error Term (SD/AB)	40	9.83			20	
Mode X Observation (CD)	2	241.39	6.44	.004	1	.05
Error Term (SCD/AB)	40	6.43			20	

*Reduced degrees of freedom for Geisser-Greenhouse conservative F test.
**Level of significance for Geisser-Greenhouse conservative F test using reduced degrees of freedom.

Means and standard deviations for function types by school, sex, and mode are presented in Table 29. To probe the nature of the second-order interaction of school, sex, and mode, Tukey post-hoc tests were employed. As shown in Figure 7, girls in the suburban school included a significantly wider range of function types in their retellings than did girls in the urban school. They did not differ significantly, however, in the number of function types they included in their dictations. Within each school, boys did not differ significantly from girls in either dictation or retelling, nor did the suburban boys differ significantly from their urban male and female counterparts in either mode. Boys and girls in both schools produced significantly more function types in their retellings than they did in their dictations.

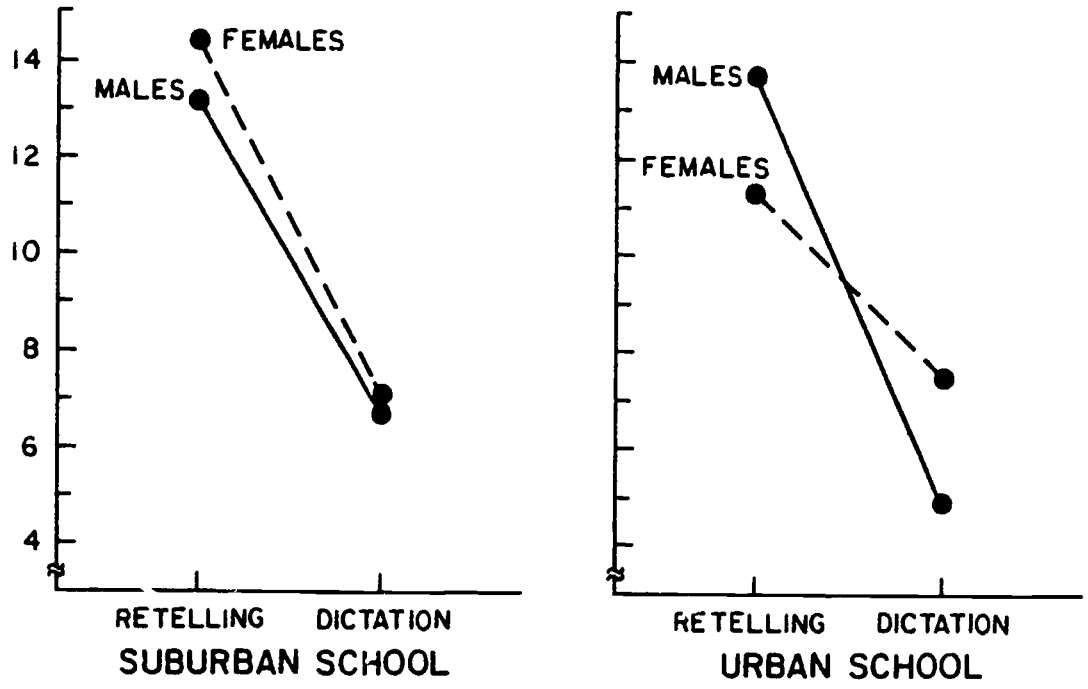


Figure 7: Males-Females by Dictation-Retelling Interaction for Schools, on Function Types, for Urban-Suburban School Replication

For range of functions as operationalized by the variable, function types, there were significant effects for the first order mode by observations interaction: F (1,20) = 6.44, $p < .05$. These results, shown in Table 30, indicate that at each interval, children incorporated more function types in their retellings than in their dictations. Further, as can be seen from Figure 8, Tukey post-hoc comparisons of means, given in Table 31, indicate that number of function types in children's retellings differed significantly from observation one to observation three, and from observation two to observation three. There were no significant differences in the number of function types produced in the dictation texts over the three observations.

Table 31

Means and Standard Deviations of Functions and Function Types by Mode and Observation for Urban-Suburban School Replication

Mode	Observation	Story Structure Measures			
		Functions		Function Types	
		M	SD	M	SD
Retelling		17.89	4.60	13.15	3.52
	1	17.50	5.35	12.42	2.81
	2	17.63	2.39	11.25	1.15
	3	18.54	5.50	15.79	4.18
Dictation		9.36	7.46	6.57	3.61
	1	8.00	7.19	5.71	3.20
	2	10.17	9.04	6.58	3.59
	3	9.92	5.96	7.42	3.96

These results must be interpreted cautiously in light of the fact that the stories children retold differed in the number of functions and function types embodied in each tale. The tale the children retold at observation one contained 18 different function types; at observation two, 12 different function types; and at observation three, 18 function types. This pattern appears to be reflected in the children's retelling texts. It is interesting, however, to note that the significant difference between observations one and three may reflect both, characteristics of the retold stories, and development. Each story that children retold at these two points contained 18 function types. An interpretation based upon story differences alone will not account for these significant effects.

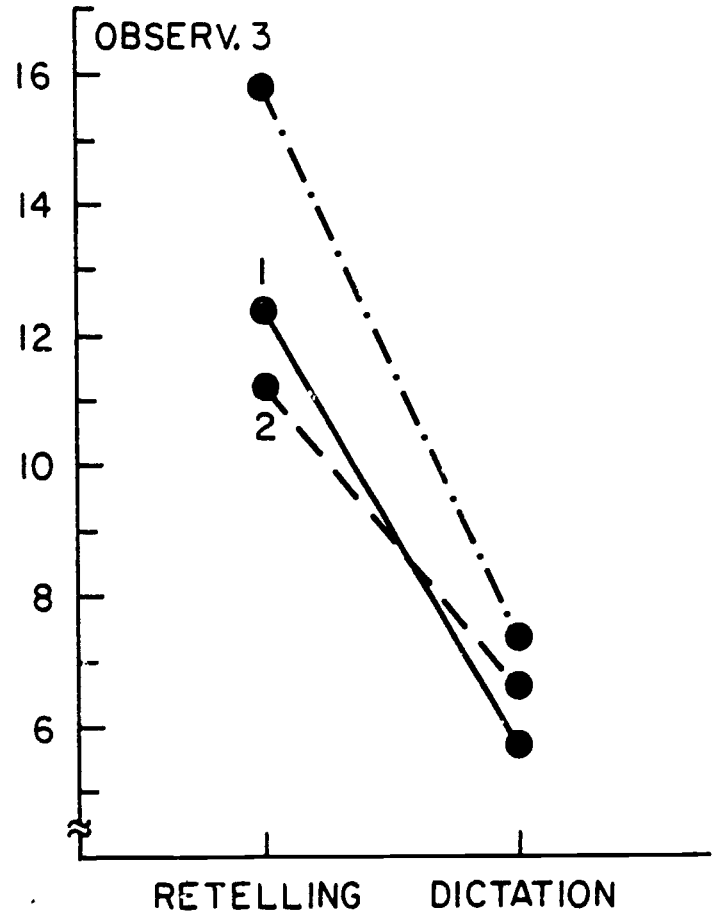


Figure 8: Observations by Mode on Function Types for Urban-Suburban School Replication

Significant main effects, both for modes: F (1,20) = 272.53, $p < .001$; and for observations F (1,20) = 11.69, $p < .01$, are presented above in Table Table 30. Overall means for number of function types included in retellings (M = 13.16, SD = 3.52) were significantly higher than the number included in dictations (M = 6.57, SD = 3.61). Tukey's post-hoc comparisons indicated that means for observations, presented in Table 32, were significantly different both, between observations two and three, and between observations one and three. As noted earlier, these differences must be viewed with some caution. Overall differences between observations one and three, more than likely, reflect the contribut'on of retellings but, still, indicate developmental change over the 16-month period--given the fact that each story children retold at both observation points contained the same number of function types.

Table 32

Means and Standard Deviations of Functions and Function Types by Observation for Urban-Suburban School Replication

Observation	Story Structure Measures			
	Functions		Function Types	
	M	SD	M	SD
1	12.75	7.90	9.06	4.51
2	13.90	7.55	8.92	3.54
3	14.23	7.15	11.60	5.84

Follow-Up ANOVA on Moves--Urban-Suburban School Replication

The follow-up ANOVAs to the significant multivariate test statistics obtained on the school replication data for the dependent variable moves indicated no significant effects for any of the factors or interactions. (Results are shown in Table 2.3 of Appendix I, along with means and standard deviations for moves, given in Table 2.4.)

The suburban school. Because of the significant school by sex by mode interaction effect obtained in the school replication analysis, caution dictated that a separate analysis be preformed on the suburban school data for story structure. Recalling that girls in the suburban school produced a significantly wider range of function types in their retellings than did girls in the urban school, this school by sex difference conservatively suggested that the two schools be analyzed separately, because, even though no main effect for schools was obtained, treating the two populations as equivalent might entail a generalization fallacy.

Design arrangements for both the MANOVA and the follow-up ANOVAs were identical to those employed in the previous analyses--with, of course, the elimination of a "betweens" comparison. In the urban school analysis, sex served as the single between-subject comparison, while mode and observations served as within-subject comparisons. Story structure was similarly operationalized as number of functions, function types, and moves. Results from the MANOVA, shown in Table 33, indicate a significant mode by observation interaction: F (6, 36) = 5.89, $p < .001$; and significant effects for mode: F (3, 8) = 168.15, $p < .001$; and for observations: F (6, 36) = 6.90, $p < .001$.

Follow-Up ANOVA on Functions for Suburban School

Table 34 presents the results of the follow-up ANOVA on functions, for the significant multivariate test statistics resulting from the MANOVA on the story structure data from the suburban school. Table 34 indicates only a significant mode effect was obtained for the follow-up ANOVAs on functions.

Table 33

Story Structure MANOVA
by Sex, Mode, and Observation, for Suburban School

Source	df	dfHYP	dfERR	F	p <
Between Subjects	11				
Sex (A)	1	3.00	8.00	0.87	.50
S/A	10				
Within Subjects	60				
Mode (B)	1	3.00	8.00	168.15	.001
Sex X Mode (AxB)	1	3.00	8.00	1.31	.34
SB/A	10				
Observation (C)	2	6.00	36.00	6.90	.001
		2.00	18.50	2.88	.08
Sex X Observation (AxC)	2	6.00	36.00	.68	
		2.00	18.50	.78	
SC/A	20				
Mode X Observation (BxC)	2	6.00	36.00	5.89	.001
		2.00	18.50	2.11	.15
Sex X Mode X Observation (AxBxC)	2	6.00	36.00	1.57	.19
		2.00	18.50	0.20	.82
SBC/A	20				
TOTAL	71				

Table 34

Follow-up Univariate ANOVAs on Functions for Significant Multivariate Test Statistics, from Suburban School MANOVA

Factor	df	MS	F	p <	df*	p**<
Mode (B)	1	1540.10	66.86	.00	1	.001
Error Term (SB/A)	10	23.04			10	

*Degrees of freedom for Geisser-Greenhouse conservative F test.
**Level of significance for Geisser-Greenhouse conservative F test.

A Tukey post-hoc comparison of means, presented in Table 35, indicates that retellings included significantly more functions than did dictations.

Table 35

Means and Standard Deviations of Functions by Mode, for Suburban School

Mode	M	SD
Retelling	18.69	4.60
Dictation	9.44	7.73

Follow-up ANOVAs of Function Types for the Suburban School

Following up the significant multivariate effects obtained on the suburban school data, both a significant mode by observation interaction effect, and significant main effects for mode and observations were obtained for function types. These results are presented in Table 36.

Table 36

Follow-up Univariate ANOVAs on Function Types for Significant Multivariate Test Statistics from Suburban School MANOVA

Factor	df	MS	F	p <	df*	p**
Mode (B)	1	847.34	260.95	.001	1	.001
Error Term (SB/A)	10	3.25			10	
Observation (C)	2	66.01	9.27	.001	1	.05
Error Term (SC/A)	20	7.12			10	
Mode X Observation (AxC)	2	54.35	7.16	.005	1	.05
Error Term (SBC/A)	20	7.59			10	

*Degrees of freedom for Geisser-Greenhouse conservative F test.
**Level of significance for Geisser-Greenhouse conservative F test.

The first-order interaction effect, graphed in Figure 9, follows a pattern similar to that observed in Figure 8: for dictations, no significant differences between or among observations; for retelling, significant differences

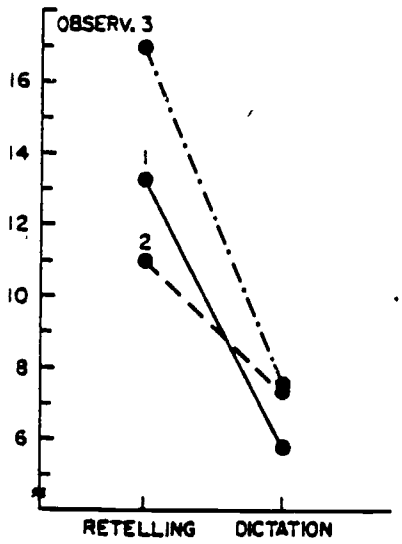


Figure 9: Observations as a Function of Mode, on Function Types, for Suburban School

between observations one and three, and two and three. The similarity ends here. Tukey post-hoc comparisons of means, shown in Table 37, indicate significant differences between retellings and dictations only between observations one and three. There were more function types incorporated in retellings than in dictations. The same factors seem to be operating in this analysis as in the earlier one comparing the two schools: both the first and last stories children heard and retold were identical in the number of function types embodied in each (18 function types), but the story they retold at observation two contained only 12 function types. Both development and cues provided by the three stories are probably implicated in these differences--at least for retellings.

Table 37

Means and Standard Deviations of Function Types by Mode and Observations for Suburban School

Mode	Observation	M	SD
Retelling		13.78	3.55
	1	13.33	1.72
	2	11.00	1.54
	3	17.00	3.86
Dictation		6.92	3.53
	1	5.83	2.72
	2	7.42	3.80
	3	7.50	3.99
Overall			
	1	9.58	4.43
	2	9.20	3.37
	3	12.25	6.19

Accordingly, significant main effects for mode and observations shown in Table 37 should be viewed with great caution. Children incorporated significantly more function types in their retellings than in their dictations overall, but the cueing effects of the stories themselves appear to account for these differences. Moreover, the apparent overall significant increase in function types from observation one to observation three is probably accounted for by differences among retellings and based upon developmental factors associated with understanding and recalling stories. To explore the likelihood of this interpretation, three additional sets of analyses were undertaken. They will be discussed in the next section. One remaining follow-up analysis must be presented before doing so.

Follow-up ANOVA of Moves for Suburban School

No significant factor differences or interaction effects were observed in the follow-up ANOVA for the variable "moves." (Means and standard deviations for this dependent variable may be found in Table 2.7 of Appendix I. The follow-up ANOVA for "moves" is presented in Table 2.8 of the same appendix.)

Story Structure Analyses: A Postlude

The significant interaction effects obtained in previous analyses raised the possibility that overall main effects for observations stemmed from significant retelling differences based upon factors associated with understanding and recalling stories. In each of the previous MANOVAs, significant main effects for observations were obtained and significant interaction effects between mode and observations were found when the suburban school was involved in the design. All follow-up ANOVAs identified function types as the dependent variable expressed in the effect, and retellings as the factor implicated in the mode by observations interactions. By removing retellings from the various analyses, the contribution of dictations alone could be assessed on the premise that effects attributable to dictations would rule out retellings as the sole operative factor in the developmental changes observed thus far. Three separate MANOVAs were performed on the dictation data with the modes comparison removed from each design.

Story structure data from the urban school were organized into a two between-subjects (sex and dialect/socio-economic class) and one within-subjects (observations) MANOVA. The results of this analysis are presented in Table 38.

Table 38

Story Structure MANOVA in Dictation by
Dialect, Sex, and Observation for Urban School

Source	df	dfHYP	dfERR	F	p <
Between Subjects	23				
Dialect (A)	1	3.00	18.00	3.27	.05
Sex (B)	1	3.00	18.00	0.72	.56
Dialect X Sex (AxB)	1	3.00	18.00	3.49	.04
S/AB	20				
Within Subjects	48				
Observation (C)	2	6.00	76.00	1.69	.14
		2.00	38.50	0.38	.68
Dialect X	2	6.00	76.00	0.38	.89
Observation		2.00	38.50	0.31	.73
Sex X Observation	2	6.00	76.00	1.20	.32
		2.00	38.50	0.35	.71
Dialect X Sex X	2	6.00	76.00	0.79	.58
Observation		2.00	38.50	1.11	.34
SC/AB	40				
TOTAL	71				

Significant effects were obtained for the dialect by sex interaction: F (3,18) = 3.49, $p < .04$; and for dialect: F (3,18) = 3.27, $p < .05$. Of particular interest is the failure to obtain significant main effects or interactions for observations. To follow-up these significant multivariate effects ANOVAs on all three dependent variables--functions, function types and moves--were performed and yielded significant main effects for dialect along and no significant interaction effects. These three follow-up ANOVAs are presented in Table 39, abbreviated and combined in a summary table which permits comparisons of the dialect main effects across dependent variables. (Complete ANOVA summary

tables are presented in Appendix I as follows: functions, Table 2.9; function types, Table 2.10; and moves, Table 2.11.) Means and standard deviations for the three story structure variables are presented in Table 40. Tukey post hoc comparisons indicate that nonvernacular subjects produced significantly more functions, function types and moves than vernacular children in their dictated stories.

Table 39

Follow-up Univariate ANOVAs on Functions, Function Types, and Moves, in Dictations, for Significant Multivariate Test Statistics from Urban School MANOVA

Factor	df	Functions			Function Types			Moves		
		MS	F	p	MS	F	p	MS	F	p
Dialect	1	304.22	4.83	.04	104.56	7.81	.01	11.68	4.69	.04
Error Term (S/AB)	20	63.00			13.78			2.49		

A second MANOVA was performed on the story structure data for a comparison of the urban and suburban schools. These results are presented in Table 41 where it can be seen that a significant multivariate effect for sex was obtained: F (3,18) = 3.92, $p < .03$. However, follow-up ANOVAs for functions, function types, and moves indicated no significant effects for either factors or interactions. (These ANOVAs are presented as follows in Appendix I: functions, Table 2.12; function types, Table 2.13; and moves, Table 2.14. Means and standard deviations for all three story structure variables included in the school replication are in Appendix I, Table 2.15.)

A final MANOVA was performed on the same data for the suburban school. As shown in Table 42, no significant main effects or interactions were obtained; thus no follow-up ANOVAs were required. (Means and standard deviations are given in Appendix I, Table 2.16.)

There were no significant effects at any point with the dictation data for observations. Thus, retellings account for the significant observation differences found in the previous analyses.

Table 40

Means and Standard Deviations of Story Structure Elements in Dictation by Dialect, Sex, and Observation

Dialect	Sex	Observation	Story Structure Elements: Function		Function Types		Moves	
			M	SD	M	SD	M	SD
Vernacular			5.17	5.39	3.78	2.87	1.31	1.09
	Males	1	2.17	1.17	2.17	1.17	0.83	0.41
		2	5.33	3.98	4.83	3.76	1.17	0.41
		3	4.33	3.08	4.17	2.93	1.17	0.41
	Females	1	6.83	6.01	4.17	2.79	1.67	1.51
		2	8.17	10.03	3.67	3.56	1.83	2.14
		3	4.17	3.54	3.67	2.88	1.17	0.41
Nonvernacular			9.28	7.29	6.22	3.70	2.11	1.45
	Males	1	7.67	4.80	4.33	1.97	2.00	0.89
		2	8.67	9.54	5.76	4.23	1.67	1.51
		3	7.17	4.88	4.83	3.06	2.00	0.89
	Females	1	10.83	12.21	6.83	4.79	2.17	2.04
		2	9.50	7.82	5.83	2.48	2.33	2.42
		3	11.83	2.14	9.83	3.54	2.50	0.55

Table 41

Story Structure MANOVA in Dictation, by School, Sex, and Observation, for Urban-Suburban School Replication

Source	df	dfHYP	dfERR	F	p <
Between Subjects	23				
School (A)	1	3.00	18.00	2.18	.52
Sex (B)	1	3.00	18.00	3.92	.03
School X Sex (AxB)	1	3.00	18.00	0.33	.80
S/AB	20				
Within Subjects	48				
Observation (C)	2	6.00	76.00	2.04	.07
		2.00	38.50	0.93	.41
School X Observation (AxC)	2	6.00	76.00	0.67	.67
		2.00	38.50	0.46	.64
Sex X Observation (BxC)	2	6.00	76.00	1.55	.17
		2.00	38.50	0.77	.47
School X Sex X Observation (AxBxC)	2	6.00	76.00	1.14	.35
		2.00	38.50	0.09	.91
SC/AB	40				
TOTAL	71				

Table 42

Story Structure MANOVA in Dictation, by Sex and Observation, for Suburban School

Source	df	dfHYP	dfERR	F	p <
Between Subjects	11				
Sex (A)	1	3.00	8.00	1.22	.36
S/A	10				
Within Subjects	24				
Observations (B)	2	6.00	36.00	0.89	.52
		2.00	18.50	0.96	.40
Sex X Observation (AxB)	2	6.00	36.00	1.33	.27
		2.00	18.50	0.35	.71
SB/A	20				
TOTAL	35				

Developmental differences in the retellings are in all probability associated with factors involved in comprehending and recalling stories.

Story Structure Analysis for Writing

Written protocols obtained at each of the three observation intervals were analyzed separately from retellings and dictations. While a design permitting comparisons among all three modes of discourse would have been preferable to a separate analysis for writing, genre variation in writing at each observation period precluded such an analysis.

Table 43

Frequency and Percentage of Genre Types in Written Texts, by Observation, for Combined Urban-Suburban School Populations

Genre	Observation 1		Observation 2		Observation 3	
	F	%	F	%	F	%
No text	7	17.95	5	12.50	1	2.63
Statement/Label	8	20.51	2	5.00	0	0.00
Composition	5	12.82	5	12.50	9	23.68
Interaction	6	15.39	0	0.00	3	7.90
Chronicle	0	0.00	4	10.00	3	7.90
Tale	13	33.33	24	60.00	22	57.89
TOTAL	38	100.00	40	100.00	38	100.00

As shown in Table 43, text genre varied substantially when children were asked to write a story. In part, children responded by producing a fictional tale, and some responded by producing their own version of what they clearly regarded as a story--their personal definitions of "story" being very global. Some children, however, simply misunderstood the request to write a story, especially during observation one. As can be seen from Table 43, many of the children were, for various reasons, still unable to comply with the request even at observation three.

Written protocols from the thirteen subjects who had produced tales at observation one plus two protocols which, because of their brevity, were difficult to classify were selected for comparison over the three observation periods using a repeated-measures analysis of variance. In all, 45 texts were compared, one from each of 15 subjects for each of three observation periods. Functions and function types were analyzed on two within-subjects ANOVAs. The results are presented in tables 44 and 46. Tukey post-hoc comparisons of means (Table 45), using reduced degrees of freedom (1,14) to obtain the studentized range statistic, indicated that number of functions included in written texts increased significantly over the 16-month observation period, and between observations two and three.

Table 44

ANOVA of Functions in Writing, by Observation, for Combined Population

	df	MS	F	p* <
Observations (O)	2	34.03	7.60*	.002
Subjects (S)	14	8.95		
Residual (SO)	28	4.48		

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,14) is significant at $p < .05$.

Table 45

Means and Standard Deviations of Functions in Writing, by Observation, for Combined Population

Functions	Observation 1	Observation 2	Observation 3
Mean	1.80	3.53	4.80
Standard Deviation	2.14	2.88	2.24

Table 46 indicates a significant difference for observations on function types. The repeated measures analysis was corrected for positive bias using the Geisser-Greenhouse conservative F test with reduced degrees of freedom (1,14). Tukey post-hoc comparisons, using reduced degrees of freedom (1,14) to obtain the Studentized Range Statistic, revealed that number of function types increased significantly between observations one and two, and between observations one and three. Means for function types are presented in Table 47.

Table 46

ANOVA of Function Types of Writing, by Observation, for Combined Population

Source	df	MS	F	p <
Observation (O)	2	30.49	8.02*	.002
Subjects (S)	14	7.18		
Residual (SO)	28	3.80		

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,14) is significant at $p < .05$.

Table 47

Means and Standard Deviations of Function Types in Writing by Observation, for Combined Population

Function Types	Observation 1	Observation 2	Observation 3
Mean	1.60	3.47	4.40
Standard Deviation	1.80	2.80	1.92

Clearly children have acquired a wide range of cohesive options, and a reasonably well organized set of systematic strategies for utilizing them, in the formation of cohesive fictional narratives. By the end of grade two, their cohesive ties are routinely endophoric. They employ substitution and ellipsis sparingly. Conversely, they are unhesitant in their use of lexical cohesion, conjunction and reference. Restricted exophoric reference has all but faded completely from their texts. In short, so far as cohesion is concerned, their transition from oral to written texts, while not complete, is well under way by the end of second grade, in the sample of children investigated in this study.

Discussion

Earlier studies of children's narrative competence (Botvin and Sutton-Smith, 1977; Rubin and Gardner, 1977; Applebee, 1978) reveal that, action elements very similar to those found in traditional fairy tales and folk stories, appear in children's narratives. What role familiar folk and fairy tales played in providing children with relevant models of fantasy texts around which they organized their narrative productions, is not clear from this body of work. What is clear, is that the most common plot units found in these narratives produced by young children, closely resembled many of the functions identified by the Russian structuralist, Vladamir Propp, as nuclear units in Russian fairy tales. This coincidence between children's narratives and the formal attributes of fairy tales, at least as set forth by Propp, suggests that at some point in learning to form narrative texts, children may employ schema quite similar to those they have heard and read. As argued in Chapter 1, given evidence that children's story recalls, a procedure which requires production, are biased toward a prototypic or cannonical form (Mandler and Johnson, 1977; Stein and Glenn, 1978), it is likely that children's fantasy narratives would skew toward a cannonical form--in the case of early development, the fairy tale.

The production advantages of having such relevant discourse schemata are many, as has been argued elsewhere in the literature (Winograd, 1977; Halliday, 1973), as well as in Chapter 1. As operationalized in this study, these schemata are thought to influence the production of fantasy narratives in the following three ways. First, the young storymaker must sustain the narrative in some cumulative way. Regardless of variety, the storyteller must produce a linear array of action units containing both necessary and sufficient elements of a story. Having a schema in which such elements are represented in memory would provide the basis for cumulating units either additively or in parallel. Even with a bare minimum of rudimentary units, through repetition, a narrative could be sustained indefinitely (Botvin and Sutton-Smith, 1977). Second, having a variety of functions represented in memory would increase the storyteller's range and depth of storymaking. The storymaker would have a range of functions from which sets of options could be selected, with sets having fixed and variable elements. Fixed elements would serve to specify a genre of text (Hason, 1980). The availability of these sets of action units would comprise the necessary and sufficient elements for defining a story genre. Particular sets such as those found typically in fairy stories--lack and lack liquidated or villainy and villainy nullified--would, in combination with other elements comprise the variable elements in a fairy tale. They are necessary but not sufficient for defining fairy tales as a genre. In combination with magical agents and certain other elements, the fairy tale genre would be specified. The availability of these pairings--or moves as Propp called them--in memory, combined in parallel or in tandem, afford the storymaker opportunities for thematic reflection, permutation and variation. That is, the storymaker can infuse dimension in the tale.

These three characteristics, sustaining power, range and dimension, were operationalized in the study as number of functions, number of function types, and number of moves. Raw frequency of functions, regardless of variety, was assumed to index sustaining power. On the other hand, number of function types, variety of functions, was assumed to indicate range and depth of storymaking. Finally, number of moves was assumed to measure dimensionality in story production.

The baseline mode, retelling, provided a clear indication that production, regardless of emerging developmental characteristics, is influenced by factors associated with input stories. In particular, number of function types over observations, to a large extent, mirrored the number of function types contained in the stimulus stories. Over and above differences associated with input stories, were differences obtained in all three sets of comparisons--the urban school study, the urban-suburban school replication study, and the suburban school study--which indicated that a wider range of functions was employed, given the same number of input options at observation three and at observation one. Because there were no differences found in the range of functions for dictations over observations, retelling differences over the 16 months probably are best accounted for through association with developmental factors involved in comprehending and recalling stories.

This conclusion, however, requires further qualification. For the dictation mode, not all texts included in the analysis were unequivocally fictional narratives. Eight dictation protocols included in the analysis contained both story elements and elements found typically in "compositions." These mixed texts were included if they met the following conditions: (1) the text manifested a clear fictional intent, and (2) it contained a legitimate move--that is, a pairing of lack and lack liquidated or villainy and villainy nullified. The eight texts were evenly distributed among cells over the first two observations, with only one subject producing a mixed text in both observations one and two.

It is highly likely that the dictation context itself affected production in at least two ways. First, the dictation context obviously afforded opportunities to interact with the scribe which, indeed, many children did. Most of these interactions were requests for information from the scribe or directions given to the scribe. These kinds of interactions were identified in the transcription and not counted for the purpose of analysis. Second, several texts included someone or something present in the context, as part of the tale. These intrusions from the context were coded as attributes of the tale. These genre variations within the mixed texts, though perhaps typical of the difficulties some children confronted as they attempted to create original stories, were nevertheless, a source of variance which could not be clearly interpreted.

As indicated in Table 43, at observation one, only 13 written texts were classified as stories. By observation three, the number of children who could write a story had risen to 25--about 64% of the subjects in the total pool. In addition to the 13 texts clearly identifiable as stories

at observation one, two other protocols were included in the analysis of the writing mode. These two texts contained only a beginning--a fictional story marker setting forth attributes, such as, personna, location, and time. Because significant increase in both, number of functions, and number of function types, was obtained for the observations comparison, there is at least some basis for concluding that children do utilize structures akin to those found in traditional fairy and folk tales, in their original written narratives. Given evidence of exposure to such stories in their school literature experiences, it would seem that such experiences figure increasingly in their rhetorical designs, at least through second grade.

In our coding procedures, a few functions were slightly modified from Propp's original definitions, and all were interpreted liberally. Still, these functions exhausted the range of classifiable action units found in the written texts produced by this sample of children. Thus, it seems reasonable to conclude that these children, when asked to write stories, built narrative structures predicated upon function-like action units. The range of functions they incorporated in their written texts was modest compared to the range of functions found in their retellings over observations: writing (1.60, 3.47, 4.40); retelling (11.07, 10.93, 14.21). But, as will be discussed in Appendix J, retellings and dictations were significantly longer than written texts. While the designs employed in this study do not permit a strong causal inference about the role of stories in the production of texts, a weak inference is permissable on the grounds established above: a restricted but plausible basis exists for believing that the comprehension and representation of stories in memory constitute narrative production schemata for structuring plots in the beginning phases of writing development.

As stated earlier, these comparisons for writing were made on just 15 subjects whose protocols could reasonably be classified as fictional stories. Other genres were excluded from the analysis, of course, to permit conclusions about the role of stories in beginning writing development. Consequently, other comparisons, such as those for sex and dialect/socio-economic class, were obviated by this requirement. Comparisons on these factors were possible, however, for retelling and dictation. They will be presented as follows. First, results from the urban school will be discussed, then the urban-suburban school replication, and finally, the suburban school will be examined. Each of these sections will be treated in terms of the three dependent variables for story structure-functions, function types, and moves.

The Urban School

Functions, the dependent variable assumed to index the ability to sustain a narrative, were interesting for what they revealed about interactions between sub-populations and the two modes of discourse compared in the analysis. Both vernacular and nonvernacular boys and girls included more functions in their retelling texts than they did in

their dictations. That is, these subjects did not differ in their ability to sustain a text as a function of sex within dialect/socio-economic groups. On the other hand, nonvernacular boys included significantly more functions in their retellings than did either vernacular boys or vernacular girls. Nonvernacular girls included more functions, in both their dictations and retellings, than did either sex in the vernacular group. While nonvernacular subjects included more functions in their retellings than did vernacular subjects, there were no differences between the two modes for vernacular children. These findings indicate that, as a group, nonvernacular girls were better able to sustain texts in both oral modes than either vernacular boys or girls. This superiority held with nonvernacular boys only for retellings. The chances are that middle class nonvernacular children, having had broader previous exposure to folk tales and fairy tales, could recall and sustain stories better than their vernacular speaking lower class counterparts. The finding of no significant differences over observations for number of functions suggests that this advantage held for the first two years of schooling--the period encompassed by the study.

