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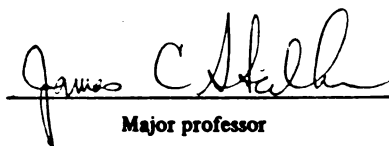
DEVELOPMENTAL PATTERNS IN
NATIVE AND NON-NATIVE READING ACQUISITION

presented by

JOANNE MARY DEVINE

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of the requirements for

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DEVELOPMENTAL PATTERNS IN
NATIVE AND NON-NATIVE READING ACQUISITION

By
Joanne Mary Devine

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ABSTRACT

DEVELOPMENTAL PATTERNS IN
NATIVE AND NON-NATIVE READING ACQUISITION

By

Joanne Mary Devine

Yetta Goodman's longitudinal study of children learning to read in English (1971) and other research supporting the notion of developmental patterns in reading acquisition raise a number of important questions about the growth of reading proficiency: (1) Are the developmental patterns noted perhaps a general feature of learning to read? (2) Will adults learning to read in a foreign language evidence patterns of development? and (3) Will any patterns of development seen in non-native adult readers resemble those found in the reading of young children learning to read in their native language? Despite intensive study of both native and non-native reading, few researchers have specifically addressed these questions.

The present research was designed to provide preliminary answers to the questions raised by studies of developmental trends in native reading acquisition. The investigation tests two hypotheses about the reading behavior of adults attempting to master reading in a second language. Two recurring themes in the literature on psycholinguistic research into language acquisition-- that language learning is a developmental process and that there are striking similarities between first and second language development-- underlie these hypotheses. (1) Adult non-native

readers at various proficiency levels will show different reading behavior as a function of those proficiency levels and (2) The patterns of change which accompany increased reading proficiency for the adult non-native readers will be similar to those reported for young readers learning to read in their native language.

Fourteen Mexican adults studying in a summer program at Michigan State University were the subjects of the study; each was ranked according to reading proficiency level. Tapes of the subjects' oral reading were examined for any deviations from the text. All such deviations (miscues) were noted and later studied using the Goodman Taxonomy of Reading Miscues, an instrument which provides detailed information on the subjects' reading behavior, especially with respect to their use of graphophonemic cues and their concern for preserving the grammatical structure and meaning of the text material.

The analysis of the oral reading miscues in English of the Spanish-speaking adults at the three proficiency levels confirms the first hypothesis; there are differences between the groups which are attributable to changes in reading level. The reading behavior of the high and low group readers demonstrated the following important differences: (1) high group readers' miscues resulted in syntactically and semantically acceptable structures far more frequently than those of the low group readers; (2) high group readers showed finer graphophonemic discrimination and greater flexibility in using cues from the visual display; (3) high group readers corrected more often and more successfully and were more sensitive to the degree of change to the text material in their corrections.

A comparison of the specific changes in reading behavior which

accompany higher reading proficiency for the non-native readers with those noted by Goodman for young native readers confirms the second hypothesis: the patterns of development are similar for the two groups. For readers in both studies, increased reading proficiency meant: (1) a decrease in miscue frequency; (2) an increase in processing larger units of language; (3) higher frequency of syntactically and semantically acceptable structures; (4) finer graphic and phonemic discrimination; (5) enhanced ability for use graphophonemic information from all parts of text words; (6) increases in semantic and syntactic acceptability of miscues with no graphophonemic similarity; (7) movement towards more stable syntactic and semantic acceptability; (8) increased tendency to preserve the structure and sense of the text; (9) more frequent corrections; (10) more successful corrections; (11) more likelihood that unacceptable or partially acceptable miscues would be corrected; and (12) increased tendency to correct already acceptable miscues as the degree of change to the text grammar or meaning increases.

The present study supports the existence of developmental trends in the reading of adults attempting to master reading in a foreign language. The research also establishes a relationship between changes in reading behavior, as a function of increased reading proficiency, for children learning to read in their native language and non-native adults learning to read in a foreign language.

Dedicated to
my parents, Marcella and John Devine,
and my husband, Ronald Edsforth,
with thanks and love.

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CHAPTER I

INTRODUCTION

The Research Questions

In Longitudinal Study of Children's Oral Reading Behavior (1971), Yetta Goodman reports the results of her two year observation of four young readers learning to read in their native language--English. Using the Goodman Taxonomy of Reading Miscues developed by Kenneth Goodman and others (1968), she traced the changes in oral reading errors (miscues) made by these readers as they moved towards greater reading proficiency. Through close analysis, Goodman* determined that there are a number of developmental changes, reflected in the miscues, which accompanied increased reading proficiency for these young readers. As they became more proficient, that is, better able to construct meaning from the text, these readers demonstrated changes not only in the overall frequency of oral miscues, but more significantly, in the type of miscue with respect to meaning. As Goodman observes, "miscues do not disappear as readers develop proficiency; rather the miscue types change qualitatively as readers become more proficient" (in Allen and Watson 1976:117).

The interest in developmental patterns in reading performance is not new with Goodman; the relationship between oral reading errors and the level of reading proficiency has been the subject of a number of studies of young native readers. Madden and Pratt (1941), observing

* Hereafter the name Goodman refers to Yetta Goodman; Kenneth Goodman will be referred to by his full name.

changes in errors over grade levels, conclude that patterns of errors might be indicative of certain degrees of reading skill or achievement. Ilg and Ames (1950) investigate the oral reading of children with proficiency levels ranging from prereading through fluency and conclude:

. . . many so-called errors might well be characteristic responses of certain age levels, and might indeed have definite developmental impact, as giving real clues to the rate of the child's progress through the reading gradient (p. 292).

Other more recent research (Kenneth Goodman and C. Burke 1973 and Clay 1968) supports the notion of developmental patterns or trends in the reading acquisition of young, native readers.

These studies raise important questions about the growth of reading proficiency: are these developmental patterns noted by Goodman and others perhaps a general feature of learning to read? Will adults learning to read in a foreign language evidence patterns of development? If so, will the patterns of development seen in foreign adults resemble those noted for young native readers? Despite the fact that a number of reading studies have addressed the question of reading strategies of non-native speakers reading in English (Rigg 1977a, 1977b; Barrera 1977; and Romantowski 1973 and others, and still others have compared the reading behavior of non-native subjects reading in English and in their native languages (Mott 1977; Barrera 1977; and Clarke 1978), to date no reported studies have specifically focused on possible changes in the reading strategies of adults as they attempt to become more proficient at reading in a foreign language. Nor have any investigations addressed the possible relationship between patterns of change seen in young, native readers and adults reading in a foreign language.

The current study was designed as a preliminary investigation of these areas. The reading behavior of fourteen non-native adults

(Spanish-speaking) at various proficiency levels is examined for any changes in reading strategies that could be said to accompany increases in reading proficiency; these changes are then compared to those developmental patterns noted by Goodman in the reading of young native readers. The research, then, focuses on two questions:

1. What changes in reading strategy, if any, accompany increased reading proficiency in non-native adults attempting to master reading in English?
2. What is the relationship between any changes in the adult non-native reading strategies and those noted for native children learning to read in English?