The findings for function types provide some support for this conclusion. Number of function types was assumed to reflect the range of functions available in memory enabling the production of a text with greater range and breadth. Even more so than number of functions, the variable function types presumably would be most deeply rooted in exposure to folk and fairy tales or their fantasy counterparts found in television cartoons and serials, as well as motion pictures. Since children could repeat the same function over and over in various guises, number of functions, though of course mathematically related to function types, provided only an indirect and restricted index of exposure. Function types constituted a more sensitive and accurate mirror of exposure to stories. The pattern of interactions and main effects for function types was very similar to that for functions. All subjects included a greater range of functions in their retellings than they did in their dictations. Nonvernacular middle class girls included more function types in their retelling texts than did vernacular lower class boys. There were no differences, however, between nonvernacular boys and girls or vernacular girls for retellings. In dictations, nonvernacular girls maintained their superiority over nonvernacular boys and girls, but did not differ significantly from nonvernacular boys, in range of functions incorporated in these texts. Nonvernacular middle class children held less of an edge, in terms of range of functions, than they did for number of function types. While able to sustain a story somewhat better than their vernacularspeaking lower class counterparts, nonvernacular middle class children apparently held this superiority for range of functions over lower class boys in both modes of text production, but only differentially by sex, relative to lower class girls. Middle class girls maintained their advantage for dictations, while middle class boys held their advantage for retellings.

Overall, the range of functions that children employed in composing a text, increased significantly over the first two years of schooling. A separate analysis of the dictation data failed to obtain significant differences over observations; therefore, these overall differences for observations are best viewed as stemming from a wider range of functions being incorporated in retellings over observations. These increases, more than likely, are related to developmental increments in the ability to comprehend and recall stories, which may have had a corollary effect on the production of written texts in the sense of providing a wider range of functions or options for story making.

Finally, in the urban school, nonvernacular children incorporated more moves within their texts than did vernacular-speaking lower class children. The follow-up analysis on dictations alone produced the same finding. Apparently nonvernacular middle class children were able to combine moves in tandem or, in parallel, to produce texts of greater dimensionality than the vernacular lower class children in this population.

Unlike the cohesion variables discussed in the previous chapter, consistent significant differences were obtained for the story structure variables. Middle and lower class children who spoke different versions of English differed significantly on all measures, in both dictations and retellings. These differences persisted over the first two years of schooling. No doubt they stemed from social class rather than linguistic origins. The cohesion findings help to underscore this point. For the cohesion variables, almost without exception, differences between the two populations diminished over time. Yet, cohesion categories are fundamentally formal and linguistic. Had there been an interaction between ways of speaking and ways of meaning, certainly their effects would have been more likely for the cohesion rather than the story structure variables. Yet, such was not the case. The more plausible explanation for these story structure differences, therefore rests in social class distinctions which, in part, give rise to dialect variation, and equally, to variation in extended exposure to written texts. One distinction that is most closely associated with being middle class is the value placed on literacy. The advantages of holding such a value are no more clearly seen than in the steps taken to manifest and preserve it. The well known result is a broader and deeper exposure to written texts for middle class children, the impact of which can be seen in these findings for story structure. These results, of course, were not unexpected.

The school replication study simply added weight to this interpretation. The singular difference between schools, when middle class children were compared, was that girls in the suburban school included a wider range of functions in their retellings than did either urban boys or girls. In other respects, middle class children in the two schools were identical. Boys and girls in both schools produced significantly more function types in their retellings than they did in

their dictations, both overall, and at each observation. As pointed out earlier, no differences in dictation were obtained over observations for any of the dependent variables associated with story structure. Differences in number of function types over observations were, in fact, accounted for by retellings alone. Both, developmental factors, and the cues available in the stories children retold, appear implicated in this finding. The stories children retold at both observations one and three were comparable in terms of the number of function types included in each tale (Squawk to the Moon, Little Goose and Salt). Thus, the significant increase in function types between observations one and three cannot be accounted for by input alone. In part, these differences must stem from increased ability to understand and remember stories. But the finding of significant differences in number of function types, over observations, for writing, suggests a parallel increase in the range of functions available for production as well.

The Suburban School

In the suburban school, there was only one significant difference for number of functions included in a story: retellings contained more functions than dictations. Quite predictably, children found it far easier to sustain a retelling than an original production. The same mode difference was obtained for function types: a broader range of functions were included in retellings than in dictations. Here too, the creation of an original tale understandably has an effect on the range of functions employed. The struggle to imagine and create the elements of plot, character, point of view, and texture surely make far greater demands on cognitive capabilities than the immediate recall of these same elements, already carefully orchestrated by another composer. The range of functions included in retellings (M = 18.69; SD = 4.60) was roughly twice the range included in dictations (M = 9.44; SD = 7.73). Children not only retold major portions of these stories, but sometimes embellished their own accounts with additional functions. Thus, the retelling of stories may be an important touchstone for learning the rudiments of composing.

Again, as with functions, there were significant differences in the number of function types employed by children in their retellings, the greater increase occurring between observations one and three, but with a significant increase occurring between observations two and three. There were no significant differences, however, in number of function types, over observations, in their dictated texts. These retelling differences were identical to those discussed above in the section on the urban school. The same factors undoubtedly were responsible for differences in retellings over observations, and at issue, when contrasted with the results for number of function types employed in writing over observations. Increased composing capabilities, as well as increased ability to understand and recall stories, apparently developed during the 16-month period the children were observed in this study.

Summary of Story Structure

The ability to comprehend and recall texts as well as the combined abilities to sustain and broaden the range of elements employed in producing oral and written fictional narratives increased significantly during the first two years of schooling for middle class children. While lower class children increased the number and range of functions incorporated in both retellings and dictations, the rate of increase remained approximately half that of their middle class counterparts. The advantage that middle class children held at the outset for all three text-forming structures--functions, function types, and moves--persisted through the 16-month duration of the study. Contrasted with the findings for cohesion, the origins of these story structure differences between the two urban school populations may be placed in perspective. Given the formal linguistic nature of cohesion categories, the cohesion variables were more likely to be influenced by dialect variation than story structure variables. In particular, exophoric reference, which decreased significantly over observations, among both vernacular speaking subjects and nonvernacular subjects, should have produced an interaction between dialect and observations had dialect alone affected exophoric reference. It did not. There were no grounds for linking story structure variables with dialect variation. Given no interaction between cohesion variables and dialect, there is no basis whatsoever for linking story structure to ways of speaking. These differences between the two urban school populations, therefore, were attributable solely to social class factors associated with exposure to written tests.

Exposure to folk tales and fairy tales appears to result in children utilizing structures, akin to those found in these tales, as a rhetorical basis for their own original written texts. It is plausible that comprehension and representation of stories in memory constitute, at least a minimal rhetorical schema for structuring fictional narratives early in writing development.

Chapter 5

Results and Discussion: Conventions of Print

Results

Sometime, between the ages of three and five, most children begin to notice that marks on paper and signs in the street have a purpose and convey a message (Clay. 1975). Clay suggests that they become aware of the existence of a written code and set about discovering it. "Early explorations with a pencil" (Clay, 1977) are just that--exploring, playing and discovering what can be produced on paper with this new instrument, an extension of the hand. Children's early scribbles become recognizable shapes and pictures, then the shapes take on characteristics of letters and words. Children may first write wherever convenient and scatter letters or letter-like shapes all over the page. But they soon learn the conventional left-to-right direction of English writing, word boundaries, and spacing, and gradually master the spelling system.

In order to assess children's development in respect to their concept of message and related concepts of directionality and spacing, three sets of categories were developed from an analysis of the scripts they produced. The first, Concept of Message Categories (CMC), incorporated the concept of sign. The other two concern how the writing appears on the page in respect to left-right direction and word and sentence boundaries.

Concept of Message

Early in the process of becoming literate, children gradually become aware of the specific, consistent relationships that exist between messages expressed by written texts and the combinations of letters used to represent the various parts of those messages. The reason for classifying subjects in Concept of Message Categories (Figure 10) was to get at their differing levels of awareness of these relationships as revealed by their writings. The categories differentiate between children with no or little understanding (picture carries message), a vague global understanding (letter strings), the ability to copy or construct limited repetitious message (copied or invented patterns), and the ability to construct an original and varied "readable" message.

The following examples serve to illustrate both, the range of sophistication in young children's concept of message as revealed by their writings, and how these were classified into the categories of Figure 10.

0 Child draws a picture, but does not use any letters or numbers. S/he may use other signs--i.e., stars, Xs plus or minus signs. Child may or may not respond when asked to tell about her/his production.

1 Letters and/or numbers scattered haphazardly across the page, with or without a picture. When asked to retell child responds to picture and/or does not attempt to match writing to speech.

2 Letter and/or number strings, message from print only in a global sense.

3 Letter and/or number strings, but message from print in a more specific sense, i.e., child matches at least parts of spoken message to parts of print. Included are single word labels for pictures and letter strings in which only a few words are actually discernable.

4 Copied repeated a patterns (e.g. I love..., My dog is nice, my dog is good...,) Assume these are original (5 below) unless strong evidence for actual copying.

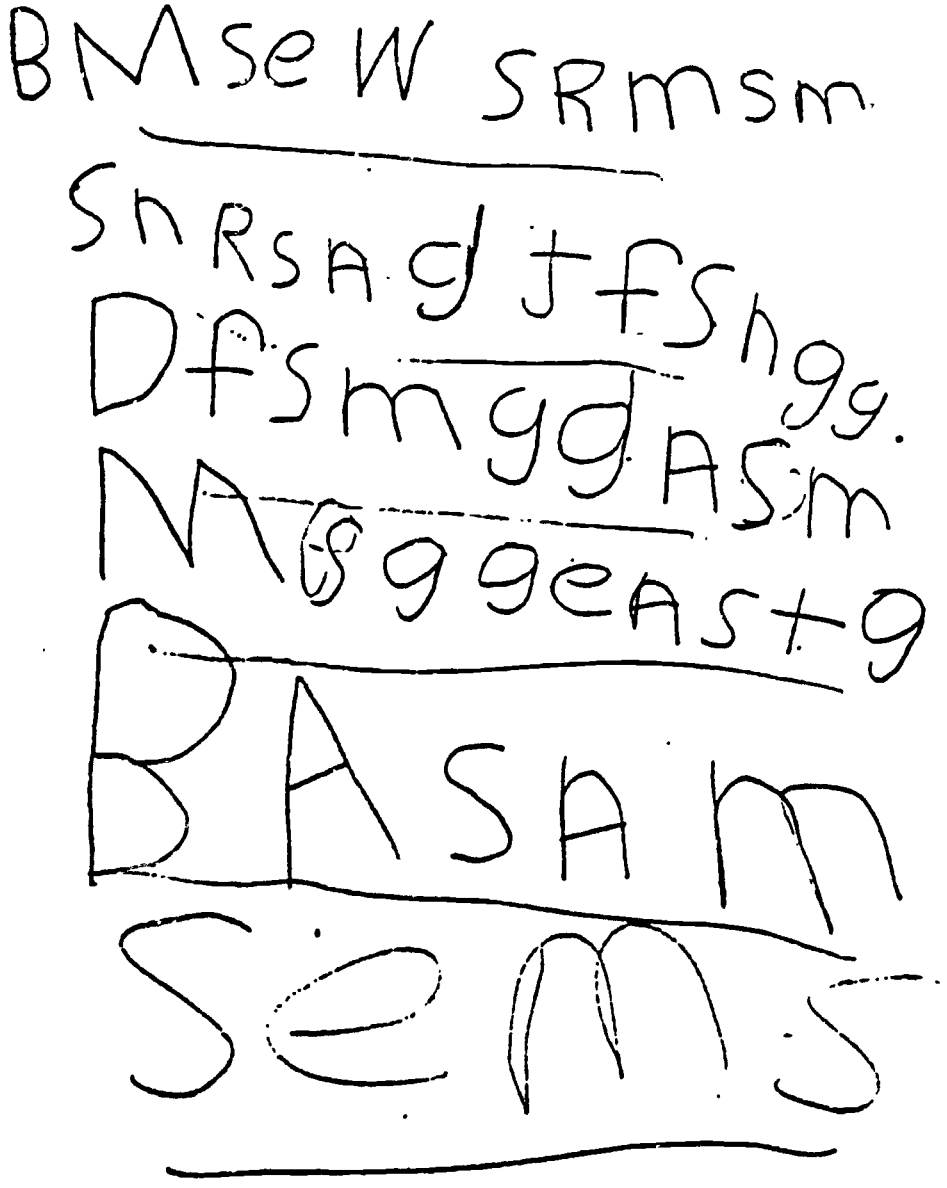
5 Invented repeated patterns (see 4 above). Also include here brief single phrase or clause labels.

6 Piece of writing in which fairly original and varied phrases and/or sentences are used to convey message. Writing may or may not include conventional punctuation, capitalization or spelling. Length and ideas may vary considerably.

Figure 10: Concepts of Message Categories

The first example represents the undifferentiated, global understanding described for Category 2.

1. Category 2

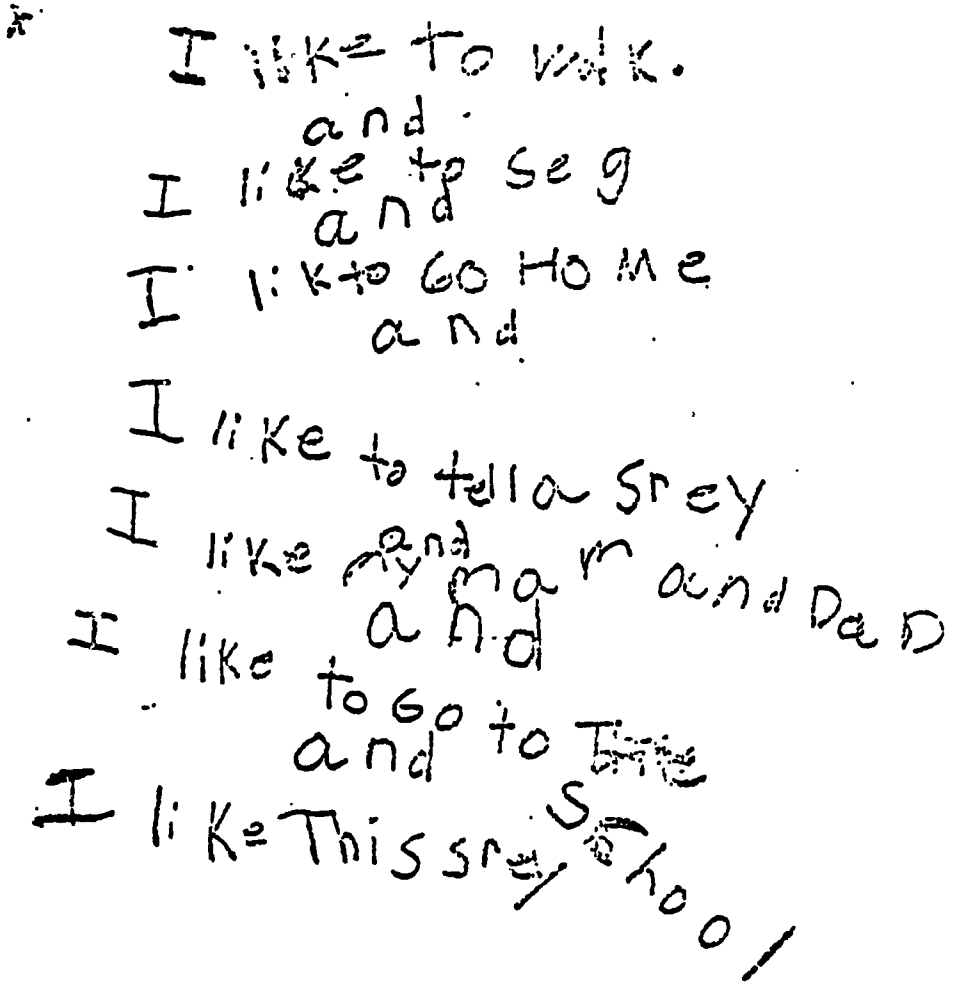


(Read by its author as: "One day there was a little turtle. It was getting in the water and it was going down the street. Then the little girl came and picked it up and mother said to her it was time for her to go to bed. And that's the end!")

While the fairly extensive, clearly written, lined rows of letters suggest that the writer has internalized some important concepts about the physical organization of print, the concept of message revealed is still quite primitive. The child recognizes that strings of letters carry a message in a general sense, but is unaware of how specific, restricted sets of letters, match specific parts of the corresponding oral representation. Children who string letters in this way may not always have a specific message in mind. Yet having created such a text they often expect it to "say" something, and may ask an adult or fellow student to "read" it to them as if every set of letter combinations must express some message.

The child who wrote the second example does show his awareness of how combinations of letters represent specific spoken words.

2. Category 5



But his text suggests that his concept of written message is restricted to formuliac patterns in which both specific words and simple sentence structures are constantly repeated. Contrast this "controlled reader" style with the varying, natural language texts illustrated in examples 3 and 4.

3. Category 6

I went in Lara's
car and we drove To
The Big Bear. We Saw a
Place Where they
Put meat in the
Pac Kages

4. Category 6

the magick bunny

Oenc a poun a time ther was a bunny named benji and she had
Magick povers. aun day she was walking in the woods a boy
bunny aperd & they went together for a wall & a man aperd
with a big net he got the tow bunny & went [illegible]
ship Pore bunny's the wner got now but rite then the
grill bunny tript the man & they got free oence
a gen so the boy bunny thanckt the grill bunny for saving
him. the boy bunny ascht the grill bunny to mare him
and she said yes So they had 6 baby bunnys
and they lived happly aver after

While these examples are quite different from each other in length, complexity and variety, the authors of both are able to use fairly original and varied written phrases to convey a unique, personal message. In this respect they are qualitatively different from example 2. Other differences between these texts were studied through the other various sets of categories and analytic techniques used in the full study.

By February-March of first grade almost all children constructed a message. When data were first collected in the seventh month of first grade, of our total population of 40 subjects, only two (5.2%) did not (below Category 4); 23 subjects (59%) were writing original messages. Table 48 shows the progression in which increasing numbers of children moved to higher categories. By the last observation (May, grade 2) all subjects were functioning at categories 5 and 6 with over 80% creating original, varied messages (see Table 48 and Figure 11).

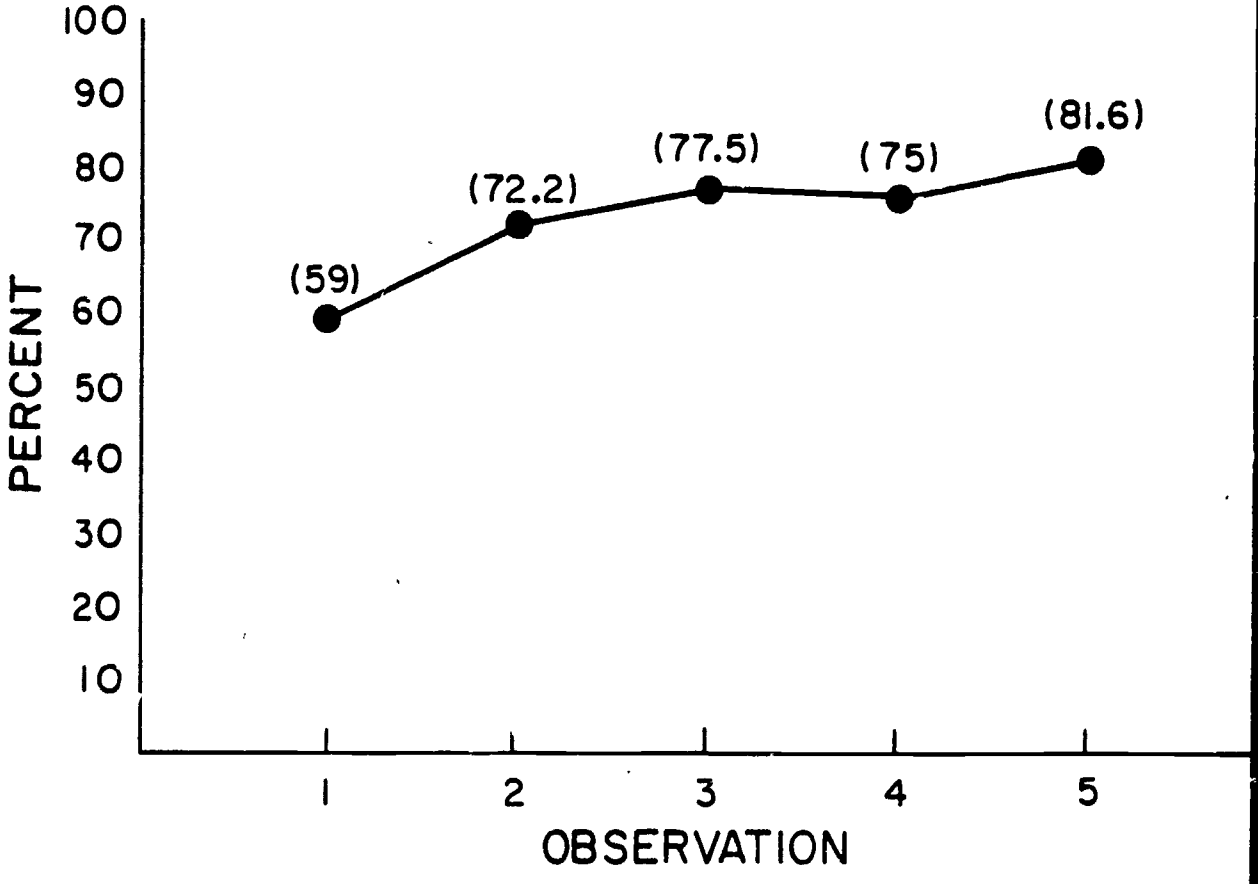


Figure 11. Percent of Subjects Having Well Developed Concept of Message (Level Six) by Observation

TABLE 48

Frequency of Ratings and Percentages Over Observations for the Concept of Message Categories

Ratings		Observations 1	2	3	4	5
Picture only	0	0(0)*	0(0)	0(0)	0(0)	0(0)
Letter Strings, Message from Picture	1	1(2.6)	2(5.6)	1(0)	0(0)	0(0)
Letter Strings, Global Message	2	0(0)	0(0)	2(5.0)	1(2.5)	0(0)
Letter Strings, Specific Matches	3	1(2.6)	0(0)	0(0)	1(2.5)	0(0)
Repeated Patterns Copied	4	5(12.8)	1(2.8)	1(2.5)	0(0)	0(0)
Repeated Patterns Invented	5	9(23.1)	7(19.4)	5(12.5)	8(20)	7(18.4)
Original Matched Message	6	23(59)	26(72.2)	31(77.5)	30(75)	31(81.6)
TOTALS		39(100)	36(100)	40(100)	40(100)	38(100)

Comparisons of numbers and percentages by category for different dialects and schools revealed noticeable differences between vernacular and non-vernacular speakers. (see Table 49)

At the first observation, more than three-fifths of the writings of the non-vernacular speakers in each school (Urban-85%, Suburban-62%) were already in the highest category. Within the nonvernacular population at the first observation 20% more of the Urban school children's writing samples were classified as varied messages than the Suburban school children. But, by the last observation, the writings of all the nonvernacular subjects were in this category. In contrast, less than one-third of the writing samples of the vernacular speakers (31%) were classified in this way. Vernacular speakers showed much higher percentages of repeated patterns in their writings (copied-31%,

invented-23%). By the final observation, while all nonvernacular subjects were writing original, varied messages, more than half the nonvernacular speakers were still constructing repeated patterns (58%).

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0 No writing present.

1 Letters words and/or numbers scattered across page at various angles.

2 Letter strings, basically appear left-right, top-bottom, but words not discernable.

3 Recognizable words arranged in a fairly consistent pattern but not appropriate for English, e.g., right-left, bottom-top, around picture.

4 Overall directionality consistent, but several words and/or many letters reversed.

5 General conventional directionality with occasional lapses often caused by page constraints (e.g., corner turning, beginning new line in middle of page, etc.)

6 Brief phrase or label, only one line, directionality left-right. Include here also labels under individual objects.

7 Correct directionality throughout text (at least two lines) but crookedness of lines to the point of causing line/word order confusion.

8 Conventional directionality throughout.

Figure 12. Directionality Categories

Table 49

Frequency of Ratings on Concept of Message Categories
by Sex, Dialect, and School, at First and Last Observations

	First Observation									Fifth Observation								
	Urban						Suburban			Urban						Suburban		
Dialect:	Vernacular			Nonvernacular			Nonvernacular			Vernacular			Nonvernacular			Nonvernacular		
	M	F	t	M	F	t	M	F	t	M	F	t	M	F	t	M	F	t
Rating:																		
0																		
1	1(16.7)*		1(7.7)															
2																		
3		1(14.3)	1(7.7)															
4	1(16.7)	3(42.9)	4(30.8)		1(14.3)	1(7.7)												
5	3(50)		3(23.1)	1(16.7)		1(7.7)	3(50)	2(28)	5(38.5)	3(60)	4(57.1)	7(58.3)						
6	1(16.7)	3(42.9)	4(30.8)	5(83.3)	6(85.7)	11(84.6)	3(50)	5(71.4)	8(61.5)	2(40)	3(42.9)	5(41.8)	6(100)	7(100)	13(100)	6(100)	7(100)	13(100)
7																		
TOTAL	6	7	13	6	7	13	6	7	13	5	7	12	6	7	13	6	7	13

*Percentages in Parentheses

0 No letters and/or numbers written.

1 Individual or groups of letters and/or numbers scattered across page.

2 Strings of letters, even possibly two or more lines, but no spacing within lines.

3 Strings of letters, possibly including a very few discernable words, with some break down into groups indicating some sense of spacing.

4 Recognizable words, but almost all run-on. Minimal spacing (25% of boundaries or less).

5 Moderate spacing (35-70% of boundaries).

6 Unique or ideosyncratic spacing conventions used (e.g., one word per line, exceptionally large spaces or slashes between each word.)

7 Single phrase or clause (possibly copied) well spaced.

8 Consistently spaces throughout (70%+) with occasional run-on pair or split word (possibly caused by page edge problems). Message a minimum of two clauses and two lines.

9 Conventional spacing throughout message.

Figure 13. Spacing Categories

Spacing and Directionality

Figures 12 and 13 present the categories used to classify children's writings in terms of their use of spacing and directionality conventions.

The children in this study were generally successful in mastering the conventions of spacing and directionality. By the final observation period over four-fifths of all subjects consistently spaced their writings appropriately (Table 50, Figure 14), and over 90% had established consistent patterns of left-right directionality.

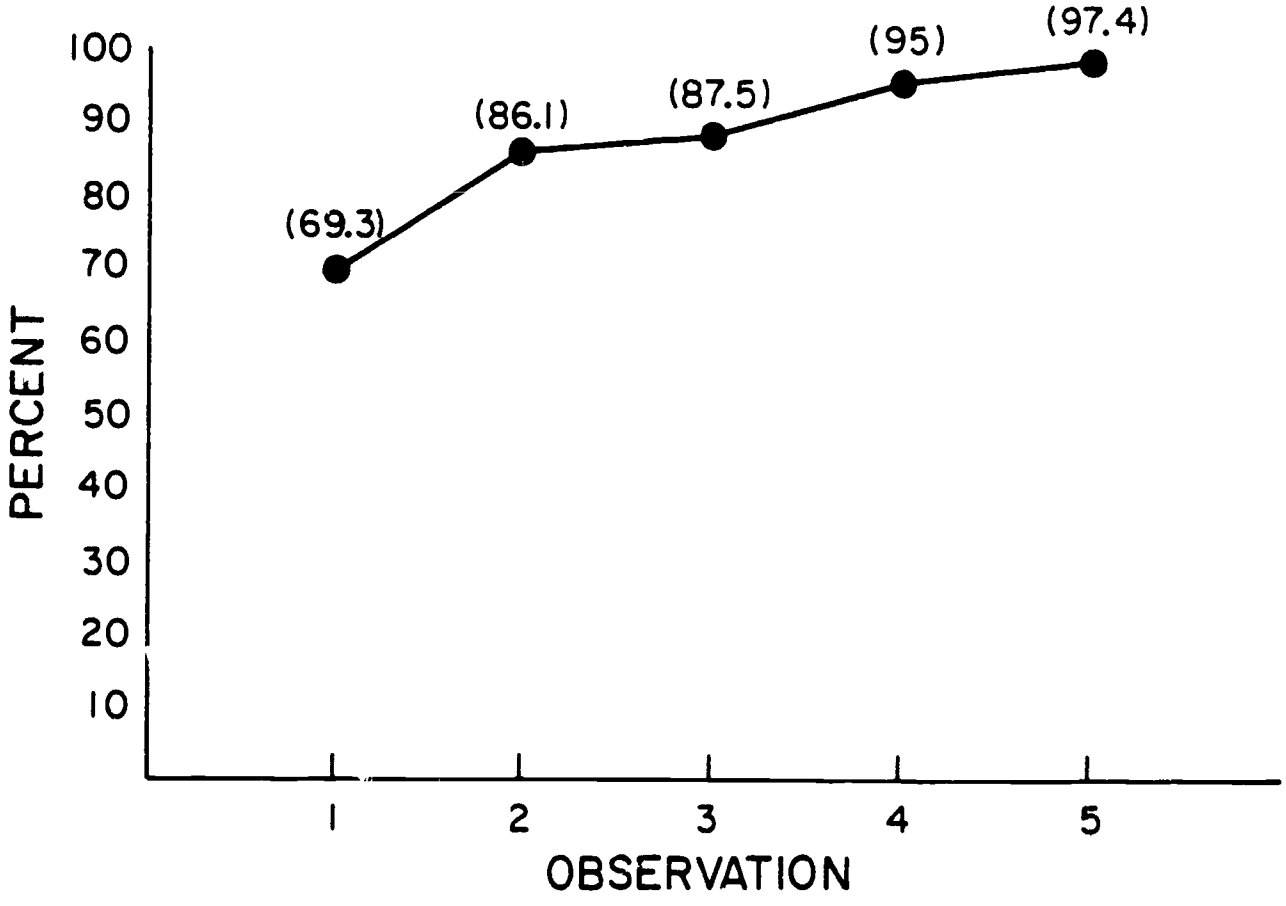

Figure 14. Percent of Subjects Consistently Using Conventional Directionality (Categories 7 and 8) by Observation

As with the Concept of Message Categories, comparisons of numbers and percentages by category revealed noticeable differences among the three populations. (see Table 51)

At the first observation, all of the Suburban, nonvernacular subjects used appropriate spacing between words and sentences at least 35% of the time (Category 5 and above). The majority of these children (54%) were consistent in their use of proper spacing in messages of more than two lines (54%-categories 8 and 9). In contrast, almost one-third of the Urban nonvernacular children wrote messages in which words were rarely spaced (31%). Of the two Urban school populations the nonvernacular speakers were more attentive to word boundaries. This difference is primarily in the percentages for single phrases, well-spaced (vernacular-31%, nonvernacular-15%).

Table 50

Frequency of Ratings Over Observations, for the Directionality Categories

Ratings		Observations				
		1	2	3	4	5
No Writing	0	0(0)*	1(2.8)	0(0)	0(0)	0(0)
Scattered Letters/Numbers	1	0(0)	0(0)	1(2.5)	0(0)	0(0)
Letter Strings	2	1(2.6)	1(2.8)	2(5)	1(2.5)	0(0)
Inappropriate Direction	3	0(0)	0(C)	0(0)	0(0)	0(0)
Some Reversals	4	0(0)	0(0)	0(0)	0(0)	0(0)
Lapses in Conversation	5	4(10.3)	2(5.6)	2(5)	0(0)	0(0)
Simple Phrases	6	7(17.9)	1(2.8)	0(0)	1(2.5)	1(2.6)
Consistent but Crooked Directionality	7	4(10.3)	3(8.3)	3(7.5)	7(17.5)	2(5.3)
Complete Control	8	23(59)	28(77.8)	32(80)	31(77.5)	35(92.1)
TOTALS		39(100)	36(100)	40(100)	40(100)	38(100)

In fact, some children showed knowledge of spacing and directionality conventions before they showed a highly developed sense of how messages are represented in print; letter strings were organized in left-right top down patterns, and occasionally these were even subgrouped into smaller sets to which children assigned message qualities--at the clause, phrase, or word level.

Table 51

Frequency of Ratings for the Directionality Categories
by Sex, Dialect, and School, for First and Last Observations

	First Observation									Fifth Observation								
	Urban						Suburban			Urban						Suburban		
Dialect:	Vernacular			Nonvernacular			Nonvernacular			Vernacular			Nonvernacular			Nonvernacular		
	M	F	t	M	F	t	M	F	t	M	F	t	M	F	t	M	F	t
Rating:																		
0																		
1																		
2	1(16.7)		1(7.7)															
3																		
4																		
5	1(16.7)	1(14.3)	2(15.4)	2(33.3)		2(15.4)												
6	1(16.7)	3(42.9)	4(30.8)		1(14.3)	1(7.7)	1(16.7)	1(14.3)	2(15.4)	1(20)		1(8.3)						
7	1(16.7)		1(7.7)	1(16.7)	1(14.3)	2(15.4)		1(14.3)	1(7.7							1(16.7)	1(14.3)	2(15.4)
8	2(33.3)	3(42.9)	5(38.5)	3(50)	5(71.4)	8(61.5)	5(83.3)	5(71.4)	10(76.9)	4(80)	7(100)	11(91.7)	6(100)	7(100)	13(100)	5(83.3)	6(85.7)	11(84.6)
TOTAL	6	7	13	6	7	13	6	7	13	5	7	12	6	7	13	6	7	13

By the final observation over three-fourths of the subjects in each of the three populations consistently used appropriate spacing conventions. While more of the Suburban school, nonvernacular speakers were consistent (categories 8 and 9 - 92%), the Urban vernacular population had the highest percentage of children who spaced appropriately throughout their writings. (Category 9-58%). As shown in Table 52 and Figure 15, conventions of directionality were also quite easily mastered.

Table 52

Frequency of Ratings Over Observations for the Spacing Categories

Ratings		Observations 1	2	3	4	5
No Letters/ Numbers	0	0(0)*	1(2.8)	1(2.5)	0(0)	0(0)
Scattered Letters/ Numbers	1	0(0)	0(0)	0(0)	0(0)	0(0)
Letter Strings	2	1(2.6)	0(0)	1(2.5)	0(0)	0(0)
Spaced in Strings	3	0(0)	1(2.8)	1(2.5)	2(5)	0(0)
Run-on Words	4	5(12.8)	1(2.8)	3(7.5)	1(2.5)	4(10.5)
Moderate Spacing	5	10(25.6)	7(19.4)	7(17.5)	6(15)	2(53)
Unique Spacing	6	0(0)	0(0)	1(2.5)	0(0)	1(2.6)
Single Phrase, Well Spaced	7	6(15.4)	1(2.8)	0(0)	2(5)	0(0)
Consistent Spacing	8	8(20.5)	9(25)	13(32.5)	12(30)	15(39.5)
Complete Control	9	9(23.1)	16(44.4)	13(32.5)	17(42.5)	16(42.1)
TOTALS		39(100)	36(100)	40(100)	40(100)	38(100)

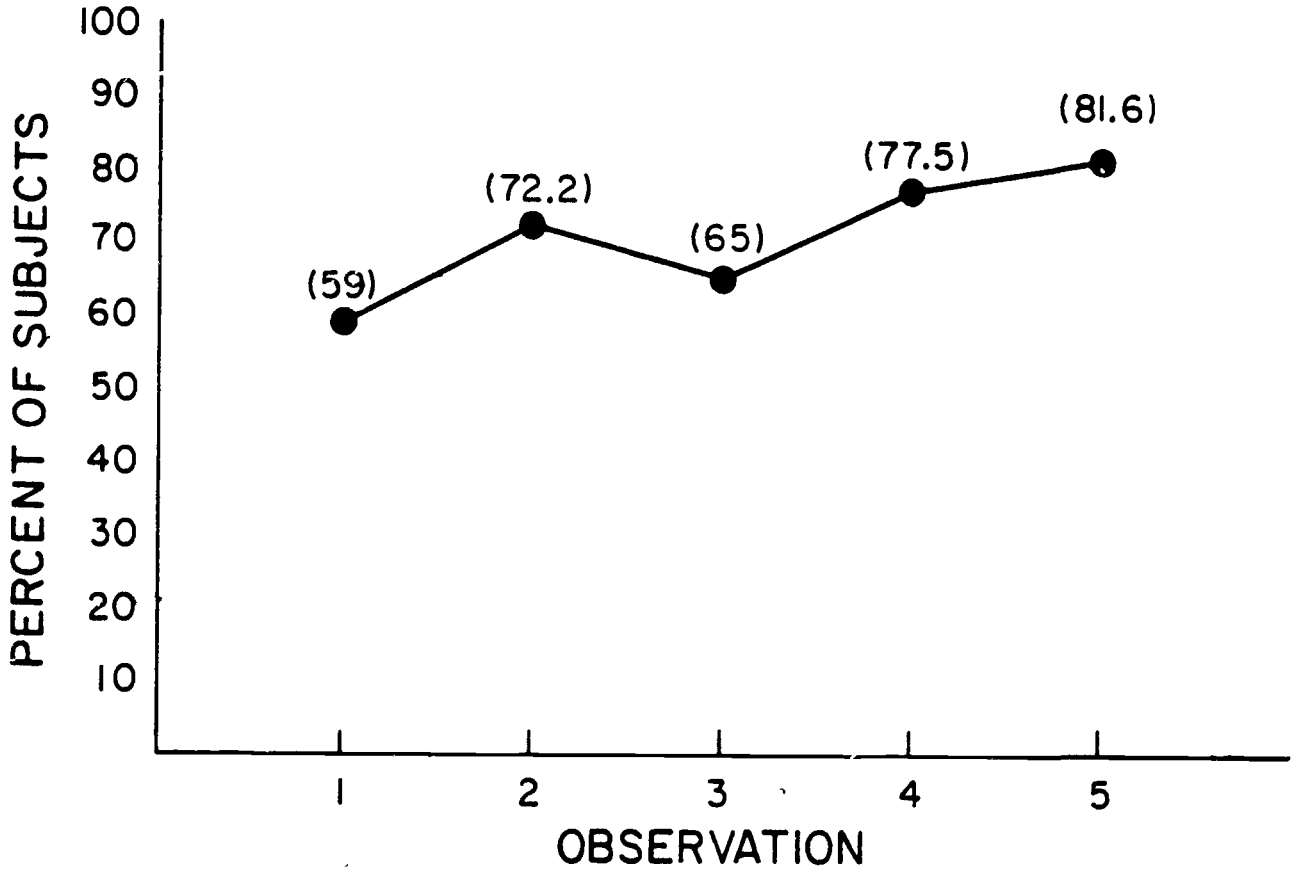

Figure 15. Percent of Subjects Consistently Using Spacing Conventions (Level 7 and above) by Observations

Even at the first observation, all but one of the 39 subjects generally observed left-right, top-bottom organization. By the final observation only three subjects of 38 were classified below the very highest category. Table 53 indicates one difference between groups worth noting. While at the first observation a large majority of nonvernacular subjects were using conventional directionality patterns throughout messages of two lines or more, (Urban-77%, Suburban-85%; categories 7 and 8), many vernacular subjects (54%) had not gotten beyond brief phrases or pictural levels. By the final observation differences in appropriate use of directionality principles had disappeared as almost all subjects gained full control over this convention.

Table 53

Frequency of Ratings for the Spacing Categories
by Sex, Dialect, and School for First and Last Observations

	First Observation									Fifth Observation								
Dialect:	Urban						Suburban			Urban						Suburban		
	Vernacular			Nonvernacular			Nonvernacular			Vernacular			Nonvernacular			Nonvernacular		
Rating:	M	F	t	M	F	t	M	F	t	M	F	t	M	F	t	M	F	t
0																		
1																		
2	1(16.7)		1(7.7)															
3																		
4		1(14.3)	1(7.7)	2(33.3)	2(28.6)	4(30.8)				1(20)	1(14.3)	2(16.7)		1(14.3)	1(7.7)		1(14.3)	1(7.7)
5	2(33.3)		2(15.4)	2(33.3)		2(15.4)	1(16.7)	5(71.4)	6(46.2)		1(14.3)	1(8.3)	1(16.7)		1(7.7)			
6													1(16.7)		1(7.7)			
7	1(16.7)	3(42.9)	4(30.8)	1(16.7)	1(14.3)	2(15.9)												
8		3(42.9)	3(23.1)		2(28.6)	2(15.4)	2(33.3)	1(14.3)	3(23.1)	1(20)	1(14.3)	2(16.7)	3(50)	3(42.9)	6(46.2)	3(50)	4(57.1)	7(53.8)
9	2(33.3)		2(15.4)	1(16.7)	2(28.6)	3(23.1)	3(50)	1(14.3)	4(30.8)	3(60)	4(57.1)	7(58.3)	1(16.7)	3(42.9)	4(30.8)	3(50)	2(28.6)	5(38.5)
TOTAL	6	7	13	6	7	13	6	7	13	5	7	12	6	7	13	6	7	13

Discussion

Conventions of print were operationalized as three fundamental categories delineating concepts of message, directionality, and spacing. Children's written texts were rated on ordinal scales embodying the attributes of each category. In combination, these three scales provided an ordinal index of the extent to which children, over time, incorporated various dimensions of each category within their written texts. Together, the three categories reflected particular dimensions of their understanding of these three conventions of print.

Children's awareness that different combinations of letters are employed to represent consistent relationships between signs and meanings ranged roughly, from 5%, who reflected little understanding of this relationship, to about 59%, who were composing original messages. By the end of second grade, all middle class nonvernacular subjects were writing original varied messages. In contrast, only 31% of the vernacular-speaking lower class children were producing written texts of this sort. By the end of second grade, 58% of the lower class vernacular children were still producing repeated patterns such as, "I like my mom, I like my sister..." As with story structure, there are no grounds for linking this aspect of development to the dialect spoken by these lower class children. Their middle class counterparts, as with story structure, for the most part, already had well-developed concepts of message at the outset of the study. They simply maintained this lead over their lower class schoolmates. Schooling clearly benefitted both groups of children about equally. It would be unreasonable to expect these differences to disappear in only 16 months.

Interestingly, many children demonstrated that they understood spacing and directionality well before they demonstrated a well-developed concept of message. Again there were apparent differences between lower class and middle class children, in both their concepts of directionality, and their concepts of spacing. At observation one, about 42% of the middle class children in the suburban school, as compared with 15% of the urban middle class children and 15% of the lower class children, were spacing between word boundaries at a rate of 35% to 70%. By the end of second grade, 25% of the lower class children were still spacing at this rate, as compared to 14% of their middle class schoolmates, and 7% of the suburban middle class children. The percentage of lower class children who were using conventional or consistent spacing had risen to the same level as their middle class urban counterparts (75%) and to near the level of their middle class suburban counterparts (92%). Spacing is, more than likely, a function of evolving perceptual motor development which, when properly nurtured, is less susceptible to social class influences, which explains the rough parity that existed between the urban children.

By mid-first grade nearly all subjects observed left-to-right and top-to-bottom organization in their texts. Minor differences separated lower class and middle class children at the outset. Both urban middle class children (77%) and suburban middle class children (85%) used conventional directionality in texts of two lines or greater in length. Lower class children were about evenly split in their adherence to conventional directionality.

Chapter 6

Related Studies

Study 1: Children's Use of Conjunctions in Oral and Written Texts

Dictation and writing pose two different sets of problems for writers. Dictation, of course, makes no demands on the composer's ability to spell and scribe letters. Theoretically, only rhetorical and compositional abilities come into play in dictation. But in the sense that the composer must be sensitive to the task that confronts the scribe, this awareness should constrain the rate and timing of a dictated text. Both spelling and scribing, on the other hand, are intrinsic to the production of a written text. They combine with rhetorical and composing requirements to make writing considerably more complex than dictation for the beginning writer. The two tasks differ as well along one other dimension: the presence of a scribe alters the contextual configuration. Theoretically, altering the contetual configuration changes the values of field, tenor and mode of discourse which in turn affect the range of meanings realizable in the configuration. All serve as bases for defining the resultant text, including the cohesive ties, through which the meaning of a text is realized.

Young children appear to rely heavily on conjunction, along with reference and lexis, to relate meanings in the texts they produce (Rentel, King, and Pappas, 1979). Others (Hunt, 1964; O'Donnel, Griffin, and Norris, 1967; Loban 1963) have described the use of conjunction by children as stylistically immature. While such a description may be adequate relative to a specified criterion of adult performance, it has little explanatory significance and it fails to reflect the potential contribution of conjoining to children's maturing control over cohesion and texture. Indeed, an alternative explanation is simply that children can achieve far more precision and subtlety of meaning in their texts through ubiquitous use of conjunctions.

Conjunction is unique among the five kinds of cohesion. It is the one means by which linguistic elements that occur in succession, but which are not related through other structural devices, are connected organically by virtue of the meaning of the conjunction itself (Halliday and Hasan, 1976). These organic meanings may be defined as additive, temporal, causal, adversative, and continuative. There is some evidence that children ignore contrastive temporal meaning in conjunctions and appear to use an order of mention strategy (Clark, 1971; Ferreiro, 1971; Johnson, 1975) to interpret two-event sequences, and only later work out the meaning of temporal conjunctions. Children appear to have some understanding of the meaning "causal" from about two-and-a-half-years onward (Bowerman, 1974), but little is known about the extent to which they extend this meaning beyond verbs, adjectives, and locatives and, in particular, causal conjunctions. Even less is known about their understanding and control of the meanings, "continuative" and "adversative," with respect to conjunctions. Yet, the appearance of these conjunctions in children's oral and written texts is pervasive,

suggesting that they are a primary means for achieving cohesion. The distribution and relative precision of these organic connections, however, is poorly understood.

The hypothesis advanced here is that children sustain a discourse and achieve texture by conjoining necessary elements in succession until an appropriately subtle or precise rendition of what they understand has been established. This study sought to establish the relative distribution of these meanings in two distinct contextual configurations, assuming that configuration and mode differences should lead to variation in distributions. Having argued that increases in task complexity for writing should increase the magnitude of difficulty in the composing component of writing, the expectation is that the range of meanings attempted would be restricted and the density of additive and temporal conjunctions would be greater for writing than for dictation.

Methods

Twenty subjects, ten boys and ten girls, were drawn from the first grades of two elementary schools. Males and females were matched for socio-economic status using a modification of the Index of Status Characteristics (Warner et. al., 1949), a scale which rates occupation, source of income, dwelling type, and dwelling area. Because Warner's occupation categories were dated, Hollingshead's Job Scale was substituted and weightings were adjusted.

Oral and written narratives were obtained from all Ss at two intervals: in March and October of 1979. The tasks involved the production of original narratives. Children were individually asked to dictate an original "story" to a research assistant who scribed the story as dictated. Each dictated story was audiotaped as produced. To obtain writing samples, children were given the task of composing and scribing their own original stories. A research assistant provided encouragement but children were instructed to work unaided, which in large measure they did.

Dictation tapes were transcribed, and both dictation transcriptions and written texts were parsed into T-units (Hunt, 1965) by two scorers who discussed and resolved disagreements. Texts were scored for number of cohesive ties (Halliday and Hasan, 1976) in each of five categories of conjunction (additive, adversative, causal, temporal, and continuative) by two scorers (inter-rater reliability, .98) and ratios of conjoined ties in each category, to number of T-units in the text, were computed to equate length of texts produced. Proportions were analyzed (MANOVA) in a mixed design with one between- (sex) and two within-subjects comparisons (mode of discourse and interval).

Results

Additive, adversative, temporal, continuative and causal conjunctions served as multiple dependent variables in this study. An overall significant multivariate $F = 6.47$ (5,14), $p < .003$ was followed by three univariate analyses with additive, temporal, and causal conjunctions serving as dependent variables. For additive conjunctions

differences were observed for: mode, $F = 21.26$ (1,18), $p < .001$; interval, $F = 4.70$ (1,18), $p < .05$; and sex by interval interaction, $F = 4.85$ (1,18), $p < .05$ (Table 54). A Tukey's H.S.D. post hoc test for sex by interval interaction indicated that (1) girls used significantly more additive conjunction than boys at the first interval and significantly fewer during the second, (2) that boys used significantly more additive conjunctions over intervals but girls did not (Figure 16). Children employed more additive conjunctions in dictation than they did in writing.

Table 54. ANOVA of Additive Conjunctions by Sex, Mode, and Time Interval

Source	df	MS	F
Between Ss	19		
Sex	1	0.028	0.48
Subjects/Sex	18	0.060	
Within Ss	60		
Mode	1	0.449	21.26*
Sex x Mode	1	0.018	0.84
Subjects x Mode/Sex	18	0.021	
Time	1	.143	4.70**
Sex x Time	1	0.148	4.85**
Subjects x Time/Sex	18	0.030	
Mode x Time	1	0.003	0.119
Sex x Mode x Time	1	0.003	0.119
Subjects x Mode x Time/Sex	18	0.023	
TOTAL	79		

*$p < .001$
**$p < .04$
*Geisser-Greenhouse Conservative F (1,18) $p < .001$
**Geisser-Greenhouse Conservative F for Time (1,18) $p < .04$

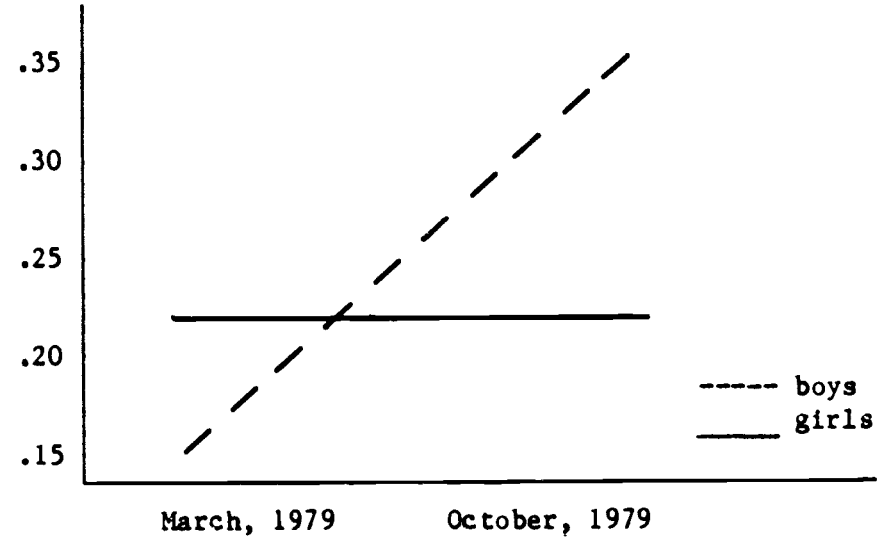

Figure 16. Mean Proportions of Additive Conjunctions in Two Modes of Discourse by Sex and Time.

For both causal and temporal conjunctions the only main effects were for mode—causal, $F = 4.90$ (1,18), $p < .05$ and temporal, $F = 8.19$ (1,18), $p < .01$. More causal and temporal conjunctions were employed for dictation (tables 55 and 56).

Table 55. ANOVA of Causal Conjunction by Sex, Mode, and Time Interval

Source	df	MS	F
Between Ss	19		
Sex	1	.002	.083
Subjects/Sex	18	.020	
Within Ss	60		
Mode	1	.075	4.90*
Sex x Mode	1	.021	1.396
Subjects x Mode/Sex	18	.015	
Time	1	.009	.432
Sex x Time	1	.001	.054
Subjects x Time/Sex	18	.020	
Mode x Time	1	.001	.088
Sex x Mode x Times	1	.001	.079
Subjects x Mode x Time/Sex	18	.016	
TOTAL	79		

*$p < .04$
Geisser-Greenhouse Conservative F (1,18), $p < .04$

Table 56. ANOVA of Temporal Conjunctions by Sex, Mode, and Time Interval

Source	df	MS	F
Between Ss	19		
Sex	1	0.036	1.36
Subjects/Sex	18	0.027	
Within Ss	60		
Mode	1	0.110	8.19*
Sex x Mode	1	0.003	0.20
Subjects x Mode/Sex	18	0.013	
Time	1	0.002	0.08
Sex x Time	1	0.000	0.00
Subjects x Time/Sex	18	0.022	
Mode x Time	1	0.002	0.18
Sex x Mode x Time	1	0.040	3.01
Subjects x Mode x Time/Sex	18	0.013	
TOTAL	79		

*$p < .01$
Geisser-Greenhouse Conservative F (1,18), $p < .01$

Discussion

Contrary to our expectations, children employed more additive, temporal, and causal conjunctions in dictation than they did in writing. No differences were observed for adversative and continuative conjunctions, for mode, sex, or interval. Even though writing appears to be a much more complex task than dictation, apparently, the need to indicate successivity in the communication process, as well as narrative order, that is, the sequential and parallel nature of events and points in the narrative, were overriding objectives where the contextual configuration has within it ingredients of face-to-face communication. The perceived needs of the scribe seemed to outweigh the complex textual demands of writing. Our initial hypothesis regarding the range of meanings children would attempt to communicate cannot be rejected, in that, while length of texts was equated by comparing proportions of conjunction types across modes, length itself correlates only moderately with number of propositions (Kintsch, 1973) in a text. Evidence from other data, to be reported subsequently, indicates that children encoded more Proppian functions in dictation than in writing which suggests a richer broader range of meaning relations were attempted in the dictated

texts. More temporal, additive, and causal conjunctions appeared in the dictated texts as a function of the requirement to tie together a greater range of meaning relationships.

Why boys employed, first, fewer, and then, later, more additive conjunctions than girls, is not clear at this time. Whether these differences can be accounted for by a lag hypothesis, or in terms of textual differences in the kinds of meanings encoded, must await further analysis. What is clear is that consistently, we have observed sex differences; sex will continue to be an important blocking variable until such time as we are able to explain its importance.

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Study 2: Conjoining in Children's Dictated Stories: Developmental Synergy

Understanding the processes by which children come to know the elements and attributes of writing as well as what transpires as they move through successive stages of control over this medium is of vital concern to both teachers and researchers. What epistemic process is likely to give an interesting account of this unfolding development? Data to be presented will argue for a synergistic interpretation of writing development. But first, the problem of development: research on writing, that of experts or of novices, must be concerned with change.

Writers, as other living things, are fundamentally transformed by growth. What constructs are likely to produce, at the very least, an adequate description of these transformations? What kind of model best characterizes active, dynamic, purposeful, adaptive, developing children, interacting with a set of complex structural and semantic relations in a highly variable school environment? These factors, if not well understood, constitute at least the semiotic in which writing is learned.

The most interesting and complete model of development available to date is, of course, Piaget's. His work has been and remains the most persuasive body of knowledge to deal with development and the acquisition of knowledge structures. His theory broadly predicts what children can know at successive stages of development and, more generally, what they will select from the environment to learn. A critical weakness of the theory, however, is that it fails to account for transformations (Nelson, 1977). His opposing dynamics of assimilation and accommodation provide the mechanisms to explain progressive change over time but yield no hypotheses that adequately explain transformations. That is, what will be accommodated or assimilated in any given case has not been tested conclusively and probably never will be, owing to the near impossibility of defining and measuring cognitive structure. Nevertheless, other theories are not more satisfactory in this, or any other, respect.

Both "specific" to "general" (Brown, 1958) and "general" to "specific" (Clark, 1973) theories of development have been proposed. Concepts develop as either specific cases to be hierarchically generalized or as global structures to be differentiated with development. Nelson (1974) has shown, however, that depending on the category, neither progression adequately describes development, for both older and younger children respond variably to different categories.

A variety of grouping experiments (Bruner and Olver, 1963; Inhelder and Piaget, 1964; Vygotsky, 1962) indicate that young children form rather loose clusters rather than true definitional classes, what Piaget has referred to as "preconcepts." These clusters are organized around prototypes (Posner and Keele, 1968; Rosch, 1973) which appear to be indicative of concept formation for natural categories equally true of all ages and not just young children. Finally, Bruner and Olver (1963)

have obtained evidence that younger children develop concepts based upon perceptual attributes while older children rely on functions for establishing equivalence classes. Miller (1973), however, in a set of experiments in which perceptual attributes such as shape and abstract or functional properties (such as "edible") were employed to group objects, has shown that both children and adults determined class membership by functional dimensions more often than they did by perceptual or concrete dimensions. The dimension employed is probably more a matter of context and task demand than one of development.

Another way to view change, movement, or growth, is to view the course of development as a trajectory in which transformations can be separated into parts that are specific to the immediate environment and to the path of whatever is moving in that environment. Each point of observation will generate specific invariants defined relationally among many samples of points. This view, of course, is J.J. Gibson's, applied not to development, but to perception. E. Gibson has extended these notions to perceptual development (Gibson, 1969). Patterned discontinuity, relative to some point in the environment, defined over time, that is, order and change of order, constitute the basic structure of information, and more to the point, also provides a way of accounting for transformations. Information in the Gibsonian sense is defined over a transforming array. Its major virtue is that this construct avoids the necessity of positing endless regresses for every change in the array, whether induced by changes in the trajectory, in the organism, in the point of observation, or in the structure of information. Each change must be regarded as a transformation of the whole array.

Development, then, may be viewed as a process of sampling a structured world which "affords" values for objects and events useful for human adaptation coupled with the organismic capacity to explore the environment in whatever detail permitted by current states of the organism extracting relations and abstracting information. E. Gibson (1977) notes two pervasive trends in development. First, there is an increasingly greater correspondence between what children sample from the information available to them and what the environment affords. Second, there is an increasing economy in detecting and using relations available in the environment.

Along with Gibson's theory of affordances, Bloom's (1975, 1976) notions of developmental synergy have been influential in our conception of how to study writing. With just a bit of fudging, we think there is a comfortable fit between the two theories. Various aspects of language are learned simultaneously and interactively rather than additively. Bloom (1976, p. 1) argues:

> ... the development of language advances on several fronts at the same time, and it is necessary every now and then to reconsider that for the child, the three components of language form, language content,

> and language use come together in the process of language learning. Children acquire language form as they learn something about the content of language; learning form and content comes about as children learn to use language.

We think it not too far-fetched that language form, language use, and language content may be construed as information which children explore as properties of the world useful to them--that is, affordances for learning to mean.

Bloom's hypothesis that language development occurs across a broad front where form, meaning and use operate synergistically implies that children may employ an acquired form unconventionally until such time as they redistribute the meaning intended to a conventional form. The conjunction "and" ordinarily encodes the meanings "additive" and "equative." In the presence of negation, "and" also signals the meaning "adversative." But "and" ordinarily does not encode the meanings "causal" and "temporal." Evidence that children encode these latter two meanings with the conjunction "and" would lend weak support to Bloom's synergistic hypothesis.

Method

Twenty subjects, ten boys and ten girls, were drawn from the first grades of two elementary schools. Males and females were matched for socio-economic status using a modification of the Index of Status Characteristics (Warner et al., 1949), a scale which rates occupation, source of income, dwelling type and dwelling area. Because Warner's occupation categories were dated, Hollingshead's Job Scale was substituted and weightings were adjusted. Dictated narratives were obtained from all Ss at two intervals: in March and October of 1979. The tasks involved the production of original naratives. Children were individually asked to dictate an original "story" to a research assistant who scribed the story as dictated. Each dictated story was audiotaped as produced. Dictation tapes were transcribed and parsed into T-units (Hunt, 1965) by two scorers who discussed and resolved disagreements. Tests were scored for number of cohesive ties (Halliday and Hasan, 1976) in each of five categories of conjunction (additive, adversative, causal, temporal, and continuative) by two scorers, (interrater reliability = .98). Two scorers coded each text for "synergy" by observing the number of "casual" and "temporal" meanings encoded through the conjunction "and." Frequencies of synergistic use of "and" as a ratio of total number of conjunctions per text were analyzed (ANOVA) in a mixed design with one between- and one within-subjects comparison where sex was the between- factor and interval was the within- factor.

Results

Both boys and girls employed "and" synergistically to encode the meanings "temporal" and "causal" (see Table 58). Boys, however, employed

significantly more conjunctions synergistically than girls (see Table 57, $F = 7.54$ (1,18), $p < .05$). No significant differences were observed in these proportions over the interval between mid-first grade and the beginning of second grade. As indicated in Table 58, boys encoded these meanings synergistically, roughly twice as often as girls, averaging about one in four conjunctions, while girls averaged about one in eight. Boys averaged 15.45 conjunctions while girls averaged 16.85.

Table 57. ANOVA of Synergy in Dictation by Sex and Time Interval

Source	df	MS	F
Between Ss	19		
Sex	1	0.201	7.540*
Subjects/Sex	18	0.027	
Within Ss	20		
Time	1	0.045	0.864
Sex x Time	1	0.101	1.928
Subjects x Time/Sex	18	0.052	
TOTAL	39		

*$p < .01$

Table 58. Means and Standard Deviations for Proportions of Synergistic Conjunctions for Dictated Stories by Sex

Boys		Girls	
M	.275	M	.139
SD	.246	SD	.152

Discussion

The middle class children in this sample appeared to employ the conjunction "and" as a robust form through which they are able to achieve a variety of cohesive ties which, conventionally, would be accomplished

with other forms. To achieve textural ends, that is, to conjoin necessary elements in succession until the level of presision of the necessary narrative order or emphasis had been established, these children employed "and" to encode temporal and causal relations. The expectation that children redistribute these textual functions as they develop a larger inventory of conjunctions was not supported by these data. Although there was a decrease in the proportion of "synergistic" conjoined ties for boys by the beginning of second grade, this reduction was not statistically significant. This decrease in proportion was a function of a substantial increase in the number of conjoined ties for boys over the observation period. The frequency of synergistic ties remained about the same for both boys and girls. Thus, while there is some evidence that these children did, indeed, achieve specific cohesive aims as expected, these data are insufficient to support a synergistic hypothesis for development. However, every subject in the sample did employ "and" to realize temporal and causal cohesive ties. The expectation that these meanings will be redistributed eventually to other forms is not unreasonable because they simply are not realized in this way in texts produced by more mature speakers and writers. The question, therefore, is not whether these meanings will be redistributed. The problem is to describe when, how, and under what circumstances. In this sense, then, the evidence does indeed support a synergistic hypothesis for development.

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Study 3: The Influence of Story Structure on Children's Oral and Written Texts

Very early in their development most children are exposed to a variety of nursery rhymes, stories and poetry. Although the frequency and richness of these experiences vary, all children appear to have represented in memory certain features of story conventions and narrative structures (Pitcher and Prelinger, 1963; Applebee, 1978). The nature and frequency of this literary exposure, as well as opportunities to recount stories, may provide important resources for the beginning writer (King and Rentel, 1979). Learning to compose either orally or in writing is, in all likelihood, predicated on what children understand, on what literary forms they control, and on what uses they may make of their linguistic resources.

The "story-for-children" stands out as a well established genre. It differs from other more formal or higher orders of fiction in the obligatory elements it contains and the relationship among them. Many scholars have taken on the task of analyzing the structure of these folk-fairy tales for children: Propp in Russia, Greimas and Bremond in France, Dundes and Favat in the United States. They find that tales vary both in complexity and across the social-cultural situations that gave them birth. However, there are similarities among tales even across cultures and types evidenced in the analyses that have utilized Proppian functions. A key question that arises in these analyses is whether to view the tale from a hierarchiacal paradigmatic perspective or to follow Propp's syntagmatic or sequential structure. Investigators who have begun with Propp's functions to analyze tales of a particular type or from a given culture have adapted them, organized them into hierarchies and clustered them into superstructures bearing lables that reflect the point of view of the researcher and the nature of the tales considered. The French scholar, Greimas, reduced the main Propp functions to five categories: (1) orientation, (2) composition, (3) evaluation, (4) resolution, (5) code (Ballin, 1979; Hutchins, 1977); and Bremond (1970) perceived the progression of the Tale as going from (1) Equilibrium to (2) Degradation, to (3) Disequilibrium, to (4) Amelioration (resolution), to (5) Equilibrium. These labels tend to project a model and progression of the tale that often fails to fit a particular genre of tales, or stories, created for children. Bremond attempted to cope with this problem by proposing a circular model in which the tale might begin with either a satisfactory or deficit state and follow through the predicted cycle of degradation or improvement to resolution and equilibrium. A problem with these categorizations and labels is that they seem to bring a predetermined framework to bear on the tale, one that often fails to fit the simple tales constructed for the enjoyment of children, or those written by children.

A structure proposed by R. Hasan (Consultation, Ohio State University, 1980) that considers the obligatory elements of stories constructed for children offers a simple and flexible structure for

analyzing tales of varied length and complexity. To Hasan, stories children compose form a separate genre of narrative that can be described in terms of five obligatory or crucial elements that make up the story:

1) Placement	4) Final Event	
2) Initial Event	5) Finale or as:	P IE SE
3) Sequent Events		FE F

In contrast to these obligatory elements are arrestive or optional elements which are the nonproductive or nonaction elements that present rituals, attributions, habitual actions and relations to characters. The oligatory elements in the narrative provide an unbiased prospective within which the Proppian functions can be reasonably well related to the events structure.

As noted earlier, traditional rhymes and tales comprise a substantial chunk of the body of literature to which young children are commonly exposed. Favat (1977) has argued from his own analysis of fairy tales that the basis for children's interest in this genre is the expectation of relatively invarian structure characteristics of such stories. These structures represent a conventional schema which serves as a basis for organizing, and we would argue, packaging information in predictable chunks.