The presence of patterns of change in the reading behavior of non-native adults learning to read in English and further, a similarity between any patterns and the developmental trends observed for young native readers would indicate, at least to some extent, an important relationship between native and non-native reading acquisition and more generally between first and second language acquisition.

The following review of literature on the development of psycholinguistics, studies of child language acquisition and second language acquisition, and current investigations of the relationship between first and second language acquisition establishes a number of important themes underlying the current study: language learning is a developmental process; both first and second language learning can be seen to evidence developmental trends; and, finally, there are significant similarities between first and second language acquisition.

General Background

In the past five years, intensive research has been focused on the relationship between first and second language acquisition, specifically in the areas of listening and speaking. Interest in this line of

inquiry has grown in response to work done in the 1960s in the field of native (child) language development and additionally as a result of changing perceptions about the learning and teaching of foreign languages. The impetus for studies in these areas can, in turn, be traced to the influence of Noam Chomsky in the late 50s and early 60s. Chomsky, of course, is the father of what has been termed the 'psycholinguistic revolution'; his theory of transformational grammar with its ramifications for the study of language behavior within a framework of psychology has profoundly altered current thinking about language and its description.

Beginning with the publication of Syntactic Structures (1957) in which he first presented his system of transformational grammar and continuing through later works (in particular Aspects of the Theory of Syntax 1965), Chomsky offered a linguistic theory which " . . . was the first to force psychologists to reconsider their whole approach to the study of language behavior . . ." (Greene 1972:15). The 'old' approach to the study was firmly grounded in the behaviorist tradition of psychology; in its most extreme form, this theory explains all language behavior in terms of a Stimulus-Response model. From a strict behaviorist point of view, speech, like other forms of human (and animal) behavior, is conceived of as a 'response' to a 'stimulus' in the environment. Complex verbal behavior, like all animal behavior, is thus mechanistic in the sense that a strict behaviorist would claim that it can be understood, predicted and controlled through observation and manipulation of the 'stimulus' in the speaker's environment. In behaviorist learning theory, the process of child language development can also be explained in terms of S-R and 'reinforcement': as children

are 'reinforced' (both positively and negatively) for their verbal behavior, they eventually match their behavior to that required by the 'reinforcing agent' (Slobin 1974).

Chomsky offered a profound challenge to the behaviorist theory of language as a set of habits conditioned by environmental stimuli. In his "Review of Skinner's Verbal Behavior," (1959)--the definitive statement of the S-R, learning theory associated with the behaviorist school--he argues that theories of animal behavior, such as S-R, are simply incapable of explaining certain aspects of human linguistic behavior, for example, speakers' ability to understand and create novel utterances. Nor, Chomsky argues, can behaviorism offer an acceptable explanation of language development; acquisition of S-R probabilities would be at best an extremely uneconomical approach to the task of learning a language. He insists that verbal behavior is species-specific (perhaps part of what is commonly called 'human nature') and therefore differing categorically from other types of animal behavior. Chomsky argues further, as he does in many of his later writings, that all language is rule-governed and that languages share principles which to a large extent determine the form of these rules. It is these rules, which the child acquires actively (although obviously not with conscious effort), that account for the native speaker's ability to use language creatively, producing and understanding novel utterances. And the universality of the form of these rules, coupled with the child's innate ability to process language offers, from Chomsky's point of view, the only plausible explanation of language development. As he explains:

The child who learns a language has in some sense constructed the grammar for himself on the basis of his observation of sentences and nonsentences . . . the young child has succeeded

in carrying out what ~~for~~ from the formal point of view, at least, seems to be a remarkable type of theory construction. Furthermore, this task is accomplished in an astonishingly short time, to a large extent independently of intelligence, and in a comparable way by all children . . . The fact that all normal children acquire essentially comparable grammars of great complexity with remarkable rapidity suggests that human beings are somehow specially designed to do this, with data-handling or 'hypothesis-formulating' ability of unknown character and complexity (1959:57).

While his ideas have not gone unchallenged, Chomsky's critique of traditional psychological and linguistic theories of language structure and of the process of language acquisition (as well as the implications of both for the study of cognition) provided the major impetus for subsequent research in both first and second language development. Intensive work in each of these fields continued during much of the late 1950s and 1960s and eventually linguists began to ask important questions about the relationship between the two.

Child Language Acquisition

Linguists and psychologists interested in child language development during this time began to reexamine their description and explanations of child language in light of Chomsky's challenging new insights into the nature of language and of language learning. As they looked to their data and to older 'diary' studies, researchers in a wide variety of languages (see Slobin's edition of Leopold's Bibliography of Child's Language [1972] for an inventory of languages studies) focused on exactly what it was the child learned and how that learning took place. These investigators also began to compare their results for evidence of regularities in linguistic behavior across languages. By studying the developing language of the child, they hoped, then, to provide a full description of the child's language; offer a viable

explanation of the process of acquisition; and uncover regularities in development which might point to universal or innate characteristics of all languages, and, by implication, of all language users.

The era of the 'psycholinguistic revolution' saw studies in all aspects of first language development--phonological, semantic and syntactic; Ferguson and Slobin (1973) provide a representative collection of this work. The shared interests of researchers in each of the areas clearly reflect Chomsky's influence on language study. As mentioned above, the investigators first sought to describe the observable language of the child as fully as possible. They then tried to offer reasonable hypotheses about the linguistic knowledge of children which resulted in the observed performance--their underlying language system. Finally, these linguists followed children's language development longitudinally in an effort to describe the actual stages and process involved in language acquisition; they were, in this effort, particularly attentive to regularities across languages and language learners. Research in all areas of child language acquisition centered on these concerns (see, for example, Menyuk in Ferguson and Slobin [1973] and Garnica in Moore [1973] on the acquisition of phonology; and McNeill [1966] and Clark in Moore [1973] on semantic development) but it was perhaps the research into syntactic development--that area of acquisition that received the widest interest--which most clearly brought these issues into focus. Subsequent comparisons between first and second language development (discussed below) are frequently based on these earlier descriptions of the syntactic development of the child.

Many significant findings emerged from the study of child syntax. Chief among these were: a clearer sense of the rule-governed nature of

child speech; evidence to support the idea that acquisition proceeds in a universal way, that is, with a common order to the pattern of syntactic development; and data showing that active hypotheses-formation and testing, not imitation in the sense of rote memorization or repetition, account for the development of syntactic rules in the child.

The rule-governed nature of child speech quickly became evident to researchers; three independent studies begun in the early 1960s converged on this point. Investigators working at Harvard (see Brown 1973), Berkeley and at Walter Reed in Maryland (Ferguson and Slobin 1973) examined the speech of young American children in the beginning stages of syntactic development. Although each team of researchers offered a different description of the rule system of the child speech they observed, there was full agreement that the speech was, in fact, rule-governed. The nature of the controversy over the most adequate description of child syntax can be seen in McNeill (1970) who offers a 'Pivot/Open' (distributional) characterization and Bloom (1971) who attacks this description and offers instead a 'Phrase Structure Rules' (transformational) alternative.