Various studies indicate that when children are asked to recall stories, their retellings approximate an ideal structure (Mandler and Johnson, 1977; Stein and Glenn, 1978; Stein and Nezworski, 1978). Further, there is a developmental progression in the structure and story conventions that children learn (Applebee, 1978; Rubin and Gardner, 1977). What they learn appears to be influenced more by input than retrieval (Thorndyke, 1977) and, as stories are retold over longer time intervals (a day, a week, or even months later), reproduction skews even more toward a sterotypic story structure (Bartlett, 1932; Rubin and Gardner, 1977).

The present study is an attempt to examine the extent to which familiar folk tale structure forms the basis for organizing and packaging discourse during the first stage of writing development.

Method

Twenty subjects, ten boys and ten girls, were selected in equal numbers from the first-grades of two schools. Subjects were matched for socio-economic status using the Index of Status Characteristics (Warner et al., 1949), a scale which rates occupation, source of income, dwelling type, and dwelling area. Because Warner's occupational categories were dated, Hollingshead's Job Scale was substituted and weightings were adjusted.

Oral and written narratives were obtained at two intervals (March and October, 1979). Children in groups of four listened to a fairy tale and retold the story to "an adult who had never heard the story." Each recall was audiotaped. Next they were asked to write stories and were provided folded paper or small booklets to further the story writing process. The early pieces produced covered a range of topics and types of writing. Some were single statements or lables, others were longer but primarily stated ongoing, and often, unrelated events. Others were stories of the everyday world, or of the fictive imagined world. While most productions were expressive in respect to sense of audience and use of context-bound language (Britton, 1971), some had certain markers that set them off as stories.

Specifically the writing collected at the two intervals was classified as follows:

Interactional. Scripts that were personal accounts, dialogic in nature and produced from the point of view of an active participant: one who wanted to share or represent information, to direct, to relate to others or "to get things done." The best example of this category is writing that accompanied surveys in mathematics or directions about how to play a game or make a corn husk doll.

At the other end of the continuum was the writing to present experience or to tell a story with no interaction or influence of an audience in any way except to entertain. The stories in this category were of two types: chronicle and tale.

Chronicals. The chronicles were defined as stories of events that run parallel to what happens or might happen in a child's life, yet are expressed in a story frame. For example, "One day a little boy and girl went to Disneyland. They saw..." It has thematic unity, story conventions, and characters and actions that parallel non-fictive experience.

Tales or fairy stories. The tale or fairy story is a narrative that sets forth events and circumstances that may reflect life but has no essential dependence on historical fact. These have thematic unity and conventional story markers, but are built on fantastic characters and events. They are stories that could not have happened.

Compositions. Between the personal interaction pieces and the stories, one finds in schoool-produced writing, texts that are neither interactional nor story; they are pieces written for the teacher that usually depict some aspect the child's ongoing life experiences. Hasan (1980)* has labeled these pieces, compositions, and has said that they

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*The authors acknowledge the contribution of Ruqaiya Hasan to their thinking about story elements and the types of stories produced by young children. The categories of (2) Personal Interaction, (3) Composition, (4) Chronicle, and (5) Tale, are hers. The authors have related them to the Britton model.

can be identified by the situation in which they are produced, i.e., meeting the expectations of the school and teacher. These texts tend to lack unity except for naming participants and and are usually in the present tense with all units kept at the same level: e.g., "My mom is big. I go to school. My mom loves me." Children would readily classify these as non-stories.

Figure 17 shows these four categories of emerging writing within the Britton, et al., (1971) model of discourse. The model shows the basic contribution of expressive language in the development of both talking and writing and indicates the key roles of speakers/writers as participants or spectators in producing various modes of discourse (see Figure 17).

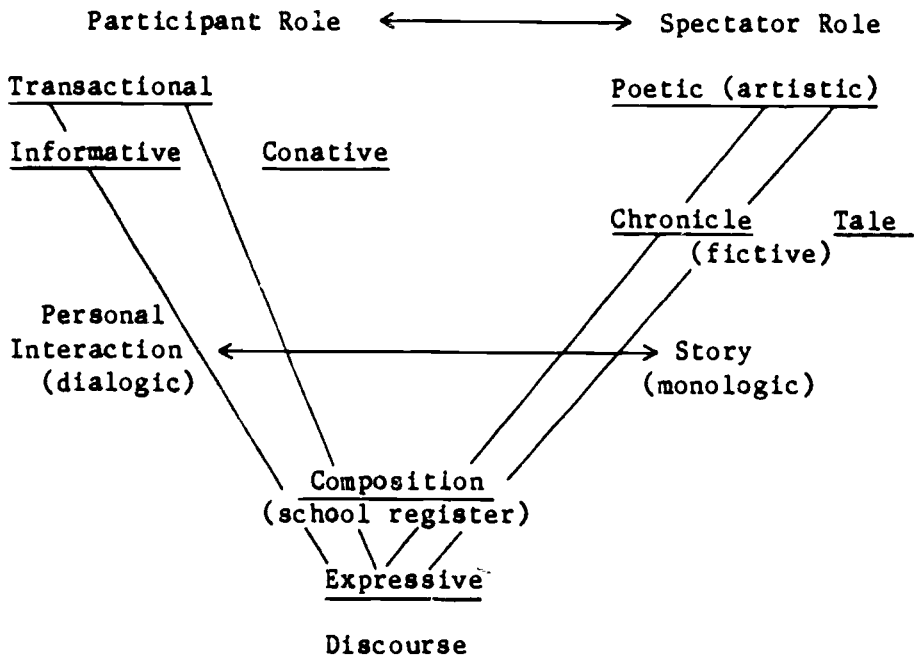

Figure 17: Mean Proportions of Additive Conjunctions in Two Modes of Discourses by Sex and Time

Tapes and writing protocols were then transcribed, recast into T-units and scored both for a slightly modified version of Proppian functions (.79) and for the five obligatory story elements proposed above (placement, initial event, sequent event, final event, and finale). Function scores were summed and transformed into proportions to equate for the number of functions in the two different tales the children heard and retold. Since for the March observation many of the written protocols the children produced could not be classified as we have defined stories, only the oral texts were compared for Proppian functions over the two observations (March and October 1979) in a one-between and

two-within subjects analysis of variance, where sex served as the betweens variable and observation as the withins variable. Both oral and written protocols were then scored for the number of obligatory structures (0-5) included in the texts, and the written texts were compared over the two observations, using the nonparametric Sign Text. An overall comparison incorporating oral and written texts was precluded by the fact that all oral retellings on both observations with the exception of one subject incorporated all the obligatory structures; thus, only the written texts promised to provide a meaningful developmental comparison. Two additional comparisons for length of written texts were made correlating length with number of obligatory structures and testing for differences in length (t for paired comparisons) over the two observations. Finally, a comparison of number of functions with number of event structures was incorporated post hoc to describe the strength of the relationship between the two structural measures employed in the study.

Results

For the oral texts, no significant differences were observed, either for sex or observation, on the measure of Proppian functions. Table 59 summarizes these findings.

Table 59. Comparison of Functions by Sex Over Two Retellings (Winter 1979, Fall 1979)

Source	df	SS	MS	F	p <
Between Ss	19	6200.6			
Sex (A)	1	490	490	1.54*	.25
Students (S/A)	18	5710.6	317.26		
Within Ss	20	3699			
Observation (B)	1	.4	.4	.002	
AB	1	78.4	78.4	.39	
SB/A	18	3620.2	201.1		
TOTALS	39	9899.6			

*p < .25

Significant differences also were noted for length of written texts over the two observations (t < .005) as shown in Table 60.

Table 60. Differences in Length of Written Texts Over Observation

	Observation 1	Observation 2
Mean	4.(5	11.06*
Standard Deviation	3.186	9.33

*$t(19) = 4.14$, $p < .005$

Length of written texts and number of obligatory structures were moderately related (.47) as were length and Proppian functions (.59). Obligatory structures and Proppian functions were also moderately related (.65).

Discussion

The middle class children in this sample appear to have acquired and represented most of the functions typically found in the fairy stories to which they were exposed in each observation we made. The two stories they listened to contained, respectively, 25 and 21 functions, counting repetitions. The mean proportions of functions recalled and incorporated in the texts these children produced were high for both observations (.77, .78).

Writing, however, is another matter. As noted above, many of the protocols written during our first observation could not be classified as stories, in part, because of the procedures we employed to obtain writing at this early point in development and, in all probability, because many children tend to describe everything they write as stories. Of the 20 children, eight wrote stories that could be so classified in March, while 18 did so in October. The differences in stories they produced were substantial. Eleven of the children wrote stories that included four of the five obligatory elements in what we previously defined as a "children's tale," as compared with only two who did so during the first observation. The length of all written texts increased significantly which in itself is not particularly striking, but as noted above, length was moderately correlated with both obligatory structures and functions. As these children wrote longer compositions, they also produced more "well-formed" stories containing a greater number of functions. But while functions and obligatory structures were moderately correlated (.65), they appeared to account for somewhat different traits. The inclusion of obligatory structures seems to be the product of a growing sense of what constitutes a well formed story--each structure accounting for a new set of relationships between the successive episodes. On the other hand, the inclusion of additional Proppian functions is more than likely a reflection of an awareness of the role of optional and recursive elements within a story. These optional elements consisted mainly of

functions which embroidered the sequent event--functions such as, interdictions violated, trials, and testing of the protagonist, magic, and similar functions which served to complicate the plot rather than alter the relations in a given way. In addition, locations, states, attributes, and personna could be expanded through these functions.

The differences between written and oral texts clearly indicate the impact that the medium itself imposes on production at this stage in development. All but one of the oral texts for both observations incorporated all obligatory structures. Further, the mean proportion of functions included in the oral texts for both observations plainly indicates the superior control children have over these elements within the more familiar medium. However, the differences that were observed in written texts in the relatively short period of six months, suggest a surprisingly rapid pattern of development within the genre of writing we have explored. These very young children possess a remarkable competence that, if nurtured and encouraged, can be expected to grow in depth and breadth.

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Chapter 7

Case Study:

T.S.--One Boy's Struggle To Write

Observations of T.S. (6:11-8:1) were begun in March of first grade and continued through May of grade two. T.S. was selected for the case study because it seemed that he was destined to have some unique problems in learning to write. A bright curious boy, but with only fleeting interest in most things, T.S. was in the lowest quartile in reading progress. He had a slight speech impediment that the therapist in the fall of second grade diagnosed as "a slight frontal lisp for S and Z, very distorted R and R blends, and no L blends." One year later his speech had improved with only "a slight problem with R and R blends." These problems, though minor, influenced both his reading and spelling.

T.S. was a happy, secure and confident child who was popular with both his peers and teachers, partially because of his everflowing antics to get attention. These sometimes got in the way of his systematic learning, as both adults and children tended to think his antics funny or cute, and so expected less serious work from him.

Emphasis in this report is on the classroom events that surrounded T.S.'s writing and the teacher and peer relationships that supported it along the way. In addition to the numerous pieces of writing that grew out of the on-going curriculum, formal data collections were made at three evenly spaced intervals. Each time a written story, a dictated story, and a story retelling were collected. These data are used as illustrations throughout, but especially in regards to story structure and cohesion.

First Grade: March to June

In first grade, T.S. was one of several children grouped with the kindergarten class. This was not unusual, as the entire school was organized into multi-age groups. Observations during this first year showed that T.S. was constantly on the move, lighting at a table or on the floor to engage in any one activity for about three minutes. Writing was not one of the things T.S. ever chose to do; nor did he stay with it very long when required by his teacher to do so. Undoubtedly, spelling was difficult for him. Copying words or statements from charts probably was a struggle, too. His efforts early in March show this struggle to compose (or copy) a statement and to spell everything correctly.

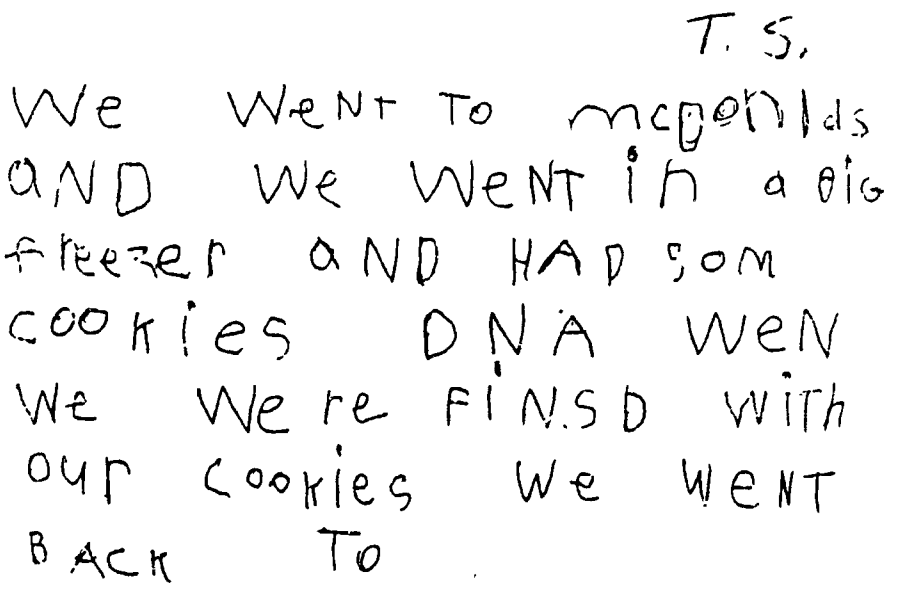


Figure 18: Spelling is a Struggle for T.S.

T.S.'s teacher systamatically taught writing as a part of the reading and integrated language program. She emphasized correct spelling and letter formation and used charts and experience stories to give children access to correctly spelled words. The content for writing usually came from a particular class focus of study, e.g., a trip to a park, bakery or grocery stor The writing often was a caption or statement related to a pictur series of pictures. Thus, T.S.'s first text in our assigned writing collection stemmed from a class trip to a super market where children were taken behind the scenes and shown the bakery, including a huge refrigerator and food storage area. The text below closely resembles the piece previously produced and shown (above). Although asked to write a story, the text T.S. wrote was a report of an event. Everything is spelled correctly, probably because of the lists of words posted in the classroom.

We went to McDonalds
and we had some cookies
and we had a tour in McDonalds
and we went to a big Freezer
and it was fun.

T.S. was not especially interested in reading or listening to stories. And his preschool experience in this area seemed to be meager. His first story retelling of Squawk to the Moon, Little Goose, though adequate in terms of story information and structure, showed a lack of experience with story language and conventions. His first sentence, as well as his intonation in retelling, suggested participatory discourse rather than a storyteller's solo performance.

See there was this duck.
And she said, "Be good children"
And she took the children into bed.
And she said "I'm going to run
next door to Mrs. Hen's house"
And then she said, "Good's good and
bad's bad; you see."

T.S. began in a conversational or interactional voice, as if seeking or expecting a response, if only a nod of the head, "[You] see there was...," and used no marker of timelessness, as "Once there was ..."

He told of a duck when the story was about a goose and gos ngs--probably because the former was in his spoken vocabulary and the latter was not. Later, T.S. said, referring to the farmer's speech,

"Dog gone it:
Can't a guy get any sleep around here?"

Whereas, the text, read to T.S. immediately prior to retelling was,

"Confound it
What's the matter?
Is that you Little Goose?
What's on your mind that you
wake up a man in the
middle of the night?"

At another point, T.S. said,

"It looks like a big hunk of cheese
as big as the moon."

It appears that, although T.S. reclaled the facts of the story fairly well, he did not easily shift into the story register and use formal or literary language. His first dictated story, which probably was inspired by a television film, was more a description of an image than a story. It began abruptly, gave some setting information followed by one action (pursuit-crashing) and the rest was a description of the setting. T.S.'s dictation:

a monster was up in a planet
he was chasing a rocket
it was on the same planet (...)
some rockets were surrounding the planet
and one rocket had a man out of it
and all of the same rockets came
off of the planet earth
and one rocket was going aroung it
the rocket was about to crash into
another rocket

In his dictated story, as well as in his story retelling, T.S. relied heavily on reference and lexical cohesion as text forming strategies. In fact, he sometimes was overly explicit as is shown in the first four lines of his dictated story. To make clear the cohesive relation of the planets in the text above, T.S. used lexical reiteration (of planet), but also further marked the cohesive relationship with a definite reference (the same planet). Conjunctions were used with greater frequency in story retelling than in dictation, but in both modes there was great reliance on the additive "and."

The retelling text T.S. produced was much longer than his dictated story, 56 versus eight units; yet, the mean T-unit length was stable acrossthe two modes -- 7.5 words in story retelling and 7.8 words in dictation. The length of his dictation text was closer to his written one which was five units. The written text contained much shorter T-units, however, and lexical items were used less frequently than in the two oral productions. In writing, T.S. used conjunctions, specifically, and along with pronoun reference to achieve cohesive relations.

Second grade: September to June

In the autumn of 1979, T.S. entered the second grade and a new classroom which contained both second and third grade pupils. The teacher operated a rich informal classroom with a strong orientation toward literature and a commitment to the American work ethic. The children were expected not only to enjoy literature but to produce writing of their own.

The first observation, late in September, was a pleasant shock to the investigator, who observed T.S. working with a friend. T.S. was absorbed in a project that required considerable writing. For 25 minutes, reluctantly stopping for recess, T.S. and his friend were busily writing and chuckling over their work. They were developing a game for their classmates to play. The game was based on a folktale that was familiar to the class. The boys' work involved developing the general directions as well as stating the specific expectations and outcomes of each step in the sequence of playing. The devilish delight the two boys

displayed came during their creation of demonic and humorous tasks for game participants who were unfortunate enough to land on perilous spots on the game board. For example,

> You lost the magic ring.
> Go back 10 spaces to
> look for it.

In the first month of school T.S. was required to do much more than make up games. He was expected to listen to stories and poetry daily and to seriously think and talk about them, as well as study in other curriculum areas. The first project that involved the whole class required the children to produce some biographical data. The teacher initiated it by bringing some material about herself and her family to school and suggesting that the children might prepare similar materials about themselves as a way of helping classmates to know them better. The teacher's work established the model--demonstration--of a simple way people could tell about themselves.

Difficult, though it was for him, T.S. produced an album of four pages showing a family of four with two cats:

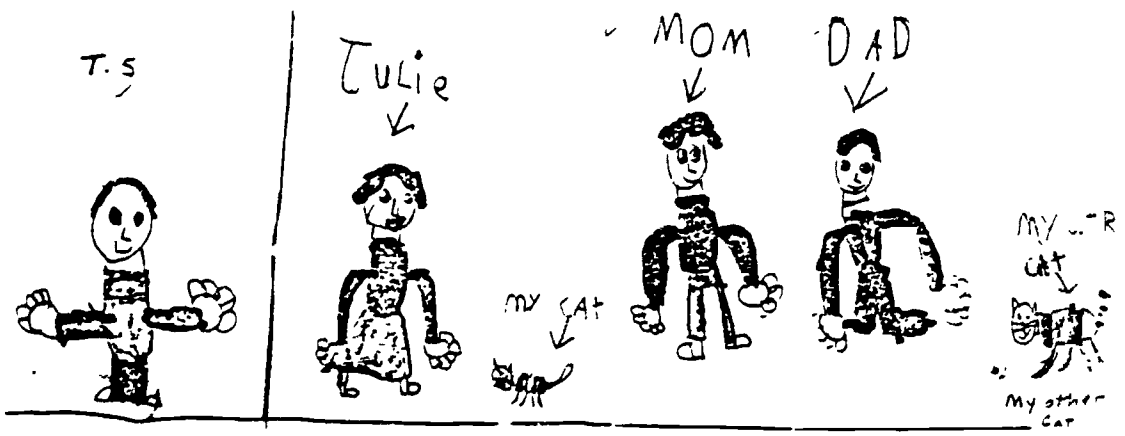
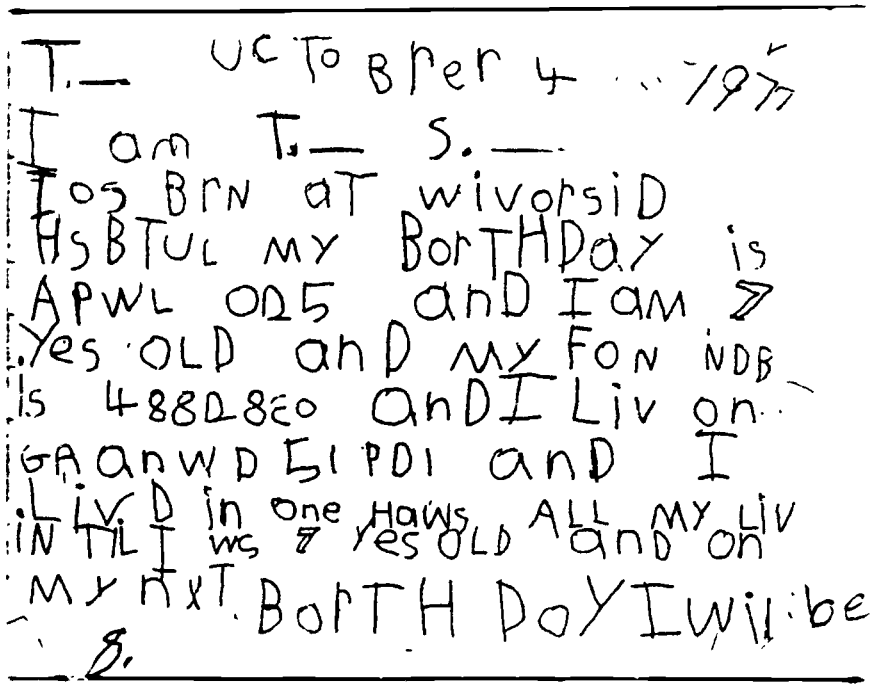


Figure 19: Family Portrait by T.S.

He wrote about his birth and other pertinent information which was later typewritten to put in his book. (All examples are reduced from full 8 1/2 X 11 page size.)



I am T.S. I was born at Riverside Hospital. My birthday is April 5, and I am 7 years old.

My phone number is 48i —— . I live at 15. Gren ——. I lived in one house all my life until I was 7 years old.

On my next birthday, I will be 8.

I thi my first soft toy was a soft rabbit. He was blue all over, and he was white on his chest. I like him. He lost one eye, and he fell on the floor.

Figure 20: An Autobiography and Its Interpretation

As a part of the autobiography, T.S. wrote about a very early experience:

I thec my fuist sft toy ws a sft rabbit He Bul ghd all ovr and He wus wit on his chast and I lic Him and he lost one Ivy and He val on the vlor of thn I nvor agan The End	I think my first soft toy was a soft rabbit. He was blue all over, and he was white on his chest. I like him. And he lost one eye, and he fell on the floor, [often?] I never again. The End

In the second grade, T.S. was in a class where children were expected to write, just as they were expected to read and do sums. Writing was a natural part of the ongoing life of the classroom. Among the opportunities for writing, were regular 'thought rambling' sessions in which children sat quietly, after outside or in some unusual spot, to observe, sense, reflect, and express their thoughts or feelings about what was on their minds or was going on around them. During the first week of the term when the children went outside to observe and record their thoughts and impressions, T.S.'s attitude toward writing and school were clearly expressed:

School (Sept. 7, 1979)

I hate school I think
it is dumb But I think
recess is fun and I Like
writing It is wierd.
I see children at the playground

We can see the influence of the teacher and peers on T.S.'s views on writing as he was working his way through the text. But if we compare this piece to the thought rambling in Figure 21, one month later (Oct. 9), we can see the extent to which T.S. has taken on the task of writing for himself.

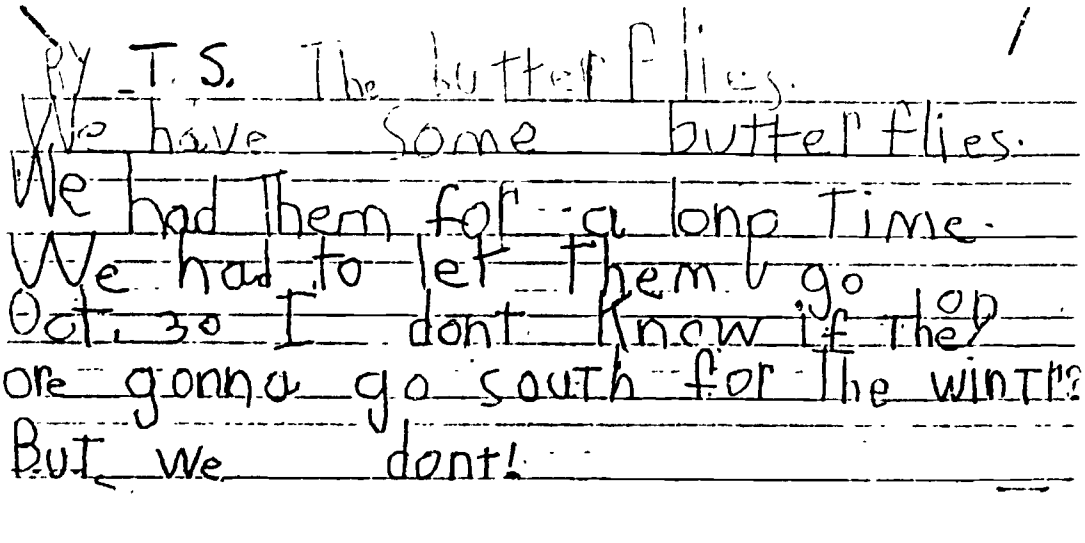
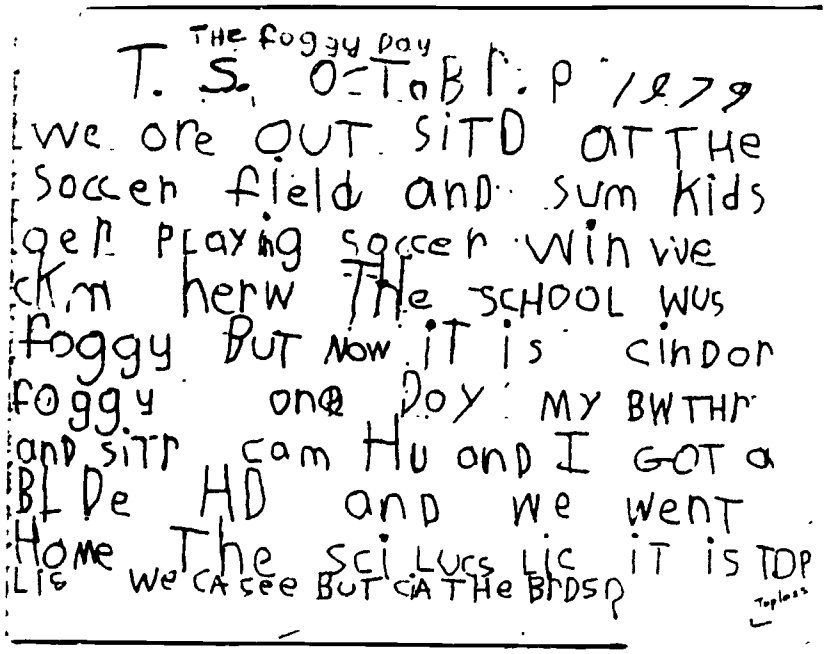


Figure 21: T.S. Begins to Take Responsibility for His Writing

The writing at this point showed considerable change in thought and attitude when compared to the piece written in the first week of school. Writing wasn't - isn't - easy for T.S. What he wrote was directly related to what was under way in the class at the time. His first story grew out of a study of witches; but interest in rabbits, butterflies, and snow, prompted reflections on these subjects too. His writing tended to be expressive--close to the writer and context bound. But he wrote for a variety of purposes: to report, to reflect, to tell a story.



Translation:

The Foggy Day

We are outside at the soccer field and some kids are playing soccer. When we come here the school was foggy. But now it is kind of foggy. One day my brother and sister came here and I got a bloody head and we went home.

The sky looks like it is topless.

We can see but can the birds?

Figure 22: Imaginative and Context Bound Writing

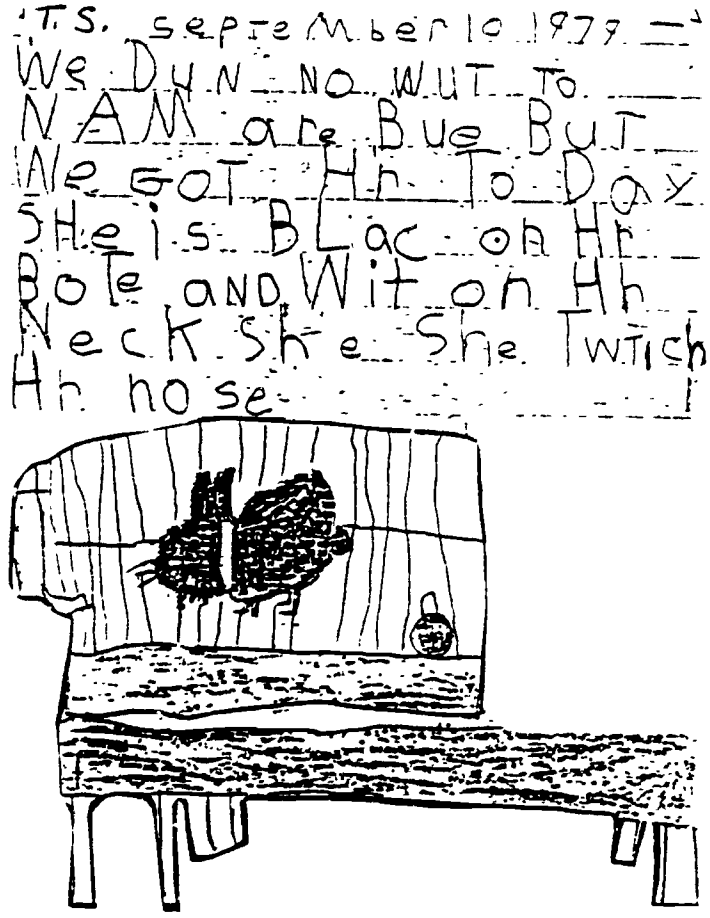
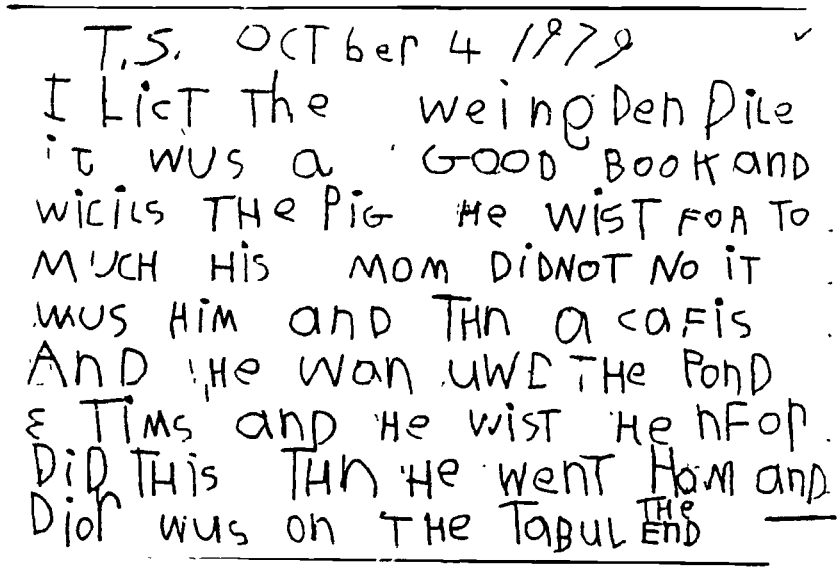


Figure 23: Writing That Grew Out of a Classroom Acquaintance With Bunnies

The class had a rabbit for a few days at the beginning of the fall term. T.S. observed it in its cage, and produced the following picture and text:

We don't know what to name
our bunny but we got her
today.
She is black on her body
and white on her neck
She she twich(es) her
nose.

On October 4th, a book the teacher read to the class prompted the following piece, only part of which is translatable.



I liked the Wing-ding-
dilly and it was a good
book and WICLIS the pig
He wished for too much
His mom didn't know it was
him. And then a - contest
And he won.