Other researchers offered evidence that child syntax is not only rule-governed but also that its acquisition proceeds in stages that are very similar for all language learners, no matter what their native language. Slobin (1973) summarizes these findings and characterizes the four general stages in syntactic development that investigators have isolated. Linguists also attempted to delineate stages in the acquisition of particular structures within the various languages studied. For example, researchers in English (Cadzen; Ansfield and Tucker), Latvian (Rūke-Draviņa), and Russian (Popova; Zakharova; Bogoyavlenskiy), among

others, examine the growth of inflections in child syntax (see Ferguson and Slobin). Klima and Bellugi (1966) follow the development of English negation and questions; for each they isolate three general stages of syntactic development which characterized the language of the children under study. They point out that at each stage along the way to adult (or full) competence, child speech proved to be highly systematic: " . . . the language of children has its own systematicity and . . . the sentences of children are not just imperfect copy of those of an adult" (p.71). Other researchers (e.g. Miller [1964] on yes/no questions, negative and verb ellipsis) also find stages or patterns of structural development and again emphasize the systematic nature of child speech at every point in language acquisition.

The question of how the child's syntactic system actually develops was, of course, of great interest to linguists and psychologists. As mentioned above, behaviorists attributed language development to the processes of imitation and reinforcement. In this view the child is passive, and acquisition is, as Gough (1967) points out, considered " . . . a humble mechanical process, one devoid of complex mental or intellectual activity, so that, in the extreme the child is seen to resemble a parrot, or a kind of biological tape recorder, storing parental utterances for use at an appropriate moment" (p. 92). But researchers during this time found little evidence to support the strict behaviorist's view. In "Imitation in Language Development: If, When, and Why" (1974), Bloom, Hood and Lightbown follow incidents of imitation in the language development of six young children and conclude that indeed most (but not all) children imitate speech they are exposed to but

that this imitation is not the passive type that behaviorists describe. The imitation they observed in their study indicates that the children were highly selective, imitating neither those structures which were well-known nor those that were completely absent from their spontaneous speech, but rather only those structures which they were on the threshold of mastering: " . . . if he does imitate, it appears that when he will imitate and why are self-determined to the extent that they are based upon what the child already knows and what he is in the process of learning"(p. 414). The researchers here stress the active role of children in language development and maintain that imitation is a strategy, among other strategies, that children might use as they construct a grammar of their language from the linguistic data available in the environment.

While recognizing that imitation does play some role in the acquisition of language, other researchers had earlier stressed the limited nature of its contribution to the process. Gough (1967) points out that imitation cannot account for the novel utterances of children; furthermore, he observes, children understand far more than they can produce and clearly the young language learners cannot be imitating comprehension which is abstract and hence cannot be seen or heard. Gough echoes Chomsky's claim that language acquisition results from the child's actively forming hypotheses about the language and extending these generalizations to new circumstances. Ervin-Tripp (1964) also stresses the limitations of imitation as an explanation of language development: "We cannot look to overt imitation as a source for the rapid progress children make in grammatical skill . . . there is not one shred of evidence supporting a view that progress towards adult norms of

grammar arises merely from practice in overt imitation of adult sentences" (p. 397), and explains in more detail the processes of hypotheses formulation and testing by the child. From her study of six young children she offers compelling evidence that language learners are sensitive to patterns in a language (English past tense = -ed, for example) and regularly make generalizations which they extend to other situations (doed, goed, eated, etc.). She concludes, " . . . children seem to be disposed to create linguistic systems" (p. 404), an observation which neatly summarizes the findings of much of the research on child language acquisition conducted during this time.

Continued work in child language acquisition during the 1970s reinforced many of the earlier findings about the rule-governed nature of child speech, the order of acquisition, and the strategies common to language learners; but these later investigations also began to ask important new questions about child language development. In the area of syntax, for example, de Villiers and de Villiers (1974) studied the use of fourteen grammatical morphemes in speech samples from twenty-one children ages 16-40 months. Based on mean length of utterance of the subjects, they determined the rank order of appearance of the morphemes; their findings correlate highly with the rank order proposed by Brown (1973) in his longitudinal study of three children. The researchers then ask what might account for the rank order observed in both studies. They conclude that both grammatical and semantic complexity to some extent predict the order of acquisition of these morphemes. This attempt to characterize the source and nature of the knowledge of the child's early language is typical of the work during this period.

Bowerman (1973) argues for a semantic interpretation of children's earliest utterances. After reviewing the early speech of children from several different languages, she concludes

. . . the linguistic knowledge which lies behind children's initial attempts at word combining may not and need not include information about the basic grammatical relations or the constituent structure they entail . . . data suggest . . . that children launch their syntactic careers by learning simple order rules for combining words which in their understanding perform semantic functions such as agent, action, and object acted upon, or perhaps other even less abstract semantic functions (n. 212).

Bloom, Miller and Hood (1975) study the acquisition of action verbs, focusing on the individual variation: they disagree with Bowerman's conclusion about the strict semantic origin of early language learning, offering instead a picture of acquisition which depends on the interplay of both syntactic and semantic learning. Other explanations of early language development (as characterized by Bloom, et al. [1975] include a 'pragmatic' approach (see Briane 1974 and Schlesinger 1974) in which children's language growth is viewed in terms of practical considerations in various situations: and a 'sensimotor' approach (McNeill, reported in Bloom et al. [1975] emphasizes the importance of movement and action in determining which objects and events the child will talk about.

No matter which characterization of child language development researchers choose to accent, as increasing amounts of data began to accumulate, it became obvious that they could no longer deal with one aspect of language in isolation. The child's achievements in using sounds, structures, and words were clearly interrelated. Further, these achievements could be seen to go hand-in-hand with the development of communicative competence--success in using and manipulating language to

express, inform, and influence. Studies in child language development in the past five years have frequently focused on the growing communicative powers of children learning language. Keenan (1975) points out that beginning at two years of age, a child shows increasing skill in maintaining continuity of conversation topic over longer and longer periods of time. In addition, the young language learner also shows a heightening sensitivity to presupposition (de Villiers and Tager-Flusberg reported in de Villiers and de Villiers [1979]): the child is "able to see beyond the surface forms of language to presuppositions of an increasingly complex kind" (de Villiers and de Villiers 1979:160). Garvey (1975) and Ervin-Tripp (1977) trace the growth of direct and indirect requests and notice the same pattern of increasing competence in using complex structures to convey meaning. Sensitivity to the demands of audience, as seen through the ability to shift speech styles for both audience and circumstance seems to be well-established by age four (de Villiers and de Villiers 1979).

de Villiers and de Villiers summarize the research on the study of children's growing communicative competence:

. . . as children grow older they become less and less dependent on context in producing and understanding language . . . by the age of three they can make reference to absent persons and events. This enables them to carry their language to new circumstances and new audiences. At around age four they become increasingly sensitive to their listener's needs in conversation . . . They gradually learn to make use of the implications and presuppositions that underlie much of adult discourse . . . at around four or five years, children are capable of modifying their style of speech depending on their audience . . . (1979:164).

This interest in the communicative aspects of child speech has given rise to the notion of studying language acquisition specifically through discourse analysis (Peck 1978). Recent efforts in this area include work on the impact upon language learning of variations in the linguistic

environment of the child. The interest in environmental influences on language acquisition (see Landers 1975 and Sheldon 1979 on the effects of parental input) highlights what appears to be the latest direction in the study of child language acquisition: movement away from strict adherence to a single explanation of the process to a consideration of many possible influences.

Second Language Acquisition

Chomsky's insights into the rule-governed nature of language and the process of language acquisition gradually forced linguistics and language teachers in the late 1950s and the 1960s to reexamine their ideas about learning (and teaching) a second language. Like many investigators of child language development, these researchers and teachers were then working within a behaviorist model of language. However, while linguists and psychologists working in the field of child language acquisition debated the theoretical merits of behaviorism, second language researchers and teachers were primarily interested in finding practical solutions to the challenges of teaching language. The history of language instruction, especially instruction in English as a Foreign Language, reflects this central concern with classroom methodology. The impact of theoretical insights was felt primarily in shifts in pedagogical practices, although often at a considerable lag behind changes in theory. The major teaching strategies that have surfaced in English (and foreign) language instruction can be traced to the prevailing psychological and linguistic theories of the time (or, more accurately, of the immediately preceding time).

At the turn of the century most foreign language instruction consisted of practice in translation of written texts and emphasis on a

grammatical understanding of the target language. The "grammar-translation" approach referred to universally defined grammatical rules of classical languages as a model for learning rules of the new language. The "direct method" (used from about 1930 to 1945) emphasized the active use of language as a means of acquisition. In reaction to the earlier method, this type of language instruction shunned specific teaching of grammatical rules: instead the target language was treated 'globally' with entire utterances taught by means of association (Bosco and DiPietro 1970).

Beginning with the late 1940s and continuing well into the 1970s, the "audio-lingual" (also called the "aural-oral" and sometimes the "linguistic") method enjoyed popularity in the foreign language classroom. The method was based on a behaviorist model of language; its roots ran back to Bloomfield and his school of descriptive linguistics. In their efforts to make linguistics ~~An~~ an autonomous and scientific study, the Bloomfieldians applied their understanding of the term scientific--a rejection of all data that were not "directly observable or physically measureable"--to the study of language (Lyons 1970:29). In this rejection of a mentalistic interpretation of language in favor of a physical one, Bloomfield relied heavily on the notions of S-R, habit-formation, and practice as explanations of language acquisition. As he explained in his Outline Guide for the Practical Study of Foreign Languages:

The command of a language is not a matter of knowledge: the speakers are quite unable to describe the habits which make up their language. The command of a language is a matter of practice . . . LANGUAGE LEARNING IS OVERLEARNING: ANYTHING ELSE IS OF NO USE (1942:12).

Also in line with the descriptive linguistic orientation of this approach

to foreign language learning, the "audio-lingual" method stressed the non-universal or unique aspects of the target language. In the classroom these ideas translated into pattern drill of the target language's grammatical structures which the student was expected to practice until they became automatic.

The "audio-lingual" approach in its strictest form made certain assumptions about the process of language learning, the role of the learners in the process, and also about the nature of the system learned. As mentioned above, the act of learning a language was explained with reference to S-R, habit formation and practice. The role of the language learner was that of a passive receptacle; this method placed the burden of acquisition on the environment. Finally, the approach made some rather simplistic assumptions about the nature of language. With its emphasis on oral practice and automatic use of language patterns, the "audio-lingual" method implied that a language system consisted of only observable surface relationships between sentence elements. The task of learning a language in this view, then, was simply one of learning the sequential possibilities that appeared in the spoken form of the target language. These ideas about the nature of language and the process of acquisition were, of course, essentially identical to those expressed by behaviorists in their discussions of child language development. There was an important difference in their interests, however: teachers and linguists in the field of second language acquisition searched for a workable classroom methodology. It was finally the continually frustrating classroom experiences with the "audio-lingual" method that combined with the growing acceptance of Chomsky's ideas about linguistic systems and language acquisition to

bring the 'psycholinguistic revolution' to the foreign language classroom.

The label "cognitive code" was generally adopted in the late 1960s to refer to any foreign language teaching practices based on a psycholinguistic model of language. Although less established as a method in terms of books, materials and classroom techniques than the others described earlier, this approach was unified around the following psycholinguistic assumptions about the nature of language and the process of language learning: language is a rule-governed system and the process of learning a language involves active acquisition of this underlying rule system. Linguists and teachers realized, as Chomsky had earlier pointed out, that observable language constitutes only the surface forms and that the task of the learner is to acquire the underlying rules which may not be evident in these forms. As a result, they recognized that behaviorist notions about how language is acquired--imitation, reinforcement, practice of surface forms--could not account for the development of the rule-governed system of language as they now understood it. Emphasis shifted from the concern for drills and the automatic use of patterns to awareness of innate competencies of learners and attempts to guide them in the discovery of the rules of the new language. Wardhaugh (1970) summarizes the concerns of the "cognitive code": innateness, learning preferences and styles, cognition and cognitive structures, and sociological and psychological factors in language learning.

While each of these concerns began to command the attention of researchers and language teachers, particular study focused around a number of issues raised by psycholinguistic insights about language:

what is the nature of the second language learner's rule system?
 how is this rule system acquired? what factors contribute to language
 learning? and, how might insights from the above questions translate
 into actual classroom practice?

In their efforts to describe the linguistic system of the second language learner, linguists referred to Chomsky's notion of an underlying rule system; they rejected the idea that language performance could be attributable to a set of well-learned habits of surface forms. The earlier view that learning a new language was a matter of learning the new habits of the target language had allowed researchers to account for errors in performance by reference to points of contrast between languages. Since no underlying rule system was posited, these performance errors were viewed as a failure to learn the new habits, especially those new habits which differed from the old habits--the surface patterns of the first language. Researchers now challenged the assumption that interference from the native language caused errors in the target language (Dulay and Burt 1972). They pointed out that the practice of "contrastive analysis" (predicting points of interference from the native language) was not only theoretically misguided, but that its predictions about points of interference could not be substantiated. The common finding of researchers (Wardhaugh 1970; Ervin-Tripp 1970; George 1972; and Dulay and Burt 1972) suggested that the majority of learners' errors simply could not be traced to interference from their first languages. The language learners' errors were important, these researchers insisted, but not in the way proposed by proponents of "contrastive analysis": errors in second language performance were important because they provided evidence of the rule-governed nature of the learner's linguistic system, not because they

indicated where the native language interfered with the target language (Corder 1967; Dulay and Burt 1972). Investigators at this time began to take as a 'given' the rule-governed nature of the language learner's speech and to focus their efforts on characterizing that speech (see Selinker 1972 on "interlanguage" and Schumann 1974 on "pidginization").

Studies of learners' errors not only gave evidence of the systematic nature of their language but also provided insight into the processes involved in acquisition. These studies indicated that second language learners acquire their underlying rule system just as native children do, by active hypothesis-formation and testing with errors offering a clear picture of the processes at work (see Buteau 1970; Dulay and Burt 1974a; Corder 1975; and discussion below). Coupled with this evidence of common strategies for acquisition is data which suggests that there are strong similarities across languages and language learners in the order of development of specific language structures (Dulay and Burt 1974b; Bailey et al. 1974; Larsen-Freeman 1976; Wode et al. 1978; and Anderson 1978).