And he wished.
Then he went home and
dinner was on the table.
The
End

Figure 24: A Book Read to the Class was the Source of This Piece

At this time, the study of witches was underway in T.S.'s class. The children were investigating witches and goblins, both in stories and poems--what they looked like, what they did, where they lived, and what people thought of them. The teacher made available to the children more than two dozen books and stories about witches. She read many aloud and held discussions about witches and how they lived. Naturally, several children wrote stories with witches as main characters. T.S. became caught up in the general enthusiasm of the class and wrote, with the interest and support of a peer, about the Hungry Witch:

There was a hngwe	There was a hungry
witch. Sce ets little	witch. She eats little
cid's. One day tow	kids. One day two
little cid's kam to	little kids came to

Hor Kasul And sce	her castle and she
Kot one of	caught one of [the]
cid's.	kids.
and trok hr to	And took her to
he Kasul and ws	her castle and was
adaot to eyt hr	about to eat her
win a dok at the door	when a knock at the door
and the gorwl sad	and the girl said
My whe wuo	My, "Who [are] you?"
And the wtich got the door	And the witch got the door
and No bude wus thir	and nobody was there
But the Prwins and	but the prince and
the prwins wus wrning	the prince was running
away on his hrs and	away on his horse and
The witch wus mad	the witch was mad
The witch w?<s ubot to	The witch was about to
eyt her but cey	eat her but [she]
didint The witch sant	didn't. The witch sent
the guwul out tow git	the girl out to get
sum food and	some food and
A old wumin sad	A old woman said,
Sauy thes matic wrd's	"Say these magic words
and you will be fwe abwcdbw	and you will be free: abracadabra!"
So the gwull went home	So the girl went home
and sad ab wcdbw!	and said, "Abracadabra"

This extensive effort was followed by a similar, but shorter, story, only partially reproduced here, which contained a magic transformation.

I dont no but a lon	I don't know but a long
lon tiym aog thrw	long time ago there
ws a witch How livd in	was a witch who lived in
a Kasul. One day to lit	a castle. One day two little
kid's com to the Kasul	kids came to the castle
and they trnd into ston	and they turned into stone
and the wtich ws old	and the witch was old
and wor scin was	and her skin was
weicolt and cie is ugle	wrinkled and she is ugly.
[--continued]	

Between September and mid-October, T.S., with great support from his teacher, had rid himself of the need to spell everything correctly. Free of this constraint, he gave attention to expressing meanings and became mildly enthusiastic about writing stories. He enjoyed writing alongside a friend. And, he liked to share, "try out," or "rehearse" his intended plots or villainous acts in talk before writing them. His teacher, when discussing T.S.'s work later commented, "Though writing continued to be difficult for him, T.S. became excited about it and proud of the unusual events or elements he put into his stories."

His writings at this point showed that T.S. was becoming sensitive to elements of stories: he usually had a formal beginning, consistently used past tense, gave setting information, followed with an initial event, a related follow-up action, sometimes a final event, but seldom an ending. His stories seemed to dwindle away or end abruptly, which may have been due to a change of interest or discouragement at the demands of the task. Nevertheless, the two witches tales, though imitative of the stories he was hearing at the time, indicated that T.S. was trying to construct a tale in the secondary world of experience. His characters were a witch, a prince, a girl, and an old woman, and he employed magic and transformations to achieve his ends.

At this point, however, both his dictated story and assigned writing sample reflected a television film more than they reflected the world of folktales, which he was experiencing at school. Although the dictated story was longer than that given the previous spring, it was still a skeleton, or outline, of a plot, with little elaboration. The written story T.S. produced seemed to be a further abbreviated version of the dictated story. Here is an example of T.S.'s assigned writing in November of grade two.

189-A

The Bwut	The Bridge
Tiw was tis bwut	There was this bridge
and dab gis trid	and bad guys tried
tow dstwou it and	to distroy it and
the good gis trid	the good guys tries
tow dtic it and tha	to protect it and they
had a big war and	had a big war and
the good gis sovid	the good guys saved
the bwut	the bridge
The	The
end	end.

Dictated Story; November, Grade 2.

once there were these bombers
and they tried to destroy this bridge
and they had airplanes and bombers
and they couldn't reach it
so they got some tanks
the bombers were too high
and this other team tried to protect it
but some guys got shot
so the other team got their bombers and tanks
and they tried to destroy the bad guys
and the good guys won.

In the dictation, T.S. used the time indicator once, putting the text in story genre. But the written text began simply with "There was..." In neither story, does he specify what bridge. But, in the written text, he is explicit about the characters which he fails to clarify in the dictated story. Who is "they," in lines two, three, and four? Are the bombers in line six the same as those in lines one and three? He tries to be specific about the bombers in line nine, through the use of prosadic emphasis on "their." In the dictation, it appears T.S. attends first to the efforts of the "bad guys," villains, to destroy the bridge, and secondly, to the "good guys," actions to save it. But who got shot in the eighth line? And what occurred between the last two lines? The story ends abruptly, failing to tell how "the good guys tried to destroy the bad guys," and ends simply with, "the good guys won."

189-b

While the dictation is more elaborate than the written tale, it has, in addition to a beginning, the same dramatic actions -- functions -- as the written tale: villiany, struggle, and victory. They differ in the amount of optional information given, in the number of T-units produced, and in the use of exophoric reference. The dictations were longer (11 versus five units), but were more constrained by unclear reference.

Writing for Different Purposes

In January, T.S. constructed a calendar for the first month of the new year and made a record of what he had learned:

I made a calendar of January 1980
I found out that 1980 starts on
Tuesday and ends on Thursday.
There are seven days in one week
Sunday is the first day of the week
Saturday is the last
There are four Sundays...(in January?)

In this piece of writing, as well as in the one about Butterflies above, the words were spelled correctly. T.S.'s spelling did not miraculously improve at times, rather he often made notes or a rough copy in a notebook, checked his work with his teacher and then recopied it. This routine was usually followed in the writing of "thought ramblings," which sometimes were begun outside on the school grounds and finished later in school. Moreover, words in frequent use in projects were easily available in the classroom.

T.S.'s writing continued to expand during the winter and spring, both as a carrier of his meanings, and as a part of the stories he created. When his class in March was engaged in an extensive project studying "eggs," both in real life and fiction, one assignment for T.S. was to make a survey of how his classmates liked their eggs cooked for breakfast. (This was a marvelous assignment for a child who liked to be up and about in the classroom!) After making a chart (with the help of his teacher) for recording the information to be gathered, T.S. summarized his data, transferred it to a bar graph, and wrote a summary of his findings. At this point, T.S.'s spelling was becoming much easier to read, closer to standard spelling. But, again, he had many of the key words available to him:

I took a srva of which is your fawar
way to cook eggs.
20 pepl laick scrambled 6 pepl laick
frid Poached has 2 pepl
hard-boiled has 3 pepl
soft-boiled has 3 pepl
so more peple laike scrambled.

Although he wrote in mathematics and other subject matter areas, T.S. continued to produce stories because stories were the great preoccupation of his class--everyone was an author or struggling to be one. The classroom and curriculum were saturated with stories and beautiful books--folktales, fairy tales, realistic stories, alphabet books, poetry, and an array of informational books. This influence began to show as T.S. wrote his own stories that often were imitations of books he liked. The Five Chinese Brothers prompted T.S.'s personal version of "7 Chinese Brothers" with the following beginning:

Once a poor poor man had 7 sons,
He was so poor he had to get rid
of them.

The story, too long to reproduce here, continued for five pages with illustrations and a copyright date! Of special interest however, was the story's beginning which showed T.S. was becoming aware of how the storyteller sets the scene for the tale that follows.

For the "egg" study, T.S. produced a fiction story, as well as his mathematics work. This was a six-page book, again, illustrated -- with egg-shaped characters -- and including a copyright date.

The Old egg

Once there [was] an old
egg He wus not
mired (married). But he
now (knew) a yug (young) egg.
One day he went up to the mrcit (market).
and the egg allmost
Got stipt on. Win he
Got urring (everything) he nedid
he went Back in.
His egg Crtin (carton).

(over)

Win (when) the egg got in the
Crtin he sud (saic) I am
not going to do that ugh? (again)

The capital letters and punctuation in this story are exactly as T.S. had them in his book. He seemed to be using the rule to capitalize first words of sentences, but he continued to capitalize certain letters (G, B) and also the first letters of important words (Stipt, Crtin) as he had done in his earlier writing. His punctuation is still uncertain, but he uses periods correctly 75% of the time, and employs an exclamation mark for emphasis, but avoids using commas or quotation marks.

In the spring, the class was engaged in a variety of projects and incidental interests. With improved weather, they went outside to observe and jot down impressions for thought ramblings. The teacher continued to read poetry rich in visual images and sound. A song in ABC book form, All in the Woodland Early, by Jane Yolen, made a strong impression on many children, including T.S. His thought rambling on the first of May showed the pattern and feeling of the poetry filtering into his production.

One morning early in may

it smells like dew
in a matter of Fact.
It always smells like dew
One morning, one morning.
the sun turns on it's warm rays of light
the cars roll by
every morning in may
like changing sins (signs) All over
Doors opening and shutting
I see dogs lying in front of me
One morning in may

Here again, the capital letters, periods, and spelling are just as T.S. had them in what was probably a second draft. His attention obviously was on getting ideas down. Although T.S. didn't write his impressions in poetic form, he showed a budding appreciation for poetic elements and images.

During this same period of time, the children became involved in a rather extensive project of studying horses. The focus was primarily informational, but, as usual, fiction books intermingled with the factual ones in the classroom. T.S.'s particular study involved reading various books to discover the kinds of work which horses do, or have done, to help people. He presented his findings in a booklet which had a picture

(in water colors) and a statement on each page. Again, one particular book became a model for his production and greatly supported his spelling.

Big work horses pull heavy wagons.
They pulled stage coaches.
Horses pulled street cars
Some horses pulled soldiers and
heavy cannons (and so on).

His spelling here was correct in most instances because it was supported by the books he was using. This was perhaps the most careful piece of work, both in drawing and writing, that T.S. had done. And he was extremely pleased with the result, and eager to share his book.

T.S. was greatly influenced in his writing by two friends whose knowledge of, and interest in, stories was much greater than his. One of the boys found writing very easy, but the other was closer to T.S. in his ability to produce stories on paper. T.S. would write first with one and then the other--each boy producing his own story or book, but discussing it and getting or giving help every step of the way. "The Whiz Kid and the Time Machine," composed alongside a peer, was the longest piece of writing T.S. produced, and his pride in the accomplishment more than matched his endurance.

The Whiz Kid and the Time Machine

In the year 198.) A time machine
was made. In a gleam of a second
the Whiz Kid was there
but the man didn't know who to
send in the time machine,
Then they had an idea They
Put the Whiz Kid in it. and
He went back 5 years to 1980.
He met a boy named T.S. walking
home. T.S. said who are you the
Whiz Kid He said What's that
ask the Whiz Kid It's a Book
It's Called Whiz Kid and the
Time Machine You can come
home with me Did you come in
A time machine Yes.
(Humm if I can just get in it
and go up 5 years to 1985)
T.S. found the time Machine
behind a tree.
The men said to Tom
Welcome Back Whiz Kid
T.S. said where's my
room?
So the men led T.S. to his
room Then T.S. Realized it
wasn't earth That night
T.S. snuck in the time machine
and went to earth. He went home
and went to Bed. The end

Probably the most significant aspect of this production was the fact that T.S. sustained his interest and the required linguistic powers to complete a story taking it from the beginning situation, through one problem and then another, until finally, reaching a satisfactory conclusion. The punctuation is sparse but is used at the ends of some sentences and one question mark is appropriately used, although others are omitted. Capital letters are use at the beginning of most sentences, but also for some words and some words and letters (He, Book, Realized). The spelling has been changed in the transcript to assist the reader; however, most of the original is readable. For example,

p. 2 in a glem of a suckit (second)
the wiss kib wuse ther.

p. 6 So the min lud T.S. to his Room
Then T.S. ReLULISd it wasn't
eerth.

The children in T.S.'s class had been writing so many "pretend" stories that originated in fiction that the teacher asked them to focus on themselves, to think about something that had happened to them--last night, last week, or a long time ago, and to write it in an interesting way. T.S. decided almost instantly to write about going to the hospital, an event that remained a big moment in his life. His text, along with a translation, is given below, just as he wrote it, in respect to punctuation, spelling, capitalization, and wording.

Wuns a long time ago i Bock my tuo.
and i hat to go to the hasptul Will
how i budid my tuo Wus I Wus rneing i
the haws and I ram it into a wal. my tuo
wus uner a cuver of Blud. it chockit me
for a minit But Luckule my mom
and Dad are Dacer's. it's 8:00 at
Night.
[Once a long time ago I broke
my toe. And I had to go to the
hospital. Well how I busted
my toe was I was running in the
house and I rammed into a wall.
My toe was under a cover of
blood. It shocked my for a
minute. But luckily, my mom
and dad are doctors.]

This is a very personal account, undoubtedly talked about at home, which T.S. very much wanted to write, and which he produced from his own language resources. For this piece he couldn't rely on books or word lists around the classroom to get spellings of words he needed. He nevertheless felt confident in his ability to produce the message and that his text would find a receptive audience. The language--rammed, busted--is characteristic of the vigorous way T.S. lives and talks. The "under a cover of blood" is an interesting example of a child having the meaning to express a condition, but not exactly the language pattern.

For the last assigned writing sample, T.S. fictionalized some of the subject matter being studied in May when data was collected. The emphasis was on money. T.S. already had produced a piece of work in

which he had shown in picture and writing, how much money he had spent--and how much he had left--after making certain purchases at a store. His story in a six-page book was illustrated and titled, The Penny Who Ate Too Much.

The Penny Who Ate Too Much

once there was a penny who was lonely in a bank
so he decided to go around Columbus
he wonder if there were poisonous (...) snakes
he ate a tree
in a half of a second the tree was gone
he got bigger
he rolled to [the] school
and everyone fled in terror except T.S. who was
under the loft
and also was D.V.
T.S. got chased by the penny
and the penny caught T.S.
but he didn't eat T.S. or D.V.
then he went to the big building
and T.S. and D.V. went (...) with him
and in a half a second the big building was gone
he rolled to the outskirts of Columbus
but T.S. and D.V. got away to Texas
and the penny had a stomach ache
T.S. and D.V. came back from Texas [the end]

The Range of Writing

A sequential listing of some of the writing T.S. did over the nine months he was observed in second grade shows the extent and variety of his texts. But, more impressive perhaps, is the evidence about how writing arises from, and is a part of, the work and communication of the class room. In the autumn term, T.S. write the following:

An autobiography--My First Soft Toy
A thought rambling--I hate school
An observation about the classroom rabbit-
The Fis War Bit(ing)
Direction for two games (written with a partner-
The Wing Ding Dilly, and The Hungry Witch
A survey and summary of "What Kind of Apples
Classmates Liked Best"
A thought rambling--Foggy Day
A witch story--A Witch in a Kasul
An observation--Butterflies

During the winter term, he produced:

A calendar and summary for January
A thought rambling--White Snow
A story--Personal Version of Five Chinese Brothers
A Survey report and fiction story about eggs
A brief report on "Animals that Eggs"
A Calendar and summary for February
A survey and summary of "Which Animal Characters are Favorites"

In the spring, his writing included:

A fiction, in book form--The Time Machine
A research report, in book form, on horses
A personal account about watching T.V.
A personal account--I Broke My Toe
A short fiction story of an egg personified
A booklet report--(pictures and copied statements about the respiratory system)

T.S. was a child in constant motion, darting about from one thing to another and jiggling his feet when sitting still. His attitude toward school work, according to his teacher, was to get it done and get on to something else. Only when he found enjoyment in writing with two classmates, and then pride in the responses other children and the teacher gave to his stories, did T.S. begin to take his writing seriously. When he read his "Wiz Kid" story aloud, one of the children called attention to "a gleam of a second," and said, "Oh T.S., that's good! Did you write that?" Grinning from ear to ear, T.S. shook his head, "Yes." The teacher commented that this was her most thrilling moment in her long patient work with him.

Despite his handicaps in handwriting and spelling, T.S. was bright and willing to take risks with the mechanics of writing, in order to get his ideas down. From early in the second grade onward, T.S.'s attention was focused primarily on meaning, rather than on the surface features of writing. He would sometimes make a second copy after the teacher had corrected the spelling, but even then he would miss some words. Nevertheless, T.S.'s control over the conventions of writing showed considerable growth.

Handwriting: Although some of his classmates turned to cursive writing in the latter part of second grade, T.S. continued to use manuscript, but he made dramatic changes in his script. His writing decreased in size from four centimeters, used in the spring of grade one, to less than one

centimeter, used in The Wiz's Kid, written in May of grade two. At the same time his speed of writing increased and, as his spelling improved, became more readable.

Cohesion Devices: Within the categories coded for cohesion, T.S. made extensive use of reference, lexical items, and conjunction in all modes. The use of reference was fairly constant across the two oral modes, although his first retelling was considerably longer than his first dictation (56 verses eight units). There was a dramatic decrease in the use of reference in writing, and a similar increase in the use of lexical items, which probably was related to the lengths of the texts and to the form of writing. Length of written and dictated texts increased from five to 19 units for the first, and eight to 24 units for the second. But units of story retelling decreased from 56 to 26. Texts in the three modes also changed in mean T-unit length, with increases in the personally composed texts--from 7.8 to 8.8 words per T-unit for dictation, and 5.4 to 7.2 for writing. Much of the increase in the dictated texts was due to extensive use of quoted speech, as shown in the following lines from T.S.'s final dictation:

(line 14) And he heard this news bulletin on
the radio that said, "If you find
a runaway elephant from
the zoo, the reward will be
two thousand dollars."
(line 15) And the boy said, "Hey hey,
he's my friend."

Length of T-units in story retelling declined slightly, perhaps reflecting T.S.'s general lack of interest in retelling stories or continued difficulty in managing the story conventions and language of a skilled writer. It is interesting to observe, however, that when T.S. attained fluency in writing, as in his last story, the T-unit length (7.2 words) closely approximated that in the two oral modes.

T.S. had better control over exophoric reference in dictation than in story retelling or writing; however, the 10% use of exophoric reference in the second retelling probably was due to the nature of the story which had three female characters and may have caused ambiguity in pronoun reference. His last written text was free of exophoric reference except for one instance of formal exophora where he assumes the reader's shared knowledge of a particular loft:

and everyone fled in terror
except for T.S. who was under the loft.

Development in Story

Over the 16-month period, T.S. grew in his ability to construct stories using dramatic functions. His first dictated story contained only one function, in addition to the setting information; his second had setting information and four functions; and his final one contained nine functions, as well as extensive setting information and a satisfactory ending. When the first dictation is compared to the last, the elaboration of setting information is dramatic. For example, the first dictation began abruptly with "A monster was up in a plant," while the last is much more explicit:

(1) One morning in the Columbus Zoo
people were looking at a very
angry elephant because people
wouldn't fee him.
(2) And it say please feed the
animals
instead of do not feed the animals.

Similar growth was observed in writing. While the first text was not a story, and thus, was not coded, the second contained a beginning and three functions (villainy, struggle, and victory). And the final story about the penny who ate too much was coded as having been constructed around a beginning and seven functions.

To conclude, T.S. began first grade with some handicaps in learning to write: an inclination to be extremely active physically and a short attention span, a speech impediment that undoubtedly caused difficulties in spelling, and probably very little experience with written language in stories. He was a television child with images in his head lacking the descriptive/narrative language to express them. He had a story schema which is revealed in his story retellings, but little sensitivity to literary language and conventions. But, in his favor, was his intelligence and confidence in himself, plus a classroom teacher who understood individual differences and provided for them, who valued written language and learning, and who maintained realistic expectations for her students to produce quality work.

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Appendix A

Sentence Repetition Test of Standard English

SENTENCE REPETITION TEST

CRITICAL STRUCTURES FOR GROSS SCORING

GENERAL DIRECTIONS

The test you are about to administer is a sentence repetition task where all but two sentences have a word, several words, a phrase or a word ending underlined. These underlined elements in each sentence are critical structures for scoring. If a child omits or changes these structures in any way, print the child's response immediately above the underlined structure, or, in the case of an omission, circle the omitted structure. Answer any question the child raises and be yourself. If a child wishes to discontinue the test, do not use any extraordinary means to obtain a response, but, merely reassure the child that the decision to discontinue is O.K. Take the child back to the room and select another child to test. Someone will assist you with the selection.

Try to stay close to the procedures on the following pages. Yet, if an occasion arises which the procedures do not address, use your best judgment and improvise a response. If you are unsure as to how you should proceed, interrupt the testing and consult with the project coordinator for your building. (Barrington - Barbara Pettegrew or Martha King; Douglas - Joanne Golden or Gay Pinnell)

Record both the child's response and the stimulus sentences. Do not try to turn the machines on and off unless, of course, you must for some reason other than trying to save tape. If a child delays too long, play the sentence again, but if on the second trial, the child makes no response, go on to the next sentence.

THE CLASSROOM WARMUP AND TESTING PROCEDURE follow.

SENTENCE REPETITION TEST

CRITICAL STRUCTURES FOR GROSS SCORING

ADMINISTRATION PROCEDURES

CLASSROOM WARMUP

TEST ADMINISTRATOR: Children, we are going to play a game today. The game is an easy one to play. I will read you a sentence. When I finish it, I want you to say the sentence back to me. Does every body understand how to play the game?

ANSWER QUESTIONS.

TEST ADMINISTRATOR: Alright, let's play the game.

DO YOU EVER DREAM IN TECHNICOLOR?

CHILDREN: DO YOU EVER DREAM IN TECHNICOLOR?

TEST ADMINISTRATOR: WE DIDN'T SEE ANYBODY INSIDE THE STORE.

CHILDREN: WE DIDN'T SEE ANYBODY INSIDE THE STORE.

TEST ADMINISTRATOR: Very nicely done children. Now, I would like one of you to come and play the game with me. Who would like to play? Fine (Child's name if you know it).

TAKE THE CHILD TO THE TESTING ROOM.

TESTING ROOM WARMUP AND PROCEDURE:

TEST ADMINISTRATOR: What is your name? (Print child's name in upper right corner of "Critical Structures for Gross Scoring - Sentence Repetition Test.") How are you today? Do you remember how to play the sentence game we did in your room? (If the child does not understand, repeat the directions and preliminary sentences.) If the child appears to understand the task, say,

Now when we play the game, a teacher's voice on this tape recorder will say the sentences. Right after you hear her say a sentence, you say it. O.K.? Only this time, I will record your voice on this other tape recorder, and when we are finished, you may listen to your voice if you would like to. Are you ready? Good, now listen for the sentence and say it back.

Do the same thing with each sentence until we finish.

START THE TAPE RECORDER ON WHICH YOU ARE TO RECORD THE CHILD'S RESPONSES BY PRESSING THE "RECORD" AND "PLAY" SWITCHES SIMULTANEOUSLY. THEN, PRESS THE "PLAY" SWITCH ON THE OTHER RECORDER.

YOU SHOULD BE ABLE TO RECORD TWO CHILDREN ON ONE SIDE OF THE TAPE AND TWO ON THE OTHER. PRINT EACH CHILD'S NAME ON THE LABEL. (A NEW LABEL WITH AN IDENTIFICATION NUMBER WILL BE FIXED TO THE TAPE AT A LATER DATE.)

Preliminary sentences

Do you ever dream in technicolor?
We didn't see anybody inside the store.
Have you ever gone on a long trip?

Stimulus sentences

1. Three of four boys were cleaning up the playground this morning.
2. My father's brother came to stay with us for a few months.
3. Even Robert couldn't lift the box by himself.
4. At the fair they have those little cars that you can ride in.
5. In the evening he eats supper, reads the newspaper, and goes to bed.(a)
6. They're going to ask him if he wants a bicycle for his birthday.
7. Whose money did he use to buy the tickets for the game?
8. There was hardly anything left to eat by the time we got there.
9. Dwight got some new shoes, but he hasn't worn them yet.
10. Ask them whether they saw the accident or not.
11. The new glove cost five dollars and sixty cents. (a)
12. There is one man on our block who worked in the circus.
13. Four or five girls were standing around watching the fight.
14. Sharon's boyfriend met her at the dance on Friday.
15. Each person has to fill out the score sheet himself.
16. If I have enough money, I'm going to buy some of those sports magazines.
17. When Michael walks to school, he cuts through that alley. (a)
18. I'm going to ask Anthony if he has any money left.
19. We heard a strange noise outside about eleven o'clock.
20. If we can't use David's house for the party, whose can we use?
21. If they didn't have enough food to go around, why didn't they say so?(a)

22. Ask the teacher whether we have to use ink.

23. Did you recognize the one who had on the cowboy boots?

24. Two men and three women were waiting for the bus.

25. They were at their grandmother's house when the fire started.

26. The three brothers started out for New York by themselves.

27. Give me some of those cards and I'll help you sort them.

28. When he comes home from work, he is always tired and hungry.

29. Let me ask him if he has seen my dog around here.

30. Ask her whose ring she's wearing.

31. If he hasn't signed up for the contest yet, he'll have to hurry.

32. I asked him whether he has to work late tonight.

33. There was one man who tried to get away, but they shot him.

34. Several of my friends were invited to the Christmas party.

35. Anthony was taken to the hospital in an ambulance.

36. They said that Mary's best friend ran away from home.

37. They talked by themselves for awhile and then they left the party.

38. I've seen both of those men around here before.

39. Robert says he likes to play tackle better than touch. (a)

40. Let me see if I can remember that girl's name.

41. Find out whose name is on the teacher's list.

42. My sister won't go out because her boyfriend hasn't called yet.

43. Ask Sandy whether she knows the right answer.

44. Did you find out the name of the girl who just moved in next door?

(a) Any transposition of any underlined form is scored as '1'; multiple transpositions are not separately scored.

Appendix B

Modified Index of Status Characteristics

INDEX OF STATUS CHARACTERISTICS

A. Occupation	Scale Value	Weighting
Executive, proprietors of large concerns, major professions (law, medicine, engineering, religious, those requiring graduate degrees).	1	4
Managers and proprietors of medium-sized businesses, lesser professions (teaching, ministry, nurses, undertakers, librarians, newspaper editors, reporters, social workers, optometrists, chiropodists).	2	4
Administrative personnel of large concerns, owners of small independent businesses, semiprofessionals.	3	4
Owners of small nonindependent businesses, very small businesses, clerical and sales workers, technicians.	4	4
Skilled workers (electricians, plumbers, carpenters).	5	4
Semi-skilled workers (truck drivers, watchmen, gas station attendants, waitresses, small tenant farmers).	6	4
Unskilled workers (heavy labor, odd jobbers, janitors, scrubwomen, domestics, migrant farm laborers).	7	4

B. Source of Income	Scale Value	Weighting
Inherited Wealth	1	3
Earned Wealth	2	3
Profits and Fees	3	3
Salary	4	3
Wages	5	3
Private Assistance	6	3
Public Assistance and Non-Respectable Jobs	7	3

C. House Type	Scale Value	Weighting
Excellent - large, single-family, good repair, large lawns, landscaped.	1	3
Very Good - slightly smaller but larger than family needs would dictate.	2	3
Good - slightly larger than utility demands; conventional and less ostentatious than the two higher categories.	3	3
Average - one and one-half to two-story, wood frame or brick, single family dwelling. Conventional with lawns but not landscaped.	4	3
Fair - same as "average" but not well-maintained. Small houses in excellent conditions.	5	3
Poor - badly run-down but repairable.	6	3
Very Poor - deteriorated beyond repair; unhealthy, unsafe, littered, slum.	7	3

D. Dwelling Area	Scale Value	Weighting
Very High - high status reputation; clean, trees, parks, and little turn over.	1	2
High - slightly lower reputation; fewer pretentious homes.	2	2
Above Average - above average reputation unpretentious, clean, well-cared for.	3	2
Average - wage earners, working class home.	4	2
Below Average - close to factories, business section, or railroads. Rundown conjested, heterogeneous population.	5	2
Low - run-down, semi-slum; some debris and houses set close together.	6	2
Very Low - slum, poor reputation, debris, houses little better than shacks.	7	2

Appendix C

Retelling Procedures

Retelling Procedures

1. Setting up
   1-1. All listener/researchers and reader/researchers should plan to arrive at the school approximately thirty minutes before the data collection is scheduled to begin to check the following:
      a. that the room which has been scheduled for the retelling session is available;
      b. that the room has been arranged for the retelling session, i.e. a table to sit at with an outlet close by for the tape recorder, and two chairs opposite each other: one for the listener/researcher and another for the child, situated as to minimize the possibilities of visual distractions and minimize the temptation to tamper with the tape recorder, and maximize the quality of the recording.

2. Reader/researcher tasks
   2-1. When coming to select the children, the reader/researcher carries with her several (approximately 3-4) books including the target book which is to be read during that session.

   2-2. The reader/researcher chooses the children who will listen to the story during any given session being careful to satisfy the following requirement: the number of children who will participate in the retelling will be equal to the number of listener/researchers available on that particular day.

   2-3. Next, the reader/researcher takes the children into the reading session which shall be conducted outside the classroom to prevent interruptions during the reading. As the reader/researcher takes her place, she immediately selects the target book to be read, allowing no time for possible comments from the children on that or any other book.

   (story introduction)
   I HAVE A STORY TO READ TO YOU TODAY. I ENJOYED IT SO MUCH THAT I WANTED TO SHARE IT WITH YOU. THERE ARE SOME TEACHERS HERE TODAY WHO DON'T KNOW THIS STORY. AFTER I READ THE STORY TO YOU, I WILL TAKE EACH OF YOU TO ONE OF THE TEACHERS SO YOU CAN TELL THE STORY TO THEM. GET READY TO LISTEN.

   (Short pause to allow yourself to open the book and get everyone's attention.)

   2-4. At the conclusion of the reading, the reader/researcher goes through the book a second time, showing each page, with its illustration, in turn. Introduction to the review of pictures:

   LET'S LOOK AT THE BOOK AGAIN.

Pausing only to allow for children's comments, the reader/researcher does not question or offer any additional comments of her own.

2-5. After the review of the pictures has been completed, the reader/researcher randomly assigns each child to a listener/researcher. Introduction to the listener/researcher:

(child's name), THIS IS (Ms., Mrs.) (listener/researcher's name) SHE'S A TEACHER WHO IS INTERESTED IN STORIES. SHE HAS NOT HEARD THE STORY THAT I JUST READ TO YOU, AND SHE WOULD LIKE TO HEAR YOU TELL ME THAT STORY.

3. Listener/researcher tasks

3-1. The listener/researcher takes the child into the listening room and once the child and the listener/researcher are seated, again explains the task to the child. (Notes: Check at this time for children who are chewing gum or eating candy.) Explanation of the task:

(child's name), I'M INTERESTED IN STORIES. I KNOW THAT (Ms., Mrs.) listener/researcher's name JUST READ A STORY TO YOU. I DON'T KNOW THAT STORY. TELL ME THAT STORY. I'M GOING TO TAPE RECORD YOUR STORY TO SHARE WITH OTHER TEACHERS WHO ARE INTERESTED IN STORIES LIKE I AM. BUT FIRST, LET'S MAKE SURE THE TAPE RECORDER IS WORKING. AFTER I PUSH THESE BUTTONS - SAY YOUR FIRST AND LAST NAME. (Push play and record - allow child to say his full name - then push stop button.) O.K. LET'S GO BACK AND SEE IF THE TAPE RECORDER IS WORKING. (Rewind the tape, play the tape so that the child can hear his name, then stop tape.) ALL RIGHT, WE'RE READY. TELL ME YOUR STORY NOW. (Press play and record buttons.)

3-2. The following problems may arise during the course of the retelling session. Listed with each possible problem are suggested neutral responses for the listener/researcher. Obviously it is impossible to predict all problems which may arise during the retelling session. However, the following examples provide a framework from which the listener/researcher can draw in dealing with problems which may arise.

a. An obvious brief partial retelling

CAN YOU TELL ME ANY MORE ABOUT THAT STORY? or

IS THERE ANY MORE YOU CAN TELL ME ABOUT THAT STORY?

The disadvantage to these questions is that they are questions which require "yes" or "no" answers. However, these probe questions are neutral in nature, and do not set up an "and then" response which may bias the cohesion; thus they are preferred.

b. If, in addition to a brief partial retelling, the child asks you if he can leave.
Of course you as the interviewer must decide on the specifics of that child and that particular situation, but two options are available to you:

1.) Encourage the child to make another attempt:

I'D LIKE YOU TO TRY AND TELL ME MORE OF THE STORY.

2.) Allow the child to return to the room with a simple

THANK YOU.

The first option is the preferred way of dealing with this situation, but the second option may be used if the child seems upset about the retelling session for any reason. Use of the second option does not damage the probability of the success of subsequent data collection from that child. An occurrence of this nature should be referred to the classroom researcher.

c. Long pauses
Do not interrupt pauses or turn off the tape recorder. The child may be "planning" what he wants to say next. Any interruption on your part may bias what the child intends to say.

d. Long pauses and it is obvious that the child is unsure about continuing because he apparently has forgotten a part. A neutral but partially positive response is necessary in this case. Saying "tell me what happened next" or "go on to the next part" implies that there is a next part, which may or may not be the child's intentions. Therefore, a non-verbal gesture of interest or approval is preferred. Should the child ask you if he should continue, simply respond

YES.

e. The child's voice begins fading and you're not sure if his voice is being picked up on the tape recorder.
In the beginning of the retelling session, you should be able to tell if this is going to be a problem when you "test" the tape recorder. (See Section 3-1) But, if during the course of the retelling you find that this becomes a problem, say:

(child's name), COULD YOU SPEAK LOUDER PLEASE SO WE CAN HEAR ALL OF YOUR STORY?

f. The child goes off on some tangent which is obviously not part of the story.
In the past this has not been a problem in the retelling session. However should this situation arise, try not to encourage or discourage these types of responses. A neutral question is suggested:

IS THIS PART OF THE STORY? or

IS THIS PART OF THE STORY THAT (Ms., Mrs.) reader/researcher's name READ TO YOU?

This type of reaction on the part of the listener/researcher should minimize extraneous comments in a completely neutralized fashion.

g. The child begins to tamper or play with the tape recorder.
Hopefully, careful setting-up (See Section 1-1.) will eliminate or at least minimize the probability of this occurrence. Should this happen though, again a neutral response is needed:

I CAN'T LET YOU DO THAT TO THE TAPE RECORDER.

If the problem continues, you may find it necessary to hold the tape recorder yourself to prevent the child from tampering with it.

h. The child wants to hear himself on the tape recorder (the whole story).
Allowing the child to hear himself on the tape recorder initially will satisfy many of the children. (See Section 3-1.) But for the occasional child who wants to hear the whole story, an appropriate response is:

WE DON'T HAVE TIME TO HEAR ALL OF IT, BUT WE CAN REWIND THE TAPE SOME SO YOU CAN HEAR PART OF IT.

You'll have to use your judgment as to the approximate length of the replay to use which will satisfy the child.

3-3. Ending: Make no effort to probe for additional details after the child has indicated that he is finished. Simple:

ANYTHING ELSE?

This question will elicit any additional information from the child which he feels is important to the story which he may have omitted. Then, to close the session:

THANK YOU VERY MUCH, (child's name).

Appendix D

Dictation Procedures

Dictation Procedures

1. Setting up
   1-1. All listener/researchers and reader/researchers should plan to arrive at the school approximately thirty minutes before the data collection is scheduled to begin to check the following:
      a. that the room which has been scheduled for the retelling session is available;
      b. that the room has been arranged for the retelling session, i.e. a table to sit at with an outlet close by the tape recorder, and two chairs opposite each other: one for the listener/researcher and another for the child, situated as to minimize the possibilities of visual distractions and the temptation to tamper with the tape recorder, and to maximize the quality of the recording.
      c. scribes should obtain assignments for that day from the building coordinator.

2. Classroom teacher
   2-1. Classroom teachers will have prepared the children for the dictation task prior to the actual collection. The specifications of this will be added at a later time.

3. Scribe tasks
   3-1. Working from the assignment list, each scribe will take the child from the classroom to the dictating room.

   3-2. Scribe introduction:

   (child's name), AS YOU KNOW, I'M INTERESTED IN STORIES. I'M INTERESTED IN STORIES THAT WE READ FROM BOOKS AND STORIES THAT WE MAKE UP. I'D LIKE YOU TO MAKE UP A STORY AND TELL IT TO ME. IT CAN BE ABOUT ANYTHING YOU WANT, AND IT CAN BE AS LONG OR AS SHORT AS YOU WANT. BUT IT SHOULD BE YOUR OWN STORY, NOT ONE THAT YOU'VE HEARD OR READ SOME WHERE ELSE. AS YOU'RE TELLING ME YOUR STORY, I'M GOING TO WRITE IT DOWN AND TAPE RECORD IT TO MAKE SURE THAT I GET YOUR STORY RIGHT. I'LL TYPE YOUR STORY AS SOON AS I CAN AND GIVE YOU A COPY. (The child may also be told that a copy will go in the classroom storybook, but these plans have not yet been finalized.) BUT FIRST, LET'S MAKE SURE THAT THE TAPE RECORDER IS WORKING. AFTER I PUSH THESE BUTTONS - SAY YOUR FIRST AND LAST NAME. (Push play and record button - allow child to say his full name - then push stop button.) O.K. LET'S GO BACK AND SEE IF THE TAPE RECORDER IS WORKING. (Rewind the tape, play the tape so that the child can hear his name, then stop tape.) ALL RIGHT, WE'RE READY. TELL ME YOUR STORY NOW AND I'LL WRITE IT DOWN. (Press play and record buttons.)

3-3. Once the child begins his narrative, the scribe should be careful not to interact, interject, or interrupt the child.

3-4. In the event that the child's response is a rhyme, a poem, a description, or a retelling of a known story, that is, not his "own" story, which does not meet the criteria for an "acceptable" story, the scribe will accept the story in its entirety. Following the completion of this story, the child should be encouraged to tell another one:

I'VE READ THAT STORY. TELL ME ONE THAT YOU'VE MADE UP.

Should this approach fail and the child's next story does not meet the criteria, the scribe should proceed in the same manner as stated above. At the conclusion of this story, the child should be excused as follows:

THANK YOU VERY MUCH, (child's name), BE THINKING ABOUT A STORY THAT'S NOT IN A BOOK OR FROM TV AND YOU CAN TELL IT TO (me/another teacher) TOMORROW.

3-5. The following problems may arise during the course of the dictation session. Listed with each possible problem are suggested neutral responses for the scribe. Obviously it is impossible to predict all problems which may arise during the dictation session. However, the following examples provide a framework from which the scribe can draw in dealing with problems which may arise.

a. The child has trouble starting his story. In this situation, the child is willing to tell you his story, but for some reason is having temporary difficulties getting started. A non-verbal gesture of encouragement would be appropriate. A neutral response would be:

I'LL GIVE YOU A MINUTE TO THINK.

This shows the child that you are willing to wait until he is ready. Remember, do not turn off the tape recorder; these pauses are part of the data.

b. The child asks you if he can leave before finishing his story.
Of course you as the interviewer must decide on the specifics of that child and that particular situation, but two options are available to you:

1) Encourage the child to make another attempt:

I'D LIKE YOU TO TRY AND TELL ME MORE OF YOUR STORY.

2) Allow the child to return to the room with a simple

THANK YOU.

The first option is the preferred way of dealing with this situation, but the second option may be used if the child seems upset about the dictation session for any reason. Use of the second option does not eliminate the possibility of having the child dictate a story on a subsequent day. An occurrence of this nature should be referred to the classroom researcher.

c. Long pauses
Do not interrupt pauses or turn off the tape recorder. The child may be "planning" what he wants to say next. Any interruption on your part may bias what the child intends to say.

d. The child's voice begins fading and you're not sure his voice is being picked up on the tape recorder.
In the beginning of the dictation session, you should be able to tell if this is going to be a problem when you "test" the tape recorder.

(See Section 3-2.) But, if during the course of the dictation you find that this becomes a problem, say:

(child's name), COULD YOU SPEAK LOUDER PLEASE SO WE CAN HEAR ALL OF YOUR STORY?

e. The child goes off on some tangent which is obviously not part of the story.
In the past this has not been a problem in the dictation session. However, should this situation arise, try not to encourage or discourage these types of responses. A neutral question is suggested:

IS THIS PART OF YOUR STORY? or

This type of reaction on the part of the scribe should minimize extraneous comments in a completely neutralized fashion.

f. The child begins to tamper or play with the tape recorder. Hopefully, careful setting-up (See Section 1-1.) will eliminate or at least minimize the probability of this occurrence. Should this happen though, again a neutral response is needed:

I CAN'T LET YOU DO THAT TO THE TAPE RECORDER.

If the problem continues, you may find it necessary to hold the tape recorder yourself to prevent the child from tampering with it.

g. The child wants to hear himself on the tape recorder (the whole story).
Allowing the child to hear himself on the tape recorder initially will satisfy many of the children. (See Section 3-2.) But for the occasional child who wants to hear the whole story, an appropriate response is:

WE DON'T HAVE TIME TO HEAR ALL OF IT, BUT WE CAN REWIND THE TAPE SOME SO YOU CAN HEAR PART OF IT.

You'll have to use your judgment as to the approximate length of the replay to use which will satisfy the child.

3-6. Ending: Make no effort to probe for additional details after the child has indicated that he is finished. Simple:

ANYTHING ELSE?

This question will elicit any additional information from the child which he feels is important to the story which he may have omitted. Then, to close the session:

THANK YOU, (child's name).

Appendix E

Illustrative Written Text

The Ead aEd

Heather

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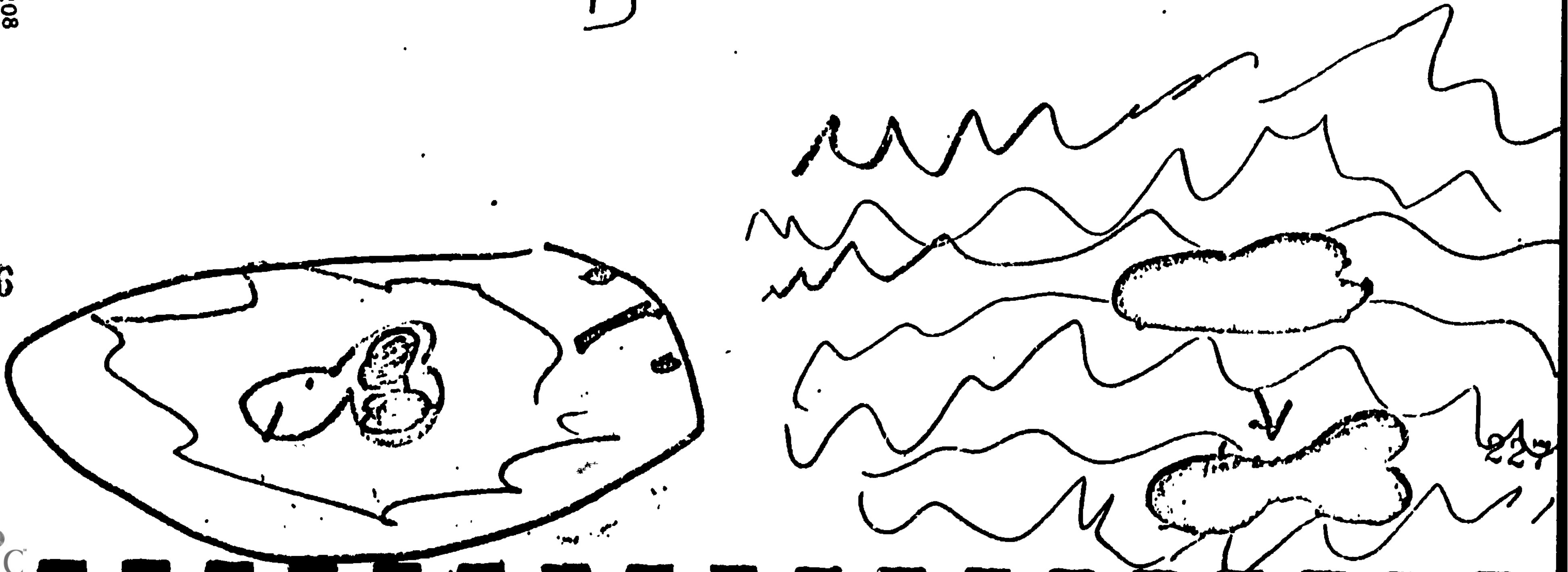
The Sitly Tadpole.

(1) Once There
a Tad pole were wa
livd in a pole wh
and he witr to wa
That The thoiuk
was The witr, to wa
with The Sea (2) Sea
Dran stayed out To

Heather
AW #1
Barn

and he LaDan and They
in a litt BoX Taka it To a
BahaTAB (3) The. The SEa
MoM was claning
The BahaTaB

208



Appendix F

Illustrative Parsed Typescript

(1) once there was a tadpole who lived in a water tower

(2) and he thought that the water tower was the sea

(3) one day water started to drain out

(4) and he landed in a little boy's bathtub

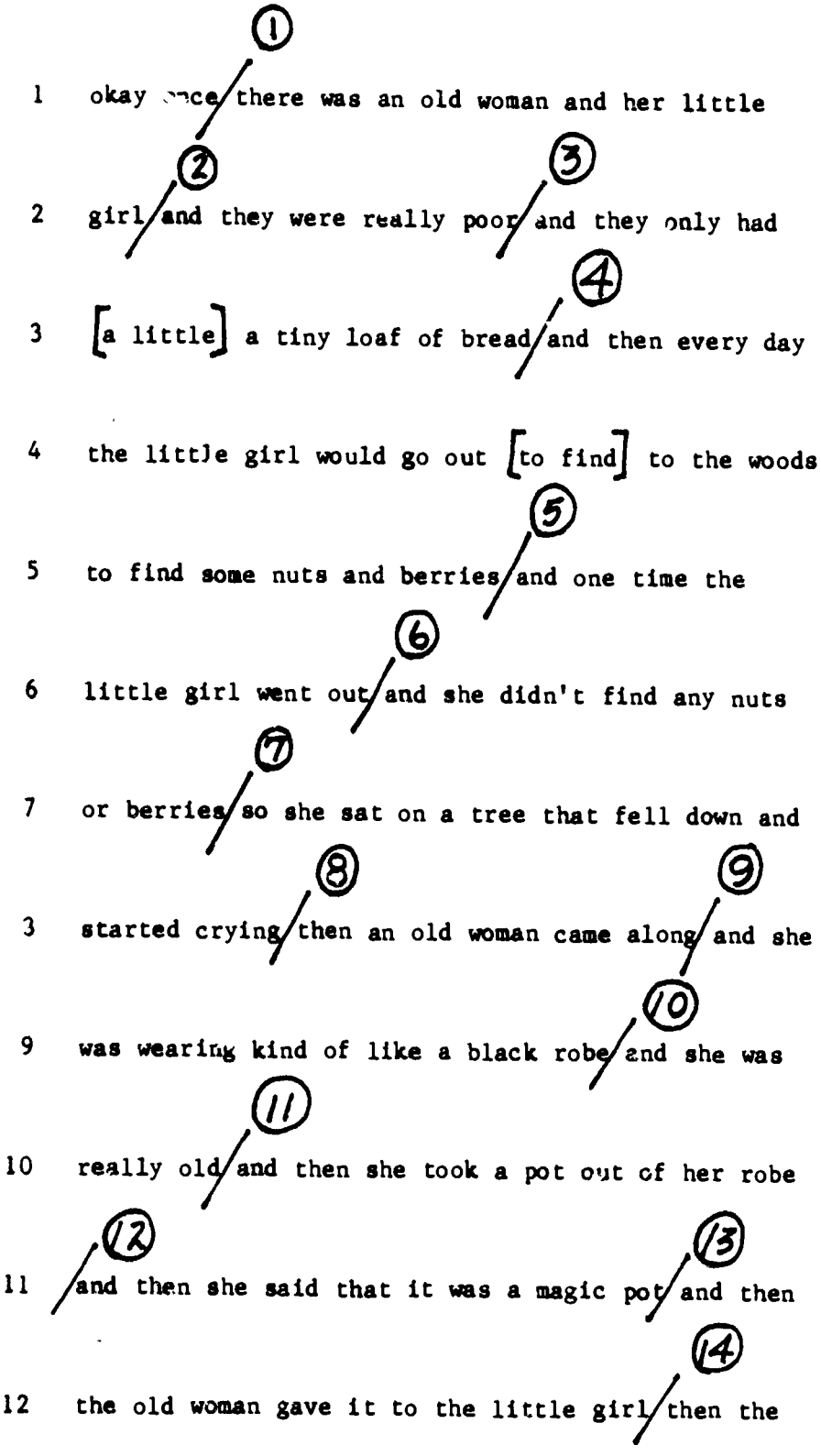
(5) the mom was cleaning the bathtub

(6) and they took it to the sea

Appendix G

Original Typescript

IN speak up a little bit louder so we can hear



13 little girl ran home with it as fast as she could

(15)

14 well before that the old woman told her the magic

(16)

15 words because it was a magic pot and [um it could

16 bake] it could make some porridge with just saying

17 [um um something like something like yeah it was

(17)

18 boil it was] boil pot boil then to make it stop

(18)

19 boiling it was stop little pot stop [and then] so she

20 ran home as fast as she could and showed it [to her

(19)

21 mom] to her mother and then she said that it was a

(20)

22 magic pot and then to try it she just put it on the

(21) (22)

((sp:girl))

23 fire and then she said boil little pot boil and

(23)

24 then some porridge started boiling and then they

(24)

25 started eating it and then the little girl said

Appendix H

Definitions and Procedures for Coding Proppian Functions

Definitions and Procedures for Coding

Proppian Functions

FUNCTION

0. Beginning (initial situation)

a. Beginnings are not analogous to functions. They are, instead, an exposition of the facts of a tale, i.e., the characters or personna, the location, the time of the tale, and attributes that further explicate these facts.

b. Subsidiary tales embedded within or added to a central tale may also have beginnings. For the most part, however, a tale will have only one beginning.

c. A beginning must include at least one character who is introduced at the outset plus one additional fact of the story such as time or location. The character introduced in the beginning ordinarily will be the hero. Other characters may also be introduced in the beginning, but typically, a new character signals a function.

d. The temporal relations, commonly specified in a beginning, frame two distinct meanings. On the one hand, a conventional "once upon a time" formally marks the beginning of a narrative not in the sense of events but in the sense of fictive time wherein reality may be suspended in part or totally. On the other hand, "once upon a time" typically expresses the meaning "first to be presented, discussed, or narrated." It implies an internal successivity to the flow of narrative. Quite literally it means, "the narrative begins." It refers to the time dimension in the communications process. Other such conjunctions between reality and fiction are: one, one time, there once was, long ago there lived, etc.

Other forms of temporal relations may appear in subsequent text. For a full discussion see Halliday and Hassan (1976) on conjunctive relations (pp. 261-267). Summarized here, they are:

Sequential - then, next, after that
Simultaneous - just then, at the same time
Preceding - previously, before that
Conclusive - finally, at last
Immediate - at once, thereupon
Interrupted - soon, after a time
Repetitive - next time, on another occasion
Specific - next day, an hour later

Durative - meanwhile
Terminal - until then
Punctiliar - at this moment

These conjunctions indicate either successive or parallel action. Ordinarily the order of narration and the order of events in a story are isomorphic. To represent events in some order other than that of the narration, a temporal relation must be specified explicitly; otherwise, the assumption that narrative order implies temporal order will hold and confusion will result. For example, an embedded tale or move may include events that occur simultaneously with events in the main tale. Unless so specified by temporal relations, a reader will assume the order of occurrence of events is isomorphic with temporal order. It is in this way that temporal conjunctions function to maintain succession and simultaneity.

The question that arises at these junctures is, of course, whether or not a new beginning should be coded for the new move. To make an arbitrary rule whereby such a coding decision would be facilitated is probably unwise. Instead, the decision should be made on the same basis as set forth for coding beginnings for the main tale. One modification, however, is necessary. The beginning for an additional or subsidiary tale will already have had the temporal relations specified by a conjunction as described above; therefore, in addition to including a character, the beginning for a subsidiary tale will in all probability specify a new location relative to some translocation of the character introduced at this point. But the mere inclusion of translocations is not sufficient reason for coding a new beginning. What must be clearly established is that a subsidiary or additional tale has been launched.

1. Absention: One member of a family or other grouping leaves home.
   a. elders
   b. parents
   c. children

2. Interdiction: A restriction, obligation, imperative, request, or suggestion is addressed to the hero.

3. Violation: The interdiction is ignored or otherwise violated. Often the violation of an interdiction is accompanied by the introduction of a villain.

4. Reconnaissance: The villain attempts to observe and gather information about the victim.

5. Delivery: The villain obtains information about the victim, usually through a direct answer to the villain's deceptive inquiry or through a careless revelation.

6. Trickery: The villain attempts to deceive the victim in order to capture the victim or possess the victim's belongings or loved ones. The following means are most commonly employed:

   a. disguise and persuasion
   b. disguise and magic
   c. disguise and deception or coercion

7. Complicity: The hero unwittingly submits to deception, persuasion, or villainy thereby aiding the villain, or through the hero's own action or inaction gives his adversary an advanage.

8A. Villainy: The villain causes harm or injury to a member of the group or family. The villainy may take one of the following forms:

   a. abduction
   b. seizure of belongings, magical agent or helper
   c. pillage
   d. enchantment
   e. injury
   f. victimize
   g. obdurate sacrifice
   h. murder
   i. torment
   j. war
   k. injustice
   l. despoiling

8B. Lack: One member of the group or family lacks or desires something. Desires may be personal, material, or ethereal. Common examples are:

   a. bride, friend, partner
   b. magical agent
   c. insight, rationality
   d. money, subsistence

9. Mediation: The villainy or lack is revealed either to the hero or by the hero. Mediation may be a:

   a. call for help
   b. request, command
   c. direct announcement
   d. banishment
   e. condemnation
   f. lament

10. Counteraction: The hero decides upon or agrees to a course of action.

11. Departure: The hero leaves home in quest of something or in response to an action or request. Departures are distinguished from other translocations by the pattern of action that ensues. The most common accompaniment is the introduction of a donor or benefactor. But other subsequent actions are possible as well. A series of adventures, trials, dangers, and magical experiences may also accompany and follow a departure. To distinguish departures from naturally occurring or magical translocations, departures can be expected to occur only once within a move while translocations may occur without limitation on frequency, and ordinarily departures will be made from a locale such as home. Departures are integral to the developing action while translocations are not.

12. Preparation: The hero is prepared through interrogation, trial, testing, or observation to nullify the villainy or remedy the lack. Often a benefactor or donor is the instrument of this preparation.

13. Reaction: The preparation is either successful or a failure hinging on the hero's reaction to the preparation. Reaction and preparation are reciprocols. The range of preparatory tasks is almost unlimited but the hero either succeeds or fails to achieve a state of preparation necessary to nullify the villainy or remedy the lack. The remedy may be and often is achieved through magic but may also be gained through insight, knowledge, or strength of character.

14. Receipt: The hero acquires the agent or remedy through which the lack or villainy may be dispatched. Often the agent is magical, but may also be insight, knowledge, or inner strength.

15. Translocation: The hero transports or is transferred to a different location. The object of the hero's search or desires may be present in this location. The means of translocation may be extraordinary or even magical but there is no requirement that they be such.

16. Struggle: The hero and the villain join in combat. The range of contesting is considerable, encompassing everything from open combat to dickering and persuasion.

17. Branding: The hero is marked by a wound or a binding for the wound.

18. Victory: The villain is defeated. Again the range of means is broad and, of course, related to the nature of the struggle. The villain may be killed, vanquished, banished, chastized, or merely outwitted.

19. Liquidation: The initial misfortune or lack is remedied. Ordinarily, the agent obtained earlier plays a pivotal role in liquidating the lack or achieving the victory. The agent employed, however, is not synonymous with a remedy. Particularly in the case of knowledge or insight acquired must this distinction be kept clear. The remedy is the changed state or condition of the hero--not the knowledge, or insight, or strength responsible for the change. The confusion that may arise on this point stems from failing to distinguish between generic and particular meaning. That is, particular cognitions must be distinguished from general states of overall or world knowledge. The change in knowledge opens up wholly new opportunities for action.

20. Return: The hero returns to the locale (home) where the action originated. This translocation will always be among the final ones in a move or tale.

21. Pursuit: While returning, the hero may be pursued by one or more persons or creatures.

22. Rescue: The hero is able to avoid his pursuers or is rescued from them.

23. Unrecognized Arrival: The hero arrives home unrecognized.

24. Unfounded Claims: A false hero makes unfounded claims.

25. Difficult Task: A difficult task is proposed to settle the opposing claims.

26. Solution: The difficult task is completed.

27. Recognition: The hero is recognized by virtue of performing the difficult task or by the brand acquired earlier.

28. Exposure: The false hero is exposed or the villain is revealed for what he is.

29. Transfiguration: The hero is given or acquires a new appearance.

30. Punishment/Rebuke: The villain is punished and the hero is sometimes rebuked. The hero may also b reprimanded for violating an interdiction or rebuked for a transgression. Both are intended though as gentle palliatives.

31. Equilibrium: A terminal state of harmony and union is achieved. Often the this state is indicated by a marker such as "They lived happily ever after."

Appendix I

Supplementary MANOVA and ANOVA Tables:

1.0 Cohesion

2.0 Story Structure

Table 1.1

Means and Standard Deviations for Substitution Cohesion Category (Transformed Variable) in Writing at Urban School by Dialect, Sex, and Observation

Dialect	Sex	Observation	M	SD
Vernacular			0.00	0.00
	Males	1	0.00	0.00
		2	0.00	0.00
		3	0.00	0.00
	Females	1	0.00	0.00
		2	0.00	0.00
		3	0.01	0.00
Nonvernacular			0.01	0.04
	Males	1	0.03	0.08
		2	0.00	0.00
		3	0.02	0.04
	Females	1	0.00	0.00
		2	0.00	0.00
		3	0.00	0.00

Table 1.2

Means and Standard Deviations for Substitution Cohesion Category (Transformed Variable) in Writing for School Replication by School, Sex, and Observation

School	Sex	Observation	M	SD
Suburban			0.00	0.00
	Males	1	0.00	0.00
		2	0.00	0.00
		3	0.01	0.00
	Females	1	0.00	0.00
		2	0.02	0.00
		3	0.01	0.00
Urban			0.00	0.00
	Males	1	0.00	0.00
		2	0.00	0.00
		3	0.00	0.00
	Females	1	0.00	0.00
		2	0.00	0.00
		3	0.00	0.00

Table 1.3

Means and Standard Deviations for Substitution Cohesion Category (Transformed Variable) in Writing at Suburban School by Sex and Observation

Sex	Observation	M	SD
Males	1	0.00	0.00
	2	0.00	0.00
	3	0.00	0.00
Females	1	0.00	0.00
	2	0.06	0.01
	3	0.01	0.00

Table 2.1

Means and Standard Deviations of Moves by Dialect, Sex, and Mode

Dialect	Sex	Mode	M	SD
Vernacular	Males	Retelling	1.44	0.51
		Dictation	1.06	0.42
	Females	Retelling	1.72	0.67
		Dictation	1.56	1.46
Nonvernacular	Males	Retelling	2.28	0.46
		Dictation	1.89	1.08
	Females	Retelling	2.11	0.90
		Dictation	2.33	1.75

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Table 2.2

Means and Standard Deviations of
Functions and Moves by Observation

Observation	Functions		Moves	
	M	SD	M	SD
1	9.38	7.58	1.77	1.15
2	11.42	7.22	1.81	1.23
3	10.21	6.28	1.81	0.82

Table 2.3

ANOVA of Moves by
School, Sex, Mode, and Observation

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	1.17	0.61	.45
Sex (B)	1	0.17	0.09	.77
School X Sex (AxB)	1	0.17	0.90	.77
S/AB	20	1.94		
Within Subjects	120			
Mode (C)	1	1.56	1.25	.28
School X Mode (AxC)	1	0.56	0.45	.51
Sex X Mode (BxC)	1	0.01	0.01	.94
School X Sex X Mode (AxBxC)	1	3.06	2.45	.13
SC/AB	20	1.25		
Observation (D)	2	0.44	0.38	.69
School X Observation (AxD)	2	0.09	0.08	.93
Sex X Observation (BxD)	2	0.63	0.54	.59
School X Sex X Observation (AxBxD)	2	0.34	0.29	.75
SD/AB	40	1.17		
Mode X Observation (CxD)	2	1.90	1.47	.24
School X Mode X Observation (AxCxD)	2	0.77	0.60	.56
Sex X Mode X Observation (BxCxD)	2	0.42	0.33	.72
School X Sex X Mode X Observation (AxBxCxD)	2	1.19	0.92	.41
SCD/AB	40	1.29		
TOTAL	143			

Table 2.4

Means and Standard Deviations of Moves
by School, Sex, Mode, and Observation

School	Sex	Mode	Observation	Move	
				M	SD
Suburb.				1.97	1.11
	Males			1.97	1.36
		Retelling		2.00	0.59
			1	2.17	0.41
			2	1.83	0.41
			3	2.00	0.89
		Dictation		1.94	1.86
			1	1.83	2.14
			2	2.17	2.40
			3	1.83	1.17
	Females			1.97	0.81
		Retelling		2.28	0.67
			1	2.83	0.75
			2	2.00	0.00
			3	2.00	0.63
		Dictation		1.67	0.84
			1	1.00	0.00
			2	1.67	0.82
			3	2.33	0.82
Urban				2.15	1.13
	Males			2.08	0.84
		Retelling		2.28	0.46
			1	2.67	0.52
			2	2.00	0.00
			3	2.17	0.41
		Dictation		1.89	1.08
			1	2.00	0.89
			2	1.67	1.51
			3	2.00	0.89
	Females			2.22	1.38
		Retelling		2.11	0.90
			1	2.00	0.89
			2	2.00	0.00
			3	2.33	1.37
		Dictation		2.33	1.75
			1	2.17	2.04
			2	2.33	2.42
			3	2.50	0.55

Table 2.5

ANOVA of Functions
by Sex, Mode, and Observation

Source	df	MS	F	p <	df*	p*
Between Subjects	11					
Sex (A)	1	5.01	0.05	.83		
S/A	10	102.41				
Within Subjects	60					
Mode (B)	1	1540.10	66.86	.001	1	.001
Sex X Mode (AxB)	1	62.35	2.71	.13		
SB/A	10	23.04			10	
Observation (C)	2	32.05	1.09	.36		
Sex X Observation (AxC)	2	16.89	0.57	.57		
SC/A	20	29.41				
Mode X Observation (BxC)	2	51.17	1.42	.27		
Sex X Mode X Observation (AxBxC)	2	2.39	0.07	.94		
SBC/A	20	35.98				
TOTAL	71					

*Degrees of freedom for Geisser-Greenhouse conservative F test.
**Level of synificance for Geisser-Greenhouse conservative F test.

Table 2.6

ANOVA of Function Types
by Sex, Mode, and Observation

Source	df	MS	F	p <	df*	p*
Between Subject	11					
Sex (A)	1	13.35	0.49	.50		
S/A	10	27.45				
Within Subjects	60					
Mode (B)	1	847.34	260.95	.001	1	.001
Sex X Mode (AxB)	1	4.01	1.24	.29		
SB/A	10	3.25			10	
Observation (C)	2	66.01	9.27	.001	1	.05
Sex X Observation (AxC)	2	4.76	0.67	.52		
SC/A	20	7.12			10	
Mode X Observation (BxC)	2	54.35	7.16	.005	1	.05
Sex X Mode X Observation (AxBxC)	2	5.10	0.67	.52		
SBC/A	20	7.59			10	
TOTAL	71					

*Degrees of freedom for Geisser-Greenhouse conservative F test.
**Level of significance for Geisser-Greenhouse conservative F test.