Recent research attempts to define those factors which contribute to the acquisition of a second language and to determine the extent of their contributions. Chastin (1975) and Schumann (1975) point to the role of affective factors, such as attitude, motivation and social distance in second language learning. Other researchers suggest that important contributions are made by input in the speaker's environment (Gaies 1979); still others (e.g., Hatch 1978) insist that we must turn our attention to the study of discourse and second language acquisition for, they hold, it might be the case that the learning of the structures

of a language follows from, and is a product of, learning to interact verbally in the target language. As mentioned above, one of the central concerns in the study of the acquisition of a foreign language is the pedagogical implications of the research. A brief look at the proceedings from any recent foreign language conference (see for example On TESOL '79: Focus on the Learner) attests to the interest in classroom implications for the areas of research discussed above.

This continued work in second language acquisition within a psycholinguistic model has reinforced the idea expressed by Jakobovits (1968) that strong parallels exist between first and second language development. Much of the research into second language learning during the 1970s has focused on this important relationship.

Parallels Between First and Second Language Acquisition

Researchers interested in the parallels between first and second language development maintained that the general task of both groups of learners was essentially the same: learning the rules of the language. With that in mind, they turned their attention to the question of how that learning actually take place. This focus forced investigators to tackle a number of central issues in the study of second language acquisition. They first had to attempt to discover if stages of development and the strategies employed in first and second language acquisition were similar; they sought to clarify the roles of age and cognitive maturity in second language learning; they re-evaluated theories of native language interference on second language development (see above discussion). The literature on the relationship between first and second language acquisition reflects the intense interest in

these issues beginning in the late 1960s.

Jakobovits (1968) reviewed child language research pointing to concept-attainment and hypotheses-testing rather than imitation and practice as the central strategies for language development; he concluded, and other writers would later concur, that second language acquisition must also depend on these strategies. In insisting on similar processes for the two groups of language learners, he refutes the typical and, in his opinion, erroneous assumption that the adult's mature cognitive development somehow changes the process of language acquisition. He explains:

. . . the necessary knowledge for language acquisition cannot be gained from experience with the outside world . . . language acquisition is dependent on an innate endowment which constitutes the knowledge of language universals. Hence, the imputed advantage of advanced age and cognitive development is a dubious proposition (p. 71).

Jakobovits also takes up the question of negative transfer in second language learning. While he conceded that all forms of learning depend on what is previously known, he maintains that the observation that particular structures may cause difficulty due to transfer from the native language tells us nothing about how the learning actually takes place.

Corder (1967) also focuses on the similarities of the processes involved in language acquisition for the two groups. As he points out, obvious differences between the two groups (inevitability of learning, maturational level, previous existence of overt language behavior, and motivation) imply nothing about the actual process of language learning. Corder claims that the human endowment for language remains available after the acquisition of the primary language; the adult, in his view, is as capable as the child of acquiring a foreign language using the

same mechanisms and the same strategies. The central child language learning strategy of hypothesis-testing can be seen in operation, Corder insists, in the errors of the adult second language learner. These errors are examples of learners investigating the systems of the new language just as children do as they gradually approximate the language of their community. In Corder's opinion these errors are a fundamental part of the process of acquiring a second language.

Cook (1969) also takes up the issue of errors in adult second language learning, like Corder, relating them to the process of hypothesis-testing in child language development. She points out that for children, errors are taken to mean that grammar is in an interim stage whereas for adults learning a second language, errors are usually viewed as incorrectly learned items or rules of the grammar. This difference in assumptions about first and second language acquisition-- " . . . we learn our first language by a series of evolving hypotheses; we are assumed to learn a second language by building it up rule by rule" (p. 209)--in Cook's opinion obscures the basic similarities of the two processes. In a later study (1973) she reports the results of her investigation of children and adults learning relative clauses; the groups approached the task in much the same manner, leading Cook to conclude " . . . At the moment there seems to be no certain evidence that adults are different from children in language learning, once the other attributes of the adult such as increased memory span have been cancelled out" (p. 28). She maintains that reputed differences between the two groups of learners may be due more to effects of teaching practices in foreign language instruction (see Stenson 1974 on induced errors) than to real differences in the processes.

As the above discussion indicates, the argument that first and second language acquisition are essentially different focuses on questions about the strategies employed in language learning by each of the groups and the purported influence of native language on second language development. Taylor (1974) summarizes these arguments and offers support of the similarity between the two processes. He points out that features of child language development, such as simplification of structures and regularization of forms, can also be found in the speech of adult learning a second language, and further, errors noted in second language acquisition are, in fact, often examples of the processes in operation. On the question of interference of the native language on the development of a second language, Taylor insists that negative transfer is " . . . suspect with regard to language acquisition since it seems to be both psychologically invalid and generally unpredictable" and that the native language might more appropriately be viewed as . . . a reference point--a linguistic system which the student has no alternative but to use when he wishes to say something in the target language for which he is linguistically unprepared and when he has no other meaningful linguistic category in the target language on which to rely (p.p. 30-31).

Taylor also examines the issue of a "critical period" for language learning, concluding that the evidence once again does not support the notion of two distinct processes for first and second language acquisition. The "critical period" argument (Lenneberg 1967) maintains that adults are at a disadvantage in language acquisition because they have gone through the process of lateralization of the brain wherein the language functions are limited to the left hemisphere. Before lateralization, which Lenneberg believed occurred by puberty, language functions were said to take place in both brain hemispheres. The

increased specialization of the brain which restricts language function to the left hemisphere was thought to mark the decline of language learning abilities. However, as Taylor notes, more recent studies of the process of lateralization (Krashen 1973a) cast serious doubt on the proposed association between hemisphere dominance and the ability to acquire language. Krashen's work shows that lateralization occurs much earlier than previously assumed, perhaps as early as age three (some researchers would argue that lateralization is complete at birth; see de Villiers and de Villiers 1979), at a time when language learning ability is clearly still quite high. Taylor concludes that affective factors such as attitude, motivation and permeability of ego-boundaries rather than lateralization might account for some of the quantitative, as opposed to qualitative, differences between first and second language acquisition.

The work of Krashen and others seems to rule out a strict lateralizational model; however, in recent research, Selinger (1978) offers a modified claim about the "functional localization" (McLaughlin 1978) of language abilities. Essentially Selinger's argument is this: biological changes which accompany adulthood establish an "insurmountable" obstacle in most cases for complete language acquisition. Selinger calls on the notion of "critical periods" for language acquisition as an explanation; states of plasticity of the brain, which are related to the ability to acquire various parts of the language system, are the "critical periods". In his view, as maturing adults lose plasticity (this happens at various times--there are various "critical periods"), they lose the ability to learn certain aspects of language. Hence, adults can learn some, but not all, parts of a second

language. It is interesting to note that the argument rests primarily on evidence of adults' inability to acquire the phonological system of a second language; more research is clearly called for in the areas of syntactic and semantic acquisition.