Table 2.7

Means and Standard Deviations of Moves,
by Sex, Mode, and Observation for Suburban School

Sex	Mode	Observation	Story Structure Elements					
			Functions		Moves		Function Types	
			M	SD	M	SD	M	SD
Male			13.81	8.91	1.97	1.36	9.92	5.15
	Retelling	1	17.00	5.14	2.17	0.41	12.67	2.25
		2	16.83	3.82	1.83	0.41	10.67	1.86
		3	18.67	6.80	2.00	0.89	16.00	4.38
	Dictation	1	16.50	6.95	1.83	2.14	4.67	3.01
		2	13.17	13.70	2.17	2.40	7.67	4.97
		3	10.67	10.21	1.83	1.17	7.83	5.04
Female			14.33	6.74	1.97	0.81	10.78	4.74
	Retelling	1	20.67	1.37	2.83	0.75	14.00	0.63
		2	18.17	2.14	2.00	0.00	11.33	1.21
		3	20.83	6.50	2.00	0.63	18.00	3.35
	Dictation	1	7.00	2.00	1.00	0.00	7.00	2.00
		2	9.33	4.63	1.67	0.82	7.17	2.64
		3	10.00	4.05	2.33	0.82	7.17	3.06

Table 2.8

ANOVA of Moves by
Sex, Mode, and Observation

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	0.00	0.00	1.00
S/A	10	1.89		
Within Subjects	60			
Mode (B)	1	2.00	1.34	.27
Sex X Mode (AxB)	1	1.39	0.93	.36
SB/A	10	1.49		
Observation (C)	2	0.10	0.10	.91
Sex X Observation (AxC)	2	0.29	0.29	.75
SC/A	20	1.01		
Mode X Observation (BxC)	2	2.54	2.36	.12
Sex X Mode X Observation (AxBxC)	2	1.51	1.41	.27
SBC/A	20	1.08		
TOTAL	71			

Table 2.9

ANOVA of Functions in Dictation
by Dialect, Sex, and Observation

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	304.22	4.83	.04
Sex (B)	1	128.00	2.03	.17
Dialect X Sex (AxB)	1	0.89	0.01	.91
S/AB	20	63.00		
Within Subjects	48			
Observation (C)	2	8.68	0.25	.78
Dialect X Observation (AxC)	2	14.60	0.42	.66
Sex X Observation (BxC)	2	7.29	0.21	.81
Dialect X Sex X Observation (AxBxC)	2	21.76	0.63	.54
SC/AB	40	34.57		
TOTAL	71			

Table 2.10

ANOVA of Function Types in Dictation
by Dialect, Sex, and Observation

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	107.56	7.81	.01
Sex (B)	1	32.00	2.32	.14
Dialect X Sex (AxB)	1	26.89	1.95	.18
S/AB	20	13.78		
Within Subjects	48			
Observation (C)	2	9.38	1.06	.36
Dialect X Observation (AxC)	2	5.51	0.63	.54
Sex X Observation (BxC)	2	15.13	1.72	.19
Dialect X Sex X Observation (AxBxC)	2	10.76	1.22	.31
SC/AB	40	8.81		
TOTAL	71			

Table 2.11

ANOVA of Moves in Dictation
by Dialect, Sex, and Observation

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	11.68	4.69	.04
Sex (B)	1	4.01	1.61	.22
Dialect X Sex (AxB)	1	0.01	0.01	.94
S/AB	20	2.49		
Within Subjects	48			
Observation (C)	2	0.04	0.03	.97
Dialect X Observation (AxC)	2	0.51	0.35	.71
Sex X Observation (BxC)	2	0.26	0.18	.84
Dialect X Sex X Observation (AxBxC)	2	0.51	0.35	.71
SC/AB	40	1.47		
TOTAL	71			

Table 2.12

ANOVA of Functions in Dictation
by School, Sex, and Observation

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	0.50	0.01	.94
Sex (B)	1	10.89	0.12	.73
School X Sex (AxB)	1	80.22	0.92	.35
S/AB	20	87.52		
Within Subjects	48			
Observation (C)	2	33.72	0.70	.50
School XObservation (AxC)	2	34.67	0.72	.49
Sex X Observation (BxC)	2	23.39	0.49	.62
School X Sex X Observation (AxBxC)	2	2.89	0.06	.94
SC/AB	40	48.08		
TOTAL	71			

Table 2.13

ANOVA of Function Types in Dictation
by School, Sex, and Observation

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	8.68	0.44	.51
Sex (B)	1	39.01	1.98	.18
School X Sex (AxB)	1	21.13	1.07	.31
S/AB	20	19.71		
Within Subjects	48			
Observation (C)	2	17.51	1.91	.16
School X Observation (AxC)	2	4.26	0.47	.63
Sex X Observation (BxC)	2	12.18	1.33	.28
School X Sex X Observation (AxBxC)	2	13.88	1.51	.23
SC/AB	40	9.18		
TOTAL	71			

Table 2.14

ANOVA of Moves in Dictation
by School, Sex, and Observation

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	1.68	0.58	.46
Sex (B)	1	0.13	0.04	.84
School X Sex (AxB)	1	2.35	0.81	.38
S/AB	20	2.90		
Within Subjects	48			
Observation (C)	2	1.04	0.53	.59
School X Observation (AxC)	2	0.60	0.31	.74
Sex X Observation (BxC)	2	1.04	0.53	.59
School X Sex X Observation (AxBxC)	2	0.60	0.31	.74
SC/AB	40	1.95		
TOTAL	71			

Table 2.15

Means and Standard Deviations of Story Structure Elements in Dictation by School, Sex, and Observation

Sex	School	Observation	Story Structure Elements					
			Functions		Functions		Moves	
			M	SD	M	SD	M	SD
Males			8.97	8.59	5.83	3.87	1.92	1.50
	Suburban		10.11	10.40	6.72	4.43	1.94	1.86
		1	6.50	6.95	4.67	3.01	1.83	2.14
		2	13.17	13.70	7.67	4.97	2.17	2.40
		3	10.67	10.21	7.83	5.04	1.83	1.17
	Urban		7.83	6.40	4.94	3.08	1.89	1.08
		1	7.67	4.80	4.33	1.97	2.00	0.89
		2	8.67	9.54	5.67	4.23	1.67	1.51
		3	7.17	4.88	4.83	3.06	2.00	0.89
Females			9.75	6.24	7.31	3.22	2.00	1.39
	Suburban		8.78	3.75	7.11	2.45	1.67	0.84
		1	7.00	2.00	7.00	2.00	1.00	0.00
		2	9.33	4.63	7.17	2.64	1.67	0.82
		3	10.00	4.05	7.17	3.06	2.33	0.82
	Urban		10.72	8.01	7.50	3.91	2.33	1.75
		1	10.83	12.21	6.83	4.79	2.17	2.04
		2	9.50	7.82	5.83	2.48	2.33	2.42
		3	11.83	2.14	9.83	3.54	2.50	0.55

Table 2.16

Means and Standard Deviations of Story Structure Elements in Dictation by Sex and Observation

Sex	Observation	Story Structure Elements					
		Functions		Function Types		Moves	
		M	SD	M	SD	M	SD
Males	1	6.50	6.95	4.67	3.01	1.83	2.14
	2	13.17	13.70	7.67	4.97	2.17	2.40
	3	10.67	10.21	7.83	5.04	1.83	1.17
Females	1	7.00	2.00	7.00	2.00	1.00	0.00
	2	9.33	4.63	7.17	2.64	1.67	0.82
	3	10.00	4.05	7.17	3.06	2.33	0.82

Appendix J

Text Length and Syntactic Complexity: Results and Discussion

Text Length and Syntactic Complexity: Results and Discussion

An Overview

Length of text was measured in terms of number of T-units (see definition of T-unit in Procedures). The number of T-units served as a dependent variable in nine analyses of variance (ANOVAs). Syntactic complexity of a text--measured in terms of the mean number of words per T-unit--also served as a dependent variable in nine analyses of variance (ANOVAs). All analyses were mixed designs, and each set of nine analyses corresponded to the cohesion and story structure MANOVAs described and reported above in chapters 3 and 4, respectively. The results and discussion of text length and syntactic complexity are included in this report as solely descriptive information. In both the results and the discussion sections, the analyses of the text length dependent variable will be addressed first, followed by the analyses of the syntactic complexity measure.

RESULTS

Text Length

Text Length in Writing

Three separate ANOVAs analyzed the length of the writing texts produced by, (1) the children in the urban school, (2) by the nonvernacular children in both urban and suburban schools, and (3) by the children in the suburban school. These three analyses are presented below. Conservative F tests were employed for all significant effects involving within-subjects factors, and a similar conservative stance was used in any appropriate Tukey follow-up tests.

Urban school. In the analyses of text length of the written productions at the urban school, dialect and sex were the between-subjects factors, and observations was the within-subjects factor. Table 1 displays the means and standard deviations of the text length measure for the urban school writing texts.

Results from the ANOVA on the urban data are presented in Table 2. These results indicated that only the main effects of sex and observations were significant: F (1,20) = 4.28, $p < .05$ and F (2,40) = 22.89, $p < .001$, respectively.

The sex result indicated that girls' written texts (M = 7.00) were significantly longer than the boys' (M = 3.92). Tukey HSD post-hoc procedures comparing the mean number of T-units across the observations indicated that written texts increased in length significantly over the three observations. (see Table 1).

Table 1

Means and Standard Deviations of Text Length in Writing, by Dialect, Sex, and Observation, for Urban School

Dialect	Sex	Observation	Text Length Measure	
			M	SD
Vernacular			4.11	5.64
	Males	1	1.17	0.75
		2	2.00	2.28
		3	4.50	3.02
	Females	1	1.13	1.63
		2	5.67	6.35
		3	10.00	9.74
NonVernacular			6.81	5.92
	Males	1	1.83	0.98
		2	5.67	4.55
		3	8.33	5.47
	Females	1	3.50	3.45
		2	6.83	2.14
		3	14.67	7.47
Sex Means Overall	Males		3.92	4.01
	Females		7.00	7.04
Observation Means Overall		1	1.96	2.10
		2	5.04	4.34
		3	9.38	7.42

Table 2

ANOVA of Text Length Measure in Writing
by Dialect, Sex, and Observation, for Urban School

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	130.68	3.27	.09
Sex (B)	1	171.13	4.28	.05
Dialect X Sex (AxB)	1	0.01	0.00	.99
S/AB	20	40.00		
Within Subjects	3			
Observation	2	333.16	22.89*	.001
Dialect X Observation	2	12.39	0.85	.43
Sex X Observation	2	39.50	2.71	.08
Dialect X Sex X Observation (AxBxC)	2	6.89	0.47	.63
SC/AB	40	14.55		
TOTAL	71			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is also significant at $p < .001$.

School replication. The school replication ANOVA had school and sex as between-subjects factors and observations as the within-subjects factor. Means and standard deviations of the number of T-units for the writing texts for this school replication analysis are presented in Table 3. Table 4 displays the ANOVA results.

As indicated in Table 4, significant effects for school, sex, and observations were obtained. These results indicated that the means for school and sex displayed in Table 3 were significantly different. More specifically, written texts at the suburban school (M = 12.61) were significantly longer than those at the urban school (M = 6.81); texts written by girls (M = 11.94) were longer than those written by boys (M = 7.47). Tukey's post-hoc tests indicated that written texts were significantly longer over the three observations: observation one (M = 3.54); observation two (M = 9.08); observation three (M = 16.50).

Suburban school. Sex was the between-subjects factor and observations was the within-subjects factor in the suburban ANOVA on written text length. Table 5 presents the means and deviations of this variable; Table 6 presents a summary of the ANOVA.

As indicated in Table 6, only the observations factor was significant. Tukey HSD post-hoc tests were performed to compare the means of the text length measure. The results indicated that, at the suburban school, the length of children's written texts increased significantly overall--that is, from observation one and observation three, and between the second and third observations.

Text Length in Retelling and Dictation

Three separate ANOVAs analyzed the text length of the retellings and dictations. The results of each analysis are reported below.

Urban school. The urban school ANOVA was a mixed design of four factors: dialect and sex were the between-subjects factors; mode and observations were the within-subjects factors. Table 7 presents the means and standard deviations of the text length measure at the urban school and Table 8 provides a summary of the ANOVA results. Three effects--the main effects of dialect and observations, and the first-order interaction of dialect by observations--were significant.

Table 3

Means and Standard Deviations of Text Length in Writing, by School, Sex, and Observation, for Urban-Suburban School Replication

School	Sex	Observation	Text Length Measure	
			M	SD
Suburban			12.61	10.49
	Males	1	2.83	1.83
		2	7.17	5.38
		3	19.00	9.82
	Females	1	6.00	4.20
		2	16.67	8.57
		3	24.00	11.10
Urban			6.81	5.92
	Males	1	1.83	0.98
		2	5.67	4.55
		3	8.33	5.47
	Females	1	3.50	3.45
		2	6.83	2.14
		3	14.67	7.47
Sex Means Overall	Males		7.47	7.64
	Females		11.97	9.68
Observation Means Overall		1	3.54	3.13
		2	9.08	6.93
		3	16.50	10.05

Table 4

ANOVA of Text Length in Writing
by School, Sex, and Observation, for Urban-Suburban
School Replication

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	606.68	12.18	.002
Sex (B)	1	360.01	7.23	.01
School X Sex (AxB)	1	36.13	0.73	.40
S/AB	20	49.80		
Within Subjects	48			
Observation (C)	2	1014.51	30.33*	.001
School X Observation (AxC)	2	102.18	3.05	.06
Sex X Observation (BxC)	2	19.18	0.57	.57
School X Sex X Observation (AxBxC)	2	37.04	1.11	.34
SC/AB	40	33.45		
TOTAL	71			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is also significat at p < .001.

Table 5

Means and Standard Deviations of Text Length in Writing, by Sex, and Observation, for Suburban School

Observation	Sex	Text Length Measure	
		M	SD
1		4.42	3.50
	Males	8.43	3.28
	Females	6.18	2.17
2		11.92	8.44
	Males	8.05	1.46
	Females	7.94	1.65
3		21.50	10.33
	Males	8.01	0.72
	Females	8.98	1.30

Table 6

ANOVA of Text Length in Writing by Sex and Observation for Suburban School

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	312.11	4.43	.06
S/A	10	70.51		
Within Subjects	24			
Observation (B)	2	879.85	17.43*	.001
Sex X Observation (AxB)	2	31.86	0.63	.54
SB/A	20	50.49		
TOTAL	35			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,10) was significant at p < .01.

Table 7

Means and Standard Deviations of Text Length in Retelling and Dictation by Dialect, Sex, Mode, and Observation, for Urban School

Dialect	Sex	Mode	Observation	Text Length Measure	
				M	SD
Vernacular	Males	Retelling	1	11.17	5.12
			2	22.33	10.56
			3	22.00	17.52
		Dictation	1	5.17	0.75
			2	16.17	8.04
			3	18.00	9.14
	Females	Retelling	1	18.33	10.65
			2	25.50	13.97
			3	28.17	16.87
		Dictation	1	19.17	15.51
			2	27.33	20.03
			3	20.67	20.22
Nonvernacular	Males	Retelling	1	38.33	16.07
			2	37.33	9.52
			3	58.33	18.21
		Dictation	1	16.50	9.46
			2	60.00	94.50
			3	71.00	35.42
	Females	Retelling	1	30.83	9.56
			2	40.00	9.40
			3	61.67	13.84
		Dictation	1	30.33	25.71
			2	31.17	20.78
			3	51.17	19.25

Table 8

ANOVA of Text Length in Retelling and Dictation
by Dialect, Sex, Mode, and Observation, for Urban School

Source	df	MS	F	p <
Between Subjects				
Dialect (A)	1	21413.17	14.58	.001
Sex (B)	1	16.00	0.01	.92
Dialect X Sex (AxB)	1	1626.73	1.11	.31
S/AB	20	1468.41		
Within Subjects				
Mode (C)	1	186.77	0.37	.55
Dialect X Mode (AxC)	1	53.78	0.11	.75
Sex X Mode (BxC)	1	121.01	0.24	.63
Dialect X Sex X Mode (AxBxC)	1	498.76	1.00	.33
SC/AB	20	500.21		
Observation (D)	2	4892.31	12.34*	.001
Dialect X Observation (AxD)	2	1792.10	4.52**	.02
Sex X Observation (BxD)	2	350.16	0.88	.42
Dialect X Sex X Observation (AxBxD)	2	124.86	0.32	.73
SD/AB	40	396.41		
Mode X Observation (CxD)	2	256.70	0.52	.60
Dialect X Mode X Observation (AxCxD)	2	277.40	0.56	.58
Sex X Mode X Observation (BxCxD)	2	710.73	1.43	.25
Dialect X Sex X Mode X Observation (AxBxCxD)	2	559.57	1.13	.34
SCD/AB	40	497.44		
TOTAL	143			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is still significant at $p < .01$.
**Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is still significant at $p < .05$.

To compare the mean dialect group differences at each observation (see Table 9 and Figure 1), Tukey post-hoc tests were performed. This procedure indicated that no significant differences on text length existed between the dialect groups at observation one, but that nonvernacular retelling and dictation texts were significantly longer than vernacular ones at observations two and three. In comparing text length, across the three observations for each dialect group, the following results were obtained: for the vernacular groups, no significant text length differences existed among the three observations; for the nonvernacular group, retelling and dictation texts were significantly longer overall and between observations two and three.

As indicated by the means presented in Table 9, and graphed in Figure 1, nonvernacular texts were significantly longer than vernacular texts. No interpretation of the main effect for observations was attempted since the pattern for text length across the three observations was not similar for the dialect groups.

School replication. The school replication ANOVA--having school and sex as between-subjects factors and mode and observations as within-subject factors--obtained only a significant effect for observations. These results are presented in Table 10. Tukey post-hoc tests, omparing the mean text length at each of the three observations (see Table 11), indicated that retellings and dictations increased in length overall--that is, between observations one and three--and between observations two and three.

Suburban school. In the suburban ANOVA of text length, where sex was the between-subjects factor, and mode and observations were the within-subjects factors, significant effects for mode, observations, and sex by mode interaction resulted. Table 12 summarizes these findings.

Follow-up of the sex by mode interaction (using Tukey's post-hoc procedures) indicated only one comparison to be significant; specifically, the retelling texts produced by girls were significantly longer than their dictation texts. No significant text length differences were observed for the retelling and dictation texts produced by boys; no significant text length differences were found for boys and girls overall either in retelling or in dictation. Table 13 presents the means for this sex by mode comparison, and Figure 2 depicts these comparisons.

Table 9

Means and Standard Deviations of Text Length in Retelling and Dictation, by Dialect and Observation, for Urban School

Dialect	Observation	Text Length Measure	
		M	SD
Vernacular		19.50	14.07
	1	13.46	10.81
	2	22.83	13.66
	3	22.21	15.81
Nonvernacular		43.89	33.88
	1	29.00	17.44
	2	42.13	46.86
	3	60.54	22.81
Observation Means Overall	1	21.23	16.36
	2	32.48	35.51
	3	41.38	27.42

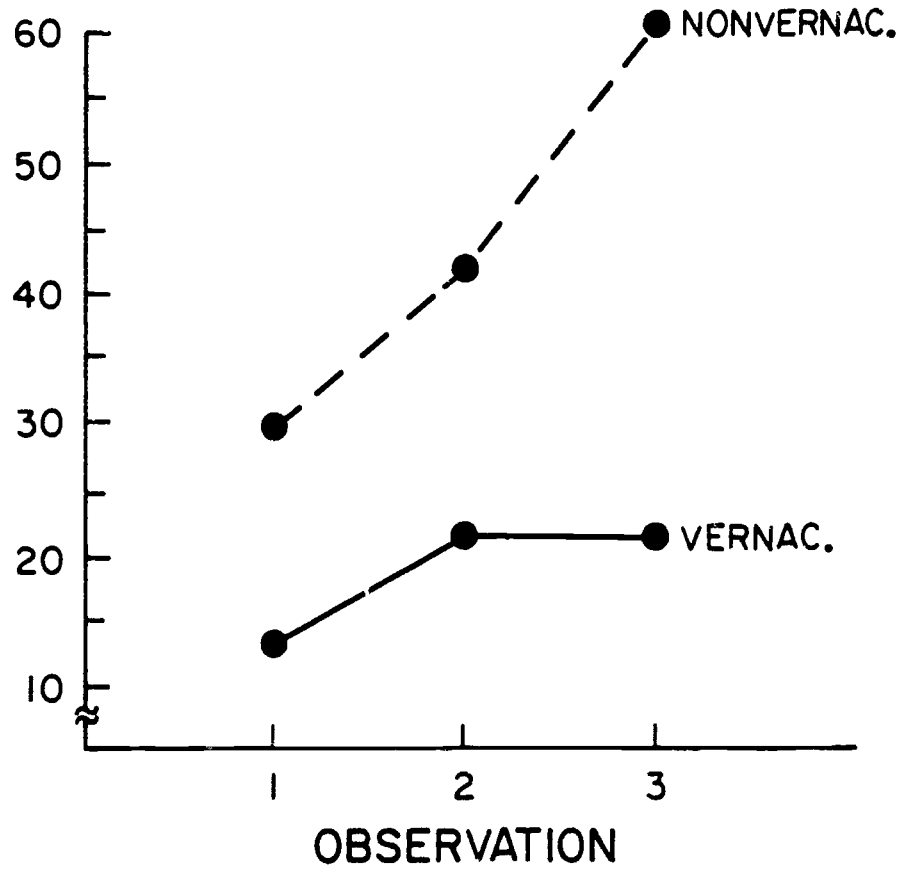

Figure 1: Dialect as a function of observation on text length for urban school

Table 10

ANOVA of Text Length in Retelling and Dictation by School, Sex, Mode, and Observation, for Urban-Suburban School Replication

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	571.96	0.31	.58
Sex (B)	1	126.59	0.07	.80
School X Sex (AxB)	1	629.09	0.34	.57
S/AB	20	1848.16		
Within Subjects	120			
Mode (C)	1	2123.60	3.86	.06
School X Mode (AxC)	1	1580.04	2.87	.11
Sex X Mode (BxC)	1	2002.44	3.64	.07
School X Sex X Mode (AxBxC)	1	130.31	0.24	.63
SC/AB	20	549.78		
Observation (D)	2	7567.64	13.64*	.001
School X Observation (AxD)	2	792.72	1.43	.25
Sex X Observation (BxD)	2	345.90	0.62	.54
School X Sex X Observation (AxBxD)	2	119.26	0.22	.81
SD/AB	40	554.70		
Mode X Observation (CxD)	2	644.02	0.96	.39
School X Mode X Observation (AxCxD)	2	545.22	0.82	.45
Sex X Mode X Observation (BxCxD)	2	792.00	1.18	.32
School X Sex X Mode X Observation (AxBxCxD)	2	469.92	0.70	.50
SCD/AB	40	669.03		
TOTAL	143			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is significant at p < .01.

Table 11

Means and Standard Deviations of Text Length in Retelling and Dictation by School, Sex, Mode, and Observation, for Urban-Suburban School Replication

School	Sex	Mode	Observation	Text Length Measure	
				M	SD
Suburban	Males	Retelling	1	34.17	15.25
			2	30.83	15.39
			3	58.67	26.10
		Dictation	1	30.33	25.53
			2	38.17	47.12
			3	40.33	25.09
	Females	Retelling	1	46.00	8.37
			2	42.67	15.73
			3	70.00	22.03
		Dictation	1	27.00	27.04
			2	24.50	17.73
			3	36.17	9.60
Urban	Males	Retelling	1	38.33	16.07
			2	37.33	9.52
			3	58.33	18.21
		Dictation	1	16.50	9.46
			2	60.00	94.50
			3	71.00	35.42
	Females	Retelling	1	30.83	9.56
			2	40.00	9.40
			3	61.67	13.84
		Dictation	1	30.33	25.71
			2	31.17	20.78
			3	51.17	19.25
Observation Means Overall			1	31.69	19.02
			2	38.08	37.91
			3	55.92	23.95

Table 12

ANOVA of Text Length in Retelling and Dictation
by Sex, Mode, and Observation, for Suburban School

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	95.67	0.07	.75
S/A	10	1292.68		
Within Subjects	60			
Mode (B)	1	3683.66	17.09	.002
Sex X Mode (AxB)	1	1577.35	7.32	.02
SB/A	10	215.57		
Observation (C)	2	2335.33	5.38*	.01
Sex X Observation (AxC)	2	47.38	0.11	.90
SC/A	20	434.20		
Mode X Observation (BxC)	2	678.21	1.48	.25
Sex X Mode X Observation (AxBxC)	2	51.72	0.11	.89
SBC/A	20	459.93		
TOTAL	71			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,10) is significant at $p < .05$.

The significant main effect for mode indicates that retelling texts were significantly longer than dictation texts. And, the follow-up procedures comparing text length across observations indicated that retelling and dictation texts were longer at observation three than they were at either, observation one or two. No significant difference, however, relative to text length, existed between observations one and two.

Text Length in Dictation Only

Three separate ANOVAs analyzed the text length measure of the dictations. Only in the urban analysis was significance obtained. This analysis--in which dialect and sex served as the between-subjects factors, and observations served as a within-subjects factors--resulted in a significant effect for dialect. (Observations failed to be significant when the Geisser-Greenhouse conservative F test was applied.) Table 14 displays the findings of this urban ANOVA. An examination of the mean number of T-units for dialect presented in Table 15, indicates that nonvernacular children produced longer dictations than the vernacular children did.

The tables of results for the other two ANOVAs--the school replication and suburban analyses, for which no significance was found--and corresponding tables of means and standard deviations, are found in tables 16, 17, 18, and 19.

Syntactic Complexity

Syntactic complexity of a text was measured in terms of the mean number of words per T-unit (see definition of T-unit in Procedures) and served as a dependent variable in nine ANOVAs. As already noted, the results of these analyses--which correspond to the cohesion and story structure MANOVAs and the text length ANOVAs--are reported for the purpose of providing descriptive information.

Syntactic Complexity in Writing

Three separate ANOVAs analyzed the syntactic complexity of the writing texts. The first ANOVA analyzed the data at the urban school in which dialect and sex served as between-subjects factors, and observations served as the within-subjects factor. The second ANOVA analyzed the syntactic complexity of the writing data produced by the nonvernacular children from both the suburban and urban schools. In this school replication, school and sex were the between-subjects factors, and observations was the within-subjects factor. The third ANOVA analyzed the syntactic complexity variable in writing, at the suburban school. Here, sex was the between-subjects factor and observations was the within-subjects factor.

Table 13

Means and Standard Deviations of Text Length in Retelling and Dictation by Sex, Mode, and Observation, for Suburban School

Mode	Sex	Observation	Text Length Measure	
			M	SD
Retelling			47.06	21.67
	Males	1	34.17	15.25
		2	30.83	15.39
		3	58.67	26.10
	Females	1	46.00	8.37
		2	42.67	15.73
		3	70.00	22.03
Dictation			32.75	26.42
	Males	1	30.33	25.53
		2	38.17	47.12
		3	40.33	25.09
	Females	1	27.00	27.04
		2	24.50	17.73
		3	36.17	9.60
Sex X Mode Means Overall				
Retelling	Males		41.22	22.40
	Females		52.89	19.83
Dictation	Males		56.28	32.40
	Females		29.22	19.01
Observation Means Overall		1	34.38	20.50
		2	34.04	26.58
		3	51.29	24.64

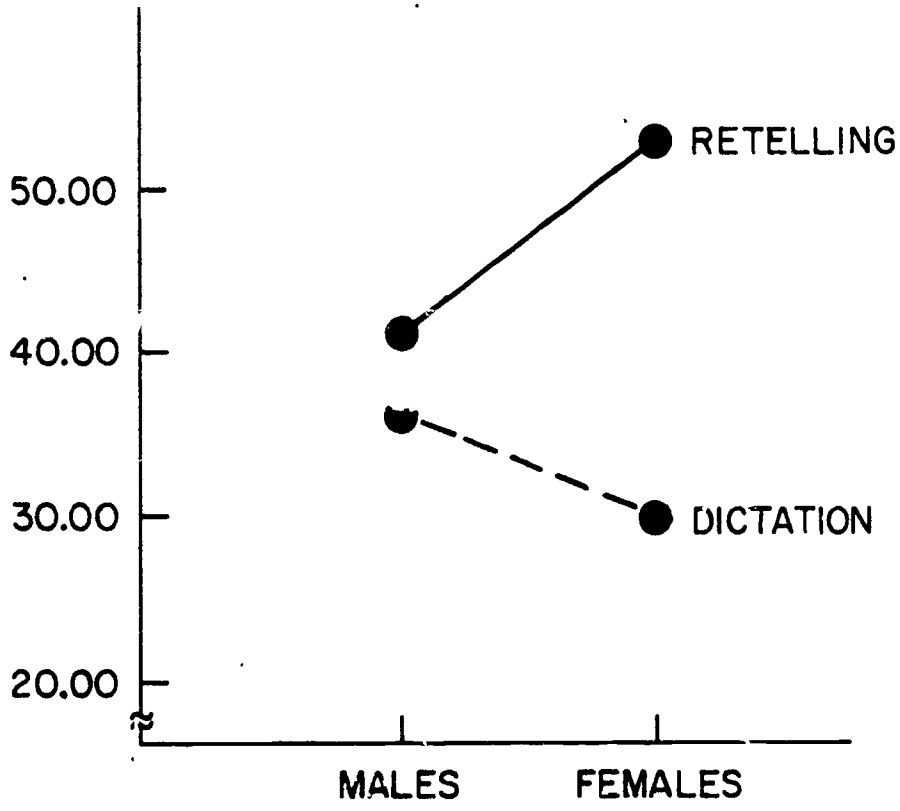

Figure 2. Mode as a function of sex on text length for suburban school

Table 14

ANOVA of Text Length in Dictation
by Dialect, Sex, and Observation, for Urban School

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	11806.61	7.35	.01
Sex (B)	1	24.50	0.02	.90
Dialect X Sex (AxB)	1	1963.55	1.22	.28
S/AB	20	1605.84		
Within Subjects	48			
Observation (C)	2	3189.20	3.92*	.03
Dialect X Observation (AxC)	2	1409.54	1.73	.19
Sex X Observation (BxC)	2	1023.86	1.26	.30
Dialect X Sex X Observation (AxBxC)	2	597.91	0.73	.49
SC/AB	40	814.10		
TOTAL	71			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) was not significant, $p < .05$.

Table 15

Means and Standard Deviations of Text Length in Dictation by Dialect, Sex, and Observation, for Urban School

Dialect	Sex	Observation	Text Length Measure	
			M	SD
Vernacular			17.75	14.71
	Males	1	5.17	0.75
		2	16.17	8.04
		3	18.00	9.14
	Females	1	19.17	15.51
		2	27.33	20.03
		3	20.67	20.22
Nonvernacular			43.36	45.21
	Males	1	16.50	9.46
		2	60.00	94.50
		3	71.00	35.42
	Females	1	30.33	25.71
		2	31.17	20.78
		3	51.17	19.25
Observation Means Overall		1	17.79	17.30
		2	33.67	49.08
		3	40.21	31.10

Table 16

ANOVA of Text Length in Dictation
by School, Sex, and Observation, for Urban-Suburban
School Replication

Source	df	MS	F	p <
Between Subject	23			
School (A)	1	2026.68	1.07	.31
Sex (B)	1	1567.98	0.83	.37
School X Sex (AxB)	1	93.38	0.05	.83
S/AB	20	1894.58		
Within Subjects	48			
Observation (C)	2	3351.67	3.05	.06
School X Observation (AxC)	2	1242.56	1.13	.33
Sex X Observation (BxC)	2	1085.36	0.99	.38
School X Sex X Observation (AxBxC)	2	530.92	0.48	.62
SC/AB	40	1099.80		
TOTAL	71			

Table 17

Means and Standard Deviations of Text Length in Dictation by School, Sex, and Observation, for Urban-Suburban School Replication

School	Sex	Observation	Text Length Measure	
			M	SD
Suburban	Males	1	30.33	25.53
		2	38.17	47.12
		3	40.33	25.09
	Females	1	27.00	27.04
		2	24.50	17.73
		3	36.17	9.60
Urban	Males	1	16.50	9.46
		2	60.00	94.50
		3	71.00	35.42
	Females	1	30.33	25.71
		2	31.17	20.78
		3	51.17	19.25

Table 18

ANOVA of Text Length in Dictation
by Sex and Observation, for Suburban School

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	448.01	0.51	.49
S/A	10	887.94		
Within Subjects	24			
Observation (B)	2	293.58	0.41	.67
Sex X Observation (AxB)	2	98.86	0.14	.87
SB/A	20	715.91		
TOTAL	35			

Table 19

Means and Standard Deviations of Text Length in Dictation
by Sex and Observation, for Suburban School

Sex	Observation	Text Length Measure	
		M	SD
Males	1	30.33	25.53
	2	38.17	47.12
	3	40.33	25.09
Females	1	27.00	27.04
	2	24.50	17.73
	3	36.17	9.60

Of these three ANOVAs on syntactic complexity, only the first one resulted in any significant effects. More specifically, a significant main effect for dialect was obtained in the urban school ANOVA. Table 20 presents the details of this analysis. Means and standard deviations of the syntactic complexity measure for writing data at the urban school are displayed in Table 21. As indicated in Table 21 by the means on the syntactic complexity measure in writing for dialect, nonvernacular children produced more complex units (M = 8.27) than did vernacular children (M = 4.96).

Tables 22 and 24 provide the results of the other two ANOVAs. Means and standard deviations of the syntactic complexity measures for the two analyses can be found in tables 23 and 25, respectively.

Syntactic Complexity in Retelling and Dictation

Three ANOVAs analyzed the syntactic complexity of the retelling and dictation texts. The results of these analyses are presented below.

Urban school. The urban school ANOVA of syntactic complexity was a mixed design in which dialect and sex served as between-subjects factors, and mode and observations served as within-subjects factors. As indicated in Table 26, this analysis resulted in three significant effects: dialect, mode, and the first-order interaction of dialect by time. (Note that the conservative F test for the observations factor failed to reach significance.)

Tukey post-hoc tests, comparing the means of the dialect by observation interaction (see Table 27 for means and standard deviations), resulted in the following significant findings: nonvernacular children produced retellings and dictations of greater syntactic complexity at the second observation than the vernacular children did; vernacular children's texts increased in syntactic complexity from observation two to observation three. See Figure 3 for a display of this dialect observation interaction.

Dialect and mode mean differences on syntactic complexity are presented in Table 28. Nonvernacular children's texts were significantly more syntactically complex than those produced by the vernacular children. The retellings were more syntactically complex than were the dictations.