The view that adults are generally at a disadvantage in language acquisition (whether because of a loss of brain plasticity or due to lateralization of brain function--which would certainly be a greater barrier to language development) does not appear substantiated in the research comparing first and second language learners (Ervin-Tripp 1974; Snow and Hoefnagel-Hohle 1978). Some researchers have suggested that because of their greater cognitive maturity, adults might even have certain advantages over children in language acquisition. Catford (in Lugton and Heinle 1971) had early voiced the claim that adults' greater overall cognitive maturity (with heightened powers of analysis and concentration) makes them "five times" as efficient as the child at the task of mastering the rules of a language. It is often the demands of the second language classroom curriculum and the distractions of the world which, Catford insisted, obscure (and sometimes negate) the adults' advantage in language learning. Despite his strong insistence that the two processes are essentially similar (see above discussion), Taylor does maintain that cognitive maturity affects second language development. He agrees with Krashen (1973b) that language acquisition is based heavily on general cognitive capacities rather than on a specific linguistic capacity as Jakobovits had earlier claimed. In Taylor's view, cognitive maturity gives the second language learner an edge, which while it does not fundamentally change the process, might speed it up. Snow and Hoefnagel-Hohle (1978) investigate the nature of this "edge"; their data show that the rate of

acquisition of morphological and syntactic rules appears to be accelerated for second language learners, suggesting that the ability to acquire rule systems increases with age and cognitive maturity.

Ervin-Tripp (1974) agrees that the older learner has certain advantages in language acquisition. The fact that languages are more alike than different and that they tend to have similar semantic content, in Ervin-Tripp's opinion, makes learning a second language an easier task than primary language learning. In addition, she concurs with the argument that increased cognitive maturity advantageously affects language acquisition; the older learner has more efficient memory heuristics and is generally "smarter", making language learning a less demanding activity.

These differences aside, Ervin-Tripp maintains that first and second language acquisition are, in all important respects, similar processes. Her own research indicates that, as the many other authors discussed above contend, both types of language development result from active hypothesis-formation and testing by the learner. Her data suggest further that many of the other observations made about children learning language apply equally to adults learning a second language. For example, she notes that second language learners, like children acquiring their native language, first learn those forms which are predictable and for which meaning is apparent. Both groups of learners also show a preference for the principle of one meaning-one form, rejecting two forms for what appears to be the same meaning or situation (also see Schumann 1974 on this principle at work in "pidginization"). Ervin-Tripp concludes that the assumption that first and second language acquisition are different is a result of uneven treatment of the two in

research rather than any genuine differences in the processes. She observes that typically, studies of child language acquisition focus on common stages of development and learner strategies while largely ignoring input (although see Landers 1975 and Sheldon 1979). On the other hand, investigations into second language development usually deal with statistical pooling which tends to obscure patterns and strategies; quite frequently the focus is on teaching materials. Given equal treatment in 'natural' language situations, first and second language learners will, Ervin-Tripp insists, go about learning language in strikingly similar ways.

Many studies have pointed out the similarities between the order of acquisition of certain language structures by children learning a second language (Dulay and Burt 1974); by adults and children learning the same second language (Bailey et al. 1974); and, by adults from different language backgrounds learning the same language (Bailey et al. 1974; Krashen et al. 1976; Larsen-Freeman 1976). Other recent work comparing first and second language (McLaughlin 1978; Spolsky 1979; Gaies 1979) supports the notion that the task, the processes and, given similar circumstances, the results, of first and second language learning are essentially similar.

Hypotheses

Based on the evidence presented in the review of literature on first and second language learning and the relationship between the two, the following hypotheses are offered in answer to the research questions posed for this study (see above, p.3). First, the adult non-native readers at various proficiency levels will show different reading strategies as a function of those proficiency levels. Second, the

patterns of change which accompany increased reading proficiency for these adult readers will be similar to those noted for young readers learning to read in their native language, as in the Goodman study.

CHAPTER II

DESIGN OF THE STUDIES AND ANALYTIC INSTRUMENT

This chapter discusses the general design of both the Goodman and the current studies. The first part of the chapter details the subject selection and evaluation, selection and preparation of the texts, and the administration of the readings, first in the Goodman study and then in the present investigation. A general discussion of the analytic instrument used in both studies--the Goodman Taxonomy of Reading Miscues--follows this section. Since the procedures for isolating and marking reading miscues, verification of markings, taxonomy analysis and tabulation are well-established (see Goodman and Burke 1972; Kenneth Goodman 1974; and Allen and Watson 1976), this second part of the chapter treats the two studies simultaneously, noting when and for what reasons modifications in these standard procedures were made.

The Goodman Study

General Design: This study is longitudinal covering four readers for a period of one year and nine months. The oral reading of the children was taped at regular intervals during this time. For two of the readers there were eight taping sessions; the third participated in seven and the fourth in six.

Subjects: Four native English-speaking elementary school children were subjects. All are Black and represent a relatively wide socio-economic

range in family background. Two readers, both boys (called Faust and Tony in the study), were designated as average readers by their first grade teachers and were considered proficient readers by their teachers during the period of the study. The other two readers (called Altha and Frank) were judged to be slow readers by their teachers both prior to the beginning of the investigation and during the study. All subjects were in a non-graded elementary school program, having completed two years and three months of schooling before the project began. Each reader was beginning a second year of reading instruction at the time of the first taping session.

The children in this study were in heterogenously grouped classrooms. Although the reading programs of the subjects varied, with some of their teachers stressing a 'phonics' approach more heavily than others, on the whole, the teachers used an eclectic approach in their instruction with basal reading materials forming the core of each program. The subjects' teachers reported that each of the readers was exposed to a wide variety of reading material in the classroom and that each student had access to the school's well-stocked library.

Texts: During regular intervals of the period of the study, the children were taped reading material new to them. Texts were chosen from graded reading series (a continuation of a basal series used in an earlier study): the particular selections were chosen in an effort to provide the readers with material which would pose some difficulty without leading to extreme frustration. A total of eighteen different selections were read by the subjects, all but three from the American Book Company Betts Basic Reader (complete bibliographic information appears in Goodman 1971:89-90). Goodman's inventory of story names and reading

dates (p. 6) indicates that within the two proficiency levels, the readers often read the same selections. For example, Faust and Tony (average readers) both read four of the same stories. Likewise the slow readers (Altha and Frank), while they read none of the same selections as the average readers, read five of the same stories. Two of the readers (one average, one slow) reread a section of a previous session's text at a later session for purposes of comparison (again see p. 6).

Administration of the Readings: The general procedures for administration of a miscue reading were followed in the Goodman study (see Goodman and Burke 1972). Each taping session began with a volume and equipment check during which the readers were asked to state their names and the date. Following that, the readers were instructed to read the entire selection aloud without the aid of the investigator. The researcher remained silent during any difficulties encountered by the readers. At the completion of each reading, the subjects were asked to retell the story in their own words, again without the aid of the investigator. When it appeared that readers had completed their retellings, the researcher then asked a series of non-leading questions, based on the information provided by the readers in the initial retelling, to elicit as much information as possible about the readers' comprehension of the selection. The investigator followed along on a duplicate copy of the text during the reading, marking miscues and noting any overt reading behavior. All taped material was later subjected to a full taxonomy analysis, discussed below.

The Present Study

General Design: The present study is a cross-sectional investigation of fourteen native Spanish-speaking adults. All taping sessions for these

readers took place during a four hour period in August, 1978. For each individual reader the taping session lasted approximately 45 minutes.