Table 20

ANOVA of Syntactic Complexity in Writing
by Dialect, Sex, and Observation, for Urban School

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	198.24	10.92	.004
Sex (B)	1	18.80	1.04	.32
Dialect X Sex (AxB)	1	28.79	1.59	.22
S/AB	20	18.16		
Within Subjects	48			
Observation (C)	2	1.60	0.12	.89
Dialect X Observation (AxC)	2	11.24	0.83	.44
Sex X Observation (BxC)	2	23.88	1.77	.18
Dialect X Sex X Observation (AxBxC)	2	9.86	0.73	.49
SC/AB	40	13.49		
TOTAL	71			

Table 21

Means and Standard Deviations of Syntactic Complexity Measure in Writing by Dialect, Sex, and Observation, for Urban School

Dialect	Sex	Observation	Syntactic Complexity Measure	
			M	SD
Vernacular			4.96	4.23
	Males	1	3.00	2.00
		2	7.08	7.00
		3	4.42	2.35
	Females	1	4.92	6.18
		2	3.64	3.01
		3	6.67	1.85
Nonvernacular			8.27	3.45
	Males	1	10.08	3.04
		2	9.94	6.14
		3	8.23	1.04
	Females	1	7.45	3.98
		2	6.85	2.23
		3	7.09	1.56

Table 22

ANOVA of Syntactic Complexity in Writing
by School, Sex, and Observation, for Urban-Suburban
School Replication

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	2.11	0.25	.62
Sex (B)	1	34.10	4.02	.06
School X Sex (AxB)	1	14.92	1.76	.20
S/AB	20	8.48		
Within Subjects	48			
Observation (C)	2	0.16	0.02	.98
School X Observation (AxC)	2	7.94	1.06	.36
Sex X Observation (BxC)	2	8.58	1.15	.33
School X Sex X Observation (AxBxC)	2	2.63	0.35	.71
SC/AB	40	7.48		
TOTAL	71			

Table 23

Means and Standard Deviations of Syntactic Complexity in Writing by School, Sex, and Observation, for Urban-Suburban School Replication

School	Sex	Observation	Syntactic Complexity Measure	
			M	SD
Suburban	Males	1	8.43	3.28
		2	8.05	1.46
		3	8.01	0.72
	Females	1	6.18	2.17
		2	7.94	1.65
		3	8.98	1.30
Urban	Males	1	10.08	3.04
		2	9.94	6.14
		3	8.23	1.04
	Females	1	7.45	3.98
		2	6.85	2.23
		3	7.09	1.56

Table 24

ANOVA of Syntactic Complexity in Writing, by Sex and Observation, for Suburban School

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	1.96	0.36	.56
S/A	10	5.37		
Within Subejects	24			
Observation (B)	2	4.31	1.46	.26
Sex X Observation	2	8.10	2.75	.09
SB/A	20	2.95		
TOTAL	35			

Table 25

Means and Standard Deviations of Syntactic Complexity in Writing by Sex and Observation for Suburban School

Sex	Observation	Syntactic Complexity Measure	
		M	SD
Males	1	8.43	3.28
	2	8.05	1.46
	3	8.01	0.72
Females	1	6.18	2.17
	2	7.94	1.65
	3	8.98	1.30

Table 26

ANOVA of Syntactic Complexity in Retelling and Dictation, by Dialect, Sex, Mode, and Observation, for Urban School

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	20.64	7.18	.01
Sex (B)	1	0.70	0.24	.63
Dialect X Sex (AxB)	1	0.98	0.34	.62
S/AB	20	2.88		
Within Subjects	120			
Mode (C)	1	8.35	4.63	.04
Dialect X Mode (AxC)	1	1.81	1.01	.33
Sex X Mode (BxC)	1	0.31	0.17	.68
Dialect X Sex X Mode (AxBxC)	1	0.02	0.01	.92
SC/AB	20	1.80		
Observation (D)	2	4.09	3.50*	.04
Dialect X Observation (AxD)	2	8.19	7.01**	.002
Sex X Observation (BxD)	2	0.08	0.07	.93
Dialect X Sex X Observation (AxBxD)	2	0.74	0.63	.54
SD/AB	40	1.17		
Mode X Observation (CxD)	2	0.33	0.20	.82
Dialect X Mode X Observation (AxCxD)	2	3.37	2.19	.13
Sex X Mode X Observation (BxCxD)	2	1.19	0.73	.49
Dialect X Sex X Mode X Observation (AxBxCxD)	2	0.48	0.30	.75
SCD/AB	40	1.64		
TOTAL	143			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) - not significant, $p < .05$.

**Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is still significant at $p < .05$.

Table 27

Means and Standard Deviations of Syntactic Complexity in Retelling and Dictation, by Dialect and Observation, at Urban School

Dialect	Observation	Syntactic Complexity Measure	
		M	SD
Vernacular	1	7.54	1.08
	2	7.43	1.02
	3	8.53	1.75
Nonvernacular	1	8.29	0.88
	2	9.02	1.37
	3	8.47	1.45

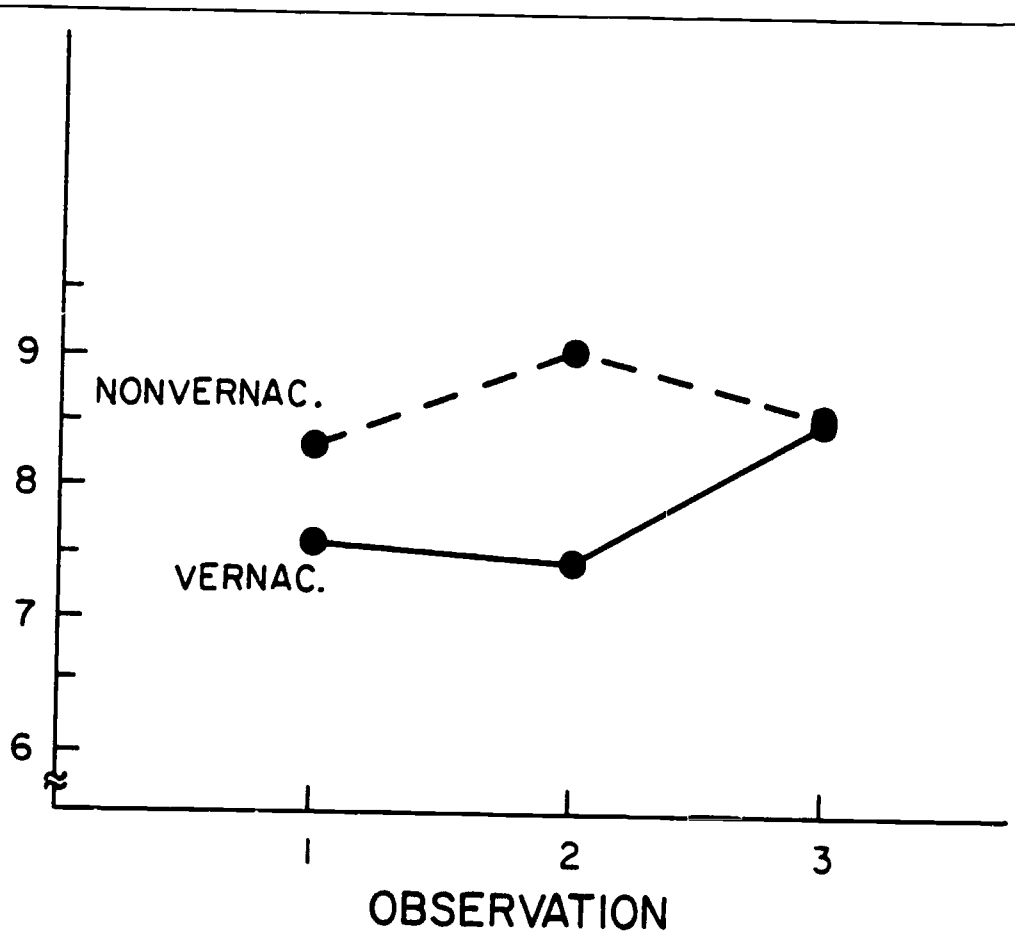

Figure 3. Dialect as a function of observation on syntactic complexity for urban school

Table 28

Mears and Standard Deviations of Syntactic Complexity in Retelling and Dictation, by Dialect, Sex, Mode, and Observation, at Urban School

Dialect	Sex	Mode	Observation	Syntactic Complexity Measure	
				M	SD
Vernacular				7.83	1.40
	Males	Retelling	1	7.89	0.49
			2	8.03	0.68
			3	8.50	0.76
		Dictation	1	6.81	1.50
			2	7.06	1.04
			3	8.64	2.28
	Females	Retelling	1	7.94	0.86
			2	7.89	0.62
			3	8.87	0.42
		Dictation	1	7.53	1.08
			2	6.73	1.20
			3	8.12	2.78
Nonvernacular				8.59	1.28
	Males	Retelling	1	8.55	1.02
			2	9.06	0.67
			3	8.83	.09
		Dictation	1	8.54	0.76
			2	9.20	1.80
			3	8.28	1.02
	Females	Retelling	1	8.16	0.73
			2	8.59	1.00
			3	9.12	1.70
		Dictation	1	7.91	1.01
			2	9.22	1.91
			3	7.63	1.74
Mode Means					
Overall		Retelling		8.45	0.94
		Dictation		7.97	1.70

School replication. School and sex were the between-subjects factors, and mode and observations were the within-subjects factors for the school replication ANOVA on the syntactic complexity measure. Table 29 summarizes this analysis and Table 30 presents the means and standard deviations of the dependent variable.

As indicated in Table 29, significant test statistics for the school by observation interaction, and for the main effect of observation, were obtained. Tukey post-hoc comparisons of the school X observation means (see Table 31 and Figure 4) resulted in two significant findings: at observation three, the retelling and dictation texts produced by suburban children were more syntactically complex than those produced by the urban children; syntactic complexity increased overall (that is, from observation one to observation three) in the texts produced by the suburban children. Due to the disordinal nature of interaction graphed in Figure 4, no attempt to interpret the main effect of observations was made. Means and standard deviations are given for school, sex, mode, and observations in Table 30.

Suburban school. The suburban school ANOVA, in which sex was the between-subjects factors, and mode and observations were the within-subjects factors, are presented in Table 32. Only the main effect for observations was significant. To compare the mean differences of the syntactic complexity measure at each observation (See Table 33), Tukey post-hoc texts were performed. These analyses indicated that syntactic complexity of retellings and dictations increased significantly overall. That is, the mean number of words per T-unit were significantly longer at observation three than at observation one, in the retelling and dictations at the suburban school.

Syntactic Complexity in Dictation Only

Three separate ANOVAs analyzed the syntactic complexity measure of dictations. Each analysis is discussed below.

Urban school. Dialect and sex as between-subjects factors and observations as the within-subjects factor represented the mixed design of the urban ANOVA. Table 34 presents the results of the analysis. As indicated in Table 34, two significant effects were obtained: the main effect of dialect, and the dialect X observation first-order interaction.

To compare dialect differences as a function of observation (See Table 35 for means and standard deviations; also see Figure 5), Tukey post-hoc tests were performed. There were no significant differences on the syntactic complexity measure in dictations produced by either, vernacular or nonvernacular children, over the three observations. The only significant difference observed was at observation two, where dictations produced by nonvernacular speakers were more syntactically complex than those produced by vernacular speakers. Since the pattern for each dialect group, as a function of observations, was not similar, the interpretation of the significant main effect of dialect was not attempted.

Table 29

ANOVA of Syntactic Complexity in Retelling and Dictation by School, Sex, Mode, and Observation, for Urban-Suburban School Replication

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	0.95	0.17	.68
Sex (B)	1	126.59	0.07	.80
School X Sex (AxB)	1	8.99	1.62	.22
S/AB	20	5.56		
Within Subjects	120			
Mode (C)	1	7.15	3.50	.08
School X Mode (AxC)	1	1.28	0.63	.44
Sex X Mode (BxC)	1	0.48	0.24	.63
School X Sex X Mode (AxBxC)	1	0.00	0.00	1.00
SC/AB	20	2.04		
Observation (D)	2	9.94	7.74*	.001
School X Observation (AxD)	2	7.64	5.95*	.005
Sex X Observation (BxD)	2	1.79	1.39	.26
School X Sex X Observation (AxBxD)	2	0.59	0.46	.63
SD/AB	40	1.28		
Mode X Observation (CxD)	2	0.52	0.35	.71
School X Mode X Observation (AxCxD)	2	4.53	3.06	.06
Sex X Mode X Observation (BxCxD)	2	0.18	0.12	.89
School X Sex X Mode X Observation (AxBxCxD)	2	0.70	0.47	.63
SCD/AB	40	1.48		
TOTAL	143			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) was significant at $p < .05$.

Table 30

Means and Standard Deviations of Syntactic Complexity In Retelling and Dictation by School, Sex, Mode, and Observation, for Urban-Suburban School Replication

School	Sex	Mode	Observation	Syntactic Complexity Measure	
				M	SD
Suburban	Males	Retelling	1	8.50	1.10
			2	8.62	1.11
			3	8.87	1.74
		Dictation	1	7.44	2.38
			2	8.09	2.35
			3	8.92	0.97
	Females	Retelling	1	8.64	1.70
			2	9.57	0.89
			3	10.22	0.90
		Dictation	1	.50	1.58
			2	8.49	0.79
			3	10.19	2.76
Urban	Males	Retelling	1	8.55	1.02
			2	9.06	0.67
			3	8.83	1.09
		Dictation	1	8.54	0.76
			2	9.20	1.80
			3	8.28	1.02
	Females	Retelling	1	8.16	0.73
			2	8.59	1.00
			3	9.12	1.70
		Dictation	1	7.91	1.01
			2	9.22	1.91
			3	7.63	1.74

Table 31

Means and Standard Deviations of Syntactic Complexity in Retelling and Dictation, by School and Observation, for Urban-Suburban School Replication

School	Observation	Syntactic Complexity Measure	
		M	SD
Suburban	1	8.02	1.73
	2	8.69	1.45
	3	9.55	1.77
Urban	1	8.29	0.88
	2	9.02	1.37
	3	8.47	1.45
Observation Means Overall	1	8.15	1.36
	2	8.85	1.40
	3	.01	1.69

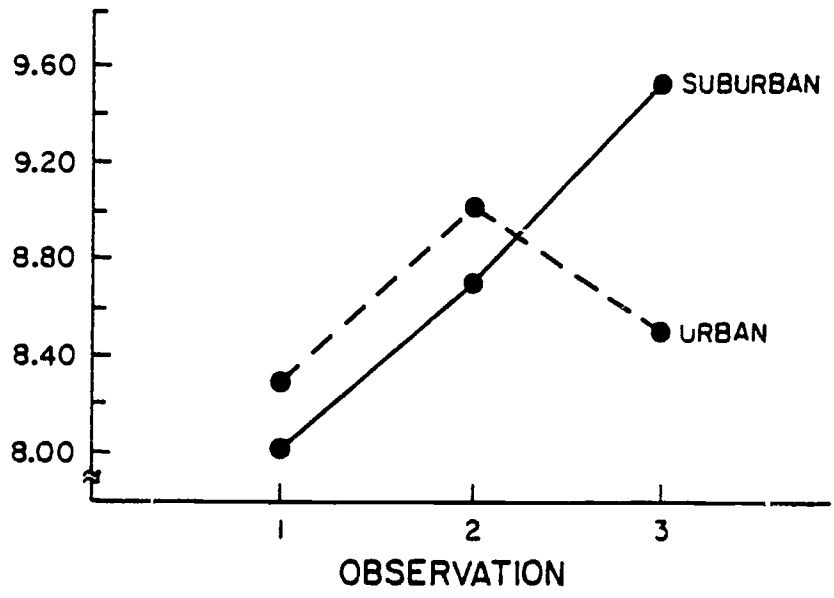

Figure 4. School as a function of observation on syntactic complexity for school replication

Table 32

ANOVA of Syntactic Complexity in Retelling and Dictation by Sex, Mode, and Observation, for Suburban School

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	8.69	1.15	.31
S/A	10	7.58		
Within Subjects	60			
Mode (B)	1	7.24	3.05	.11
Sex X Mode (AxB)	1	0.24	0.10	.76
SB/A	10	2.38		
Observation (C)	2	14.10	8.51*	.002
Sex X Observation (AxC)	2	2.18	1.32	.29
SC/A	20	1.66		
Mode X Observation (BxC)	2	2.01	1.28	.30
Sex X Mode X Observation (AxBxC)	2	0.11	0.07	.93
SBC/A	20	1.58		
TOTAL	71			

*Geisser-Greenhouse conservation F test using reduced degrees of freedom (1, 10) is significant at $p < .05$.

Table 33

Means and Standard Deviations of Syntactic Complexity in Retelling and Dictation by Sex, Mode, and Observation, for Suburban School

Sex	Mode	Observation	Syntactic Complexity Measure	
			M	SD
Males	Retelling	1	8.50	1.10
		2	8.62	1.11
		3	8.87	1.74
	Dictation	1	7.44	2.38
		2	8.09	2.35
		3	8.92	0.97
Females	Retelling	1	8.64	1.70
		2	9.57	0.89
		3	10.22	0.90
	Dictation	1	7.50	1.58
		2	8.49	0.79
		3	10.19	2.76
Observation Means Overall		1	8.02	1.73
		2	8.69	1.45
		3	9.55	1.77

Table 34

ANOVA of Syntactic Complexity in Dictation
by Dialect, Sex, and Observation, for Urban School

Source	df	MS	F	p <
Between Subjects	23			
Dialect (A)	1	17.35	4.67	.04
Sex (B)	1	0.98	0.26	.61
Dialect X Sex (AxB)	1	0.63	0.17	.69
S/AB	20	3.72		
Within Subjects	48			
Observation (C)	2	1.43	0.69	.51
Dialect X Observation (AxC)	2	11.24	5.41*	.008
Sex X Observation (BxC)	2	0.61	0.29	.75
Dialect X Sex X Observation (AxBxC)	2	1.17	0.56	.57
SC/AB	40	2.08		
TOTAL	71			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is significant at $p < .05$.

Table 35

Means and Standard Deviations of Syntactic Complexity in Dictation by Dialect, Sex, and Observation, for Urban School

Dialect	Sex	Observation	Symtactic Complexity Measure	
			M	SD
Vernacular			7.48	1.79
	Males	1	6.81	1.50
		2	7.06	1.04
		3	8.64	2.28
	Females	1	7.53	1.08
		2	6.73	1.20
		3	8.12	2.78
Nonvernacular			8.46	1.47
	Males	1	8.54	0.76
		2	9.20	1.80
		3	8.28	1.02
	Females	1	7.91	1.01
		2	9.22	1.91
		3	7.63	1.74
Dialect X Observation Means Overall				
Vernacular		1	7.17	1.30
		2	6.90	1.09
		3	8.38	2.44
Nonvernacular		1	8.22	0.92
		2	9.21	1.77
		3	7.95	1.40

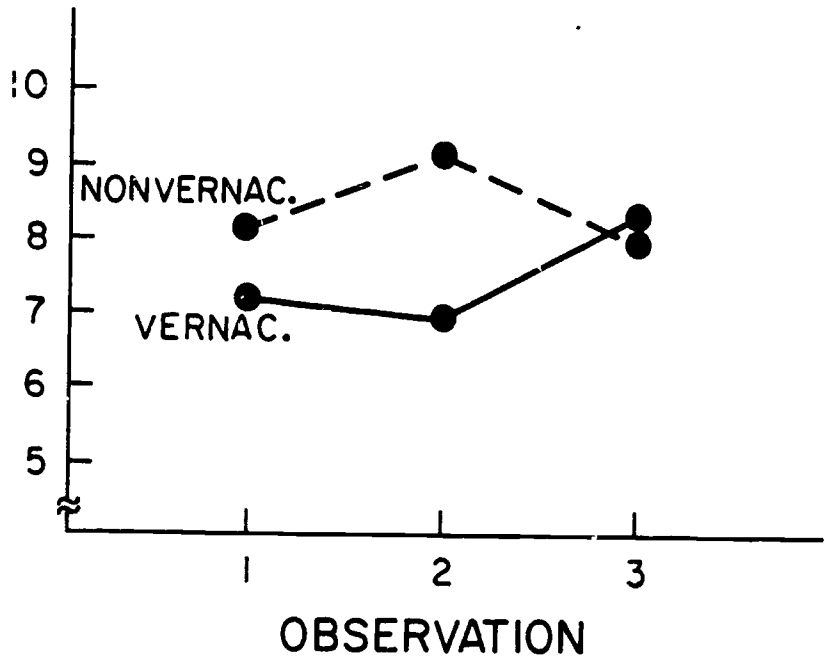

Figure 5. Dialect as a function of observation for syntactic complexity for urban school

Table 36

ANOVA of Syntactic Complexity in Dictation
by School, Sex, and Observation, for Urban-Suburban
School Replication

Source	df	MS	F	p <
Between Subjects	23			
School (A)	1	0.01	0.00	.96
Sex (B)	1	0.11	0.02	.89
School X Sex (AxB)	1	4.49	0.85	.37
S/AB	20	5.30		
Within Subjects	48			
Observation (C)	2	6.55	3.67**	.04
School X Observation (AxC)	2	11.96	6.69*	.003
Sex X Observation (BxC)	2	0.62	0.35	.71
School X Sex X Observation (AxBxC)	2	0.99	0.55	.58
SC/AB	40	1.79		
TOTAL	71			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) is significant at $p < .05$.
**Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,20) fails to reach significance, $p < .05$.

Table 37

Means and Standard Deviations of Syntactic Complexity in Dictation by School, Sex, and Observation, for Urban-Suburban School Replication

School	Sex	Observation	Syntactic Complexity Measure	
			M	SD
Suburban	Males	1	6.50	6.95
		2	13.17	13.70
		3	10.67	10.21
	Females	1	7.00	2.00
		2	9.33	4.63
		3	10.00	4.05
Urban	Males	1	7.67	4.80
		2	8.67	9.54
		3	7.17	4.88
	Females	1	10.83	12.21
		2	19.50	7.82
		3	11.83	2.14
School X Observation Means Overall				
Suburban		1	7.47	1.93
		2	8.29	1.69
		3	9.56	2.08
Urban		1	8.22	0.92
		2	9.21	1.77
		3	7.95	1.40

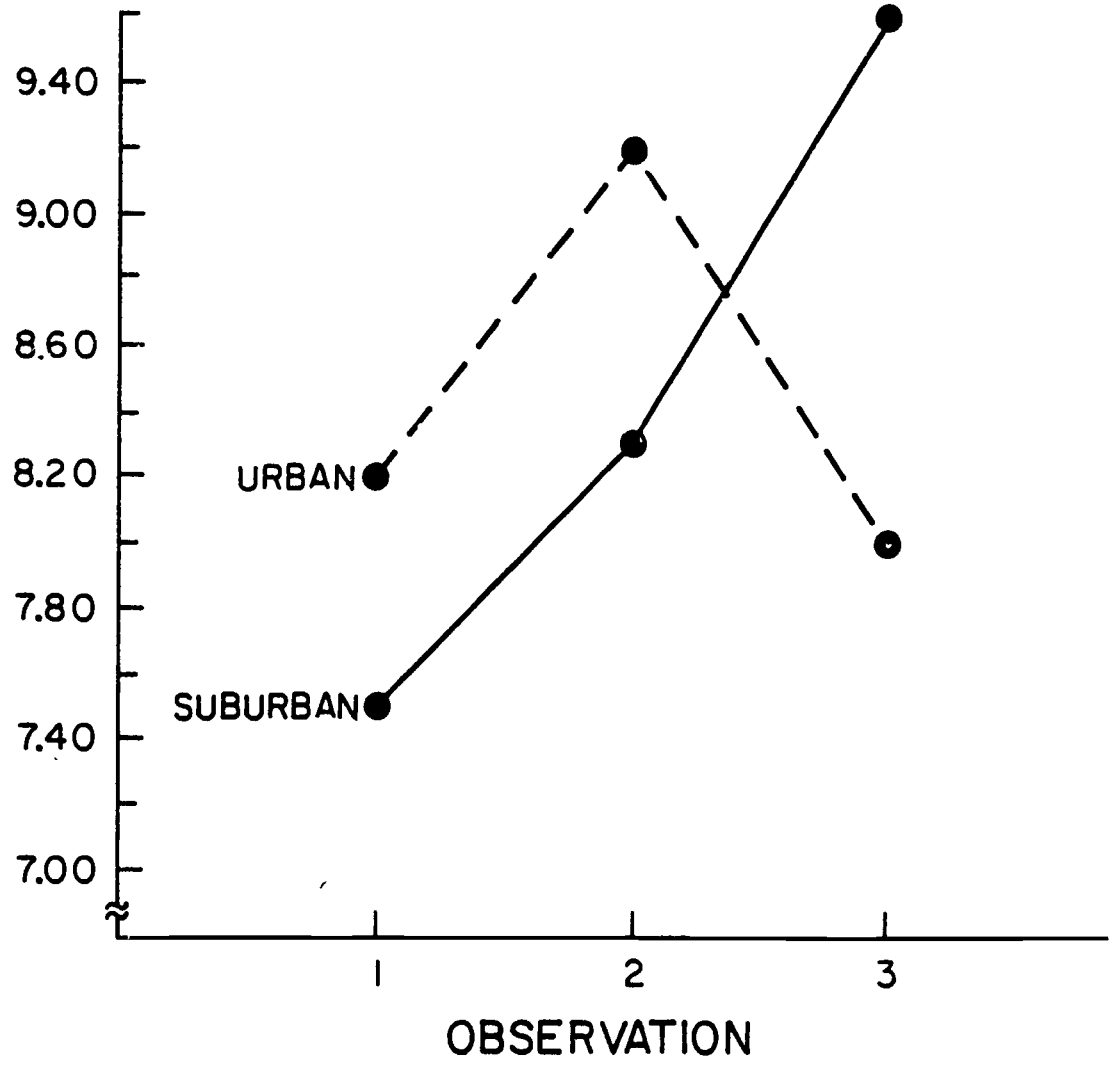

Figure 6. School as a function of observation on syntactic complexity for Urban-Suburban school replication

Table 38

ANOVA of Syntactic Complexity in Dictation
by Sex and Observation, for Suburban School

Source	df	MS	F	p <
Between Subjects	11			
Sex (A)	1	3.01	0.43	.53
S/A	10	7.02		
Within Subjects	24			
Observation (B)	2	13.29	5.98*	.009
Sex X Observation (AxB)	2	1.16	0.52	.60
SB/A	20	2.22		
TOTAL	35			

*Geisser-Greenhouse conservative F test using reduced degrees of freedom (1,10) is significant at p < .05.

Table 39

Means and Standard Deviations of Syntactic Complexity in Dictation, by Sex and Observation, for Suburban School

Sex	Observation	Syntactic Complexity Measure	
		M	SD
Males	1	7.44	2.38
	2	8.09	2.35
	3	8.92	0.97
Females	1	7.50	1.58
	2	8.49	0.79
	3	10.19	2.76
Observation Means Overall			
	1	7.47	1.93
	2	8.29	1.69
	3	9.56	2.08

School replication. In the ANOVA of the syntactic complexity measure for the school replication, school and sex were the between subjects factors and observations was the within-subjects factor. The results of this ANOVA are presented in Table 36. Means and standard deviations of the measure for the analysis can be found in Table 37.

Only for the first-order interaction of school by observations was a significant test statistic observed. (Observation failed to reach significance when applying the conservative F test.)

Tukey post-hoc analysis of the school by observation means (See Figure 6) indicated only one comparison to be significant. Syntactic complexity increased overall (from observation one to observation three) in the dictations produced by the suburban school children.

Suburban school. Table 38 summarizes the results of the ANOVA for syntactic complexity at the suburban school, in which sex served as the between-subjects factor, and observations served as the within-subjects factor. A significant test statistic for observations was observed. Follow-up tests, comparing the means at the three observations (See Table 39), indicated that syntactic complexity in dictations produced by suburban children increased significantly from observation one to observation three.

DISCUSSION

Text Length

Text length was operationalized as number of T-Units per text. Analyses of text length were performed to provide a descriptive backdrop against which the results and interpretations of the variables of primary interest in this study could be viewed. Results will be summarized briefly for the urban school study, the school replication study, and the suburban school study. Within the discussion of each study, the three modes of production will be discussed separately, except in those cases where a contrast between modes is of special interest.

The Urban School. For writing, both sex differences and observation differences were obtained. Girls ($\underline{M}$ = 7.00) overall wrote longer texts than boys ($\underline{M}$ = 3.92). Text length increased significantly over observations ($\underline{M}$ = 1.96, 5.04, 9.38). Increases in text length over observations were strongly related to increases in function types (.96), and increases in number of functions (.98), in written texts. At least for writing, children appeared to increase the length of their texts in relation to their range and sustaining power as story makers. Longer texts contained significantly more information about the actions and events in the tale. There were no differences in text length as a function of social class.

For dictation, the only significant finding indicated that middle class children produced longer texts than their lower class counterparts. While middle class and lower class children at the urban school dictated texts of approximately the same length at mid-first grade, dictated texts for lower class children did not increase in length over the remaining two observations. But for middle class children, text length increased significantly over the last two observations. Why these differences between the two groups of children emerged over observations is not clear. Social interaction with the scribes may have affected lower class children differentially. Or rate differentials in learning to read may have been involved in these differences. There simply is no good explanation for them; the pattern was different.

The same results for retellings over observations were obtained. Considering that the pattern across observations was dissimilar for the two groups, no interpretation of the observation main effect for length will be attempted.

The school replication. Written texts at the suburban school ($\underline{M}$ = 12.61) were roughly twice as long as those at the urban school ($\underline{M}$ = 6.81). Girls ($\underline{M}$ = 11.94) wrote significantly longer texts than boys ($\underline{M}$ = 7.47). For both groups, text length increased significantly over observations (see Table 5).

There were no significant differences in length of texts for dictation and retelling. Length of texts in both modes increased significantly over observations. When dictations were analyzed separately, however, there were no significant differences for any of the factors in the design: school, sex, or observations.

The suburban school. Writing text length increased significantly over observations. Girls' retellings were significantly longer than their dictations, but there were no significant length differences between modes, for boys in the suburban school. Overall, however, there were no significant differences in length for boys and girls, in either dictation or retelling. There were significant length differences, over observations, when both modes were included in the model. When dictations were analyzed separately, there were no significant differences for either, sex, or observations.

Syntactic Complexity

The syntactic complexity of texts was operationalized as mean number of words per T-Unit. Mean T-unit length and mean length of utterance have been employed as dependent variables in a wide variety of research contexts, ranging from studies of writing, to research on children's language acquisition. This metric appears to tap factors associated with clausal embedding, which have been characterized as "complexity." These indices of complexity have been criticized by a variety of reviewers as having a number of serious shortcomings (Dove, 1979; Bruner, 1978;

Bloom, Miller, and Hood, 1975). Yet, these measures are widely accepted as a reliable characterization of language development. Given the interest of a potentially large number of scholars in syntactic complexity or maturity, mean T-unit length was included as a dependent variable, again, to provide a descriptive backdrop for the principal variables. The organization of this section on syntactic complexity will parallel that for text length. The three analyses--the urban school study, the school replication study, and the suburban school study--will again serve as an organizational framework for the discussion of syntactic complexity.

The urban school. Middle class nonvernacular children ($\underline{M}$ = 8.27) produced syntactically more complex written texts than did lower class vernacular children ($\underline{M}$ = 4.96). The results for retelling and dictation, however, were not as clear cut. Nonvernacular children produced retellings and dictations of greater syntactic compexity at observation two, than did vernacular speaking children; syntactic complexity, however, did not increase over observations for nonvernacular middle class or for vernacular-speaking children. Overall, retellings were syntactically more complex than dictations. When dictations were analyzed separately, again, nonvernacular children produced more complex texts at observation two than did vernacular speaking children, but no significant differences for snytactic complexity were obtained over observations. Thus, there is some basis for making the claim that, in terms of development, lower class vernacular-speaking children , over observations, were more directly affected by input stories in the production of their retellings, than were middle class nonvernacular children. This claim takes on even greater weight when the observation means for writing are considered ($\underline{M}$ = 3.95, 5.36, 5.55) for the vernacular population. These differences were not significant. Only retellings showed a significant increase over observations. Exposure to texts appeared to provide a resonant basis for increasing the complexity of clauses for the lower class vernacular population.

The suburban school. When middle class subjects in the two schools were compared, there were no significant differences in syntactic complexity in their written texts. On the other hand, both dictations and retellings increased significantly in snytactic complexity, over observations, for the suburban school population, but did not for the urban middle class population. Overall, children from the suburban school produced more syntactically complex texts, in both dictation and retelling, than did their urban counterparts. These differences between the two populations, both over observations, and in overall syntatic complexity, probably stem from school differences and not from background socio-economic differences.