Subjects: The fourteen readers of the current investigation were members of a group of Mexican adults participating in a special summer program at Michigan State University during July and August of 1978. Information questionnaires (see Appendix A) completed by each subject indicated that the readers comprised a fairly homogeneous group. All were attached to the same university in the Yucatan peninsula of Mexico where they study in the Business school (in Business Administration, Marketing and related subjects). For the three women and eleven men in the study the average age was 23 and the range of ages went from 19 to 26 years. The only non-student of the group, a university instructor acting as group leader for the trip, was the oldest participant.

There were also similarities in the English language background of the participants. Each subject had studied English for at least two but not more than four years at the high school or college level and only two had visited the United States prior to attending the summer program, and in both cases the visits had been brief (under six weeks). Because of these facts, it seemed that no student would have a substantial advantage over the other readers due to extensive English language training or a prolonged period of acculturation in this country. In fact, the English Language Center Proficiency tests from Michigan State University indicated that while there was variation in overall proficiency, most (nine of the fourteen) of the readers scored fairly close to the average group score of 61 on a 100 point scale. At the time when the readers were taped, they had been studying in the U.S. for a total of six weeks, attending three hours of English classes per day.

Since the oral reading of the foreign students is eventually compared to that of the four native readers for evidence of similar developmental trends as a function of increased reading proficiency, it was necessary to group the readers of the current study according to proficiency levels. These readers were divided into three levels, high, medium and low, to represent the proficiency levels that the young readers would pass through as they progressed from low to high(er) reading proficiency. This level grouping was done solely on the basis of teacher evaluation. The English language instructor who worked with the students in their language classes for three hours daily was asked to rank the readers high, medium or low and to provide any further information that would be useful in determining the general reading proficiency of each subject. Reliance on teacher evaluation rather than test scores as a means of grouping subjects follows Farr (1969) and others whose research suggests that instructor assessment of student reading is an accurate measure, of equal value to a standardized test, in determining reading proficiency. In this study, teacher evaluation correlates highly with other reader comprehension scores available for the subjects, such as Cloze and Comprehending Scores in the miscue analysis.¹

Texts: During the taping sessions, each subject was asked to read material which had not been read previously. The two texts used (see Appendix C) were adapted from high school literature anthologies; they were chosen on the basis of three criteria: length, interest and difficulty. Since the subjects were asked to read and retell two stories, the selections were kept relatively short in order to avoid reader fatigue and to allow sufficient time for the administration of the

reading to all fourteen of the subjects in the three and one-half hour period of the data collection. The first reading, "The Weapon", adapted from the story by Fredric Brown, ran 850 words and the second, "Caged" by Lloyd Eric Reeve, 650. In an effort to satisfy the second criterion, interest, the stories were screened by a total of ten readers, five native English-speaking and five native Spanish-speaking, students at the English Language Center at Michigan State, but not members of the group of Mexicans who were the subjects of the present investigation. The screened readers indicated that they found both stories interesting, in particular responding favorably to the fact that both "Caged" and "The Weapon" called for inference from the reader. These results suggested that the stories were suitable for the adult readers of the current study.

In order to insure that the stories used would pose sufficient difficulty (causing the readers to miscue) yet not result in undue frustration, an informal pilot study was conducted. Five Spanish-speaking students at Michigan State's English Language Center whose scores on English Proficiency Tests were in the same range as those of the readers under study (between 55 and 65 on a 100 scale) were asked to read the two selections. All readers produced miscues--in every case over twenty--suggesting that the readings were sufficiently difficult. In addition, the unaided retellings of the pilot study readers indicated that comprehension was not frustrated by excessive difficulty in the texts. In order to provide a standard measure of graded reading difficulty, each of the readings was then subjected to analysis using the SMOG readability formula generally employed to determine the 'grade level' of reading material in American public schools. "The Weapon" had approximately an eighth grade level of reading difficulty and "Caged" was slightly more

advanced with a ninth grade readability level. Incidentally, both the pilot-study readers and the Mexican adult in the current study confirmed this assessment saying that they found "Caged" the more difficult of the two texts.

Administration of the Readings: All taping of the readings in the current investigation took place during one four hour session on August 3, 1978. Four researchers worked simultaneously in order to shorten the time needed to complete all reading sessions in an effort to reduce the possibility that the subjects, who studied and lived together, would discuss the stories and perhaps influence the results of later scheduled reading sessions. The researchers were the chief investigator in the study and three specially trained assistants. Each of the assistants was a student at Michigan State University who had completed upper division level course work in reading theory (in which the chief investigator was the instructor). As a part of their work each had completed at least one Miscue Analysis; they were, then, experienced in the procedures for the administration of readings. Although all sessions were conducted in English (and did not deviate from the established format), a special training meeting was held to review all standard procedures. The following set of general directions was reviewed at the training meeting and was distributed to each assistant at the time of the taping sessions.

1. Spend a few minutes talking to the readers. Use this time to get an idea of how well the readers understand your directions; gear your directions and comments accordingly. Remember that you should not offer any assistance once the reading has begun, so give full directions and

answer all questions prior to the administration of the reading.

2. Check taping equipment. Ask the readers to identify themselves and give the date. This information can be played back as a volume check.

3. Administer the reading. Begin with a full set of directions, using the following script as a model:

This is not a reading test. Please relax and just read as well as you can. Once you begin, I can't answer any questions or give you any help, so if you have any questions, please ask now. I want you to read the entire story to the finish. I want you to read the story aloud so that I can hear you on the tape. If you have any problems, please continue. Do the best you can. When you finish the entire story, I will ask you to give me a summary of what you remember. Try to remember as much as you can. Please remember that I can't help you with the reading once you begin.

It is very important that the readers understand that they will be asked to retell the story; make certain that the readers understand this point.

When the assistants had answered all questions and were reasonably assured that the readers understood all procedures, the taping began. The readers were given one story at a time which they read aloud; the researcher remained silent during the reading, following along on the text, making note of any overt behavior which accompanied the reading. When the reading was completed, the subjects were asked to set aside the copy of the text and recall as much as possible about the story. The investigator was instructed to again remain silent until the readers had completed the summary and only then to prod the readers with the general question, "What else can you remember?" When this prodding failed to elicit any further information from the readers, the researcher asked a series of open-ended questions designed to provide as much additional information as possible. Following standard procedures for retelling, the investigator based questions on retelling details provided by the readers and was receptive to all information offered, pursuing in equal detail

both the accurate information and misconceptions mentioned by the readers. For example, when one reader spoke of two sons in "The Weapon" (there was one), the researcher inquired about the names and ages of the two sons. In their questioning, the investigators referred to a list of open-ended questions (suggested by Goodman and Burke 1972) such as the following:

What else can you tell me about (character) ?

Who (else) was in the story?

Where did the story take place?

Why did (event) happen? What happened next?

What happened at the end of the story?

Why do you think the author wrote the story?

What do you think the story was telling you?

The same format was used for the reading and retelling of the second story. Retelling information provided another measure for assessing reader comprehension.

Taxonomy Analysis

Prior to the study of developmental patterns in reading behavior it was necessary to complete a close analysis of the oral reading of the subjects. The Goodman Taxonomy of Reading Miscues was the analytic instrument used to investigate the oral reading errors produced by the subjects in both the Goodman and the current studies.

The Taxonomy is based on a psycholinguistic model of the reading process which views reading as a "very special manifestation of the language process" (Burke, in Allen 1976). As such, reading involves complex interaction of the types of information generally available in language--syntactic and semantic cues--as well as the information specific

to written language--graphophonemic or sound/letter cues. In addition to these cues, readers, as experienced language users, also have a wealth of other information about language and meaning which they bring to the reading task. This richness of information allows readers to move towards comprehension by means of "scanning, fixing, selecting, predicting, testing, regressing, and confirming strategies" (Mott 1977). While it is not possible to directly observe these mental operations, readers' oral miscues can serve as 'windows' to the complex process of reading.

The Goodman Taxonomy was specifically designed to make use of the information provided by these 'windows'. The questions it poses focus on the ways in which each miscue operates in the total language system of the reader. The central notion here is that the miscues, the deviations from the print, are not simply random errors on the part of the reader, but are rather parts in the total language pattern. The questions the taxonomy asks of each error or miscue aid the researcher in fitting the miscues into this larger pattern and further in focussing attention on the ways in which readers are using information available to them in the reading task.

The Goodman Taxonomy provides a number of questions to be asked about each miscue, since the reader has, in every case, produced his response through the use of the wide range of information available to him in the reading process. Each question is answered on its own merits and the researcher does not have to choose between possible cues and causes (Kenneth Goodman 1969:19).

The taxonomy questions asked of each miscue in both studies are outlined below. The details of the coding for each of the sixteen taxonomy categories along with a comparison of the results in the Goodman and the current studies are the focus of subsequent chapters. For now, this

general summary of the areas of investigation in the Taxonomy analysis suffices to illustrate the types of questions the researchers must answer about each oral reading miscue.²

Type of Miscue--there are four types of miscues: substitution, insertion, omission and reversal.

Substitution: I'll come read with you ~~soon~~ ^{SOME}.

Insertion: I am not responsible for the actions of ~~other~~ ^{THE} people.

Omission: The boy skipped back to his ~~bed~~ room.

Reversal: "He's my deer," said ~~Billy~~ ^{Billy}. (Jenson 1972)

A frequent type of substitution miscue, especially with subjects reading in a foreign language is the non-word, coded \$.

Non-word substitution:

He rubbed his hands ~~BRISKLY~~ ^{\$ BRISKLY} together.

Level of Language--in addition to observing the type of miscue, the researcher must decide on which level of language the miscue is operating. Oral reading miscues can occur at any, or sometimes all, of the following levels: submorphemic, bound morphemic, word, phrase or clause. A researcher notes both the type of operation (substitution, insertion, omission, or reversal) and the level at which it took place. The following examples are all of substitutions.

	Text	Reader
Submorphemic:	What	that
Morphemic:	turned	turning
Word:	and	at
Phrase:	<u>He</u> wasn't bitter . . .	<u>His</u> wasn't bitter . . .
Clause:	. . . he didn't <u>seem</u> surprised . . .	. . . he didn't <u>see him</u> surprised . . .

Cueing Systems in Language--under this very general heading come the important questions about how the reader is manipulating the various

types of information available both in the text and from his language system. Basically the taxonomy asks how the reader deals with four types of information. First, intonational: miscues can either preserve or change the intonational pattern of the expected response.

TEXT: . . . and said, "I like him." Graham was now certain that . . .

READER: . . . and said, "I like him, Graham." Was now certain that . . .
Next, graphophonemic: miscues are examined and judged on their proximity to the written word (graphic) and the spoken word (phonemic).

	Text	Reader
	thinking	taking
GRAPHIC:	The text word and the observed response have common graphic beginnings and endings: medium similarity.	
PHONEMIC:	The text word and the observed response sound alike only at the end: low similarity.	

Third, syntactic: a miscue may or may not result in a grammatically acceptable sentence. When it does, a further question, to what extent the reader preserves the syntactic structure of the expected response, must then be answered by the researcher.

TEXT: He forced himself to be calm as he reached for the gift . . .

READER: He forced himself to be calm and he reached for the gift . . .
The sentence is grammatically acceptable with only a minor change in the syntax (a change from a dependent to an independent clause--as→and).

Finally, semantic: just as a miscue can be judged syntactically acceptable or unacceptable, so too can decisions be made on whether the miscue results in a semantically acceptable sentence. As with grammatical considerations the researcher must here decide the extent of deviation from the intended meaning of the text that results from the miscues which are wholly acceptable semantically. For example, the sentence cited above is entirely semantically acceptable and produced no major change in the intended meaning of the text sentence.

Correction Strategy--an answer to the question "what do the readers do once they have produced miscues?" provides further valuable insight into the way readers are processing the language of the text. Miscues can be corrected or uncorrected; readers may also make unsuccessful attempts at correction or may abandon correct responses and regress to produce miscues.

UNSUCCESSFUL ATTEMPT: "How much for those?" "Five-fifty."

ABANDONED RESPONSE: . . . as a boy of fifteen came in.

The actual analysis of oral reading miscues proceeds in four basic steps: isolation and marking of miscues; verification of markings; taxonomy categorization; and tabulation of miscue frequency for categories. As mentioned above, the Goodman study and the current investigation followed established procedures for the analysis; the following discussion details these procedures, noting when any changes were made in the studies.

Each audiotape is listened to and every deviation from the printed text is carefully marked on a worksheet which matches the original copy used by the reader during the taping. The coding system devised by Goodman and Burke (1972) is used to mark the worksheets. See Appendix D. A second listener repeats the marking process and a third listener is called in to resolve any disagreements between the first two listeners.³ When all marking questions are resolved, a final worksheet, representing the consensus of the listeners, is prepared.

Following the preparation of the final worksheet, the miscues of each reader are divided into two general groups: those which will be treated in the general taxonomy analysis (see below and Appendix E) and a second group which is eliminated from this analysis. This group--miscues not subjected to general taxonomy analysis--includes multiple attempt,

repeated, and dialect miscues. Multiple attempt miscues are those in which a reader makes more than one attempt at a single graphic item; for these miscues only the first attempt is coded and included in the taxonomy analysis. Repeated miscues, those in which a reader miscues on the same graphic item more than one time (any identical substitution of a noun, verb, adjective, or adverb), are coded only for the first appearance. In both cases, miscues are excluded from the general analysis in order not to inflate the data.

Dialect miscues are also separated from the regular miscue analysis for the same reason. These miscues included all deviations from the expected response which can be traced to the dialect of the speaker. In all decisions about which miscues represent the speakers' dialects, an effort is made to isolate phonological deviations from the expected response which can legitimately be attributed to dialect influence from those which more likely represent idiosyncratic pronunciations of the subjects, as often occur when readers 'sound out' unfamiliar words. The subjects of the Goodman study evidenced features of "Detroit Negro speech" (as described by Wolfram 1969); incidents of phonological variation from the expected response which conformed to this dialect were therefore not included in general taxonomy analysis.

For the current study, dialect miscues included all deviations from the expected response which could be traced to Spanish language interference. The type of phonological interference which might be expected in the speech of a native Spanish speaker is well-documented (see Stockwell and Bowen 1965); a member of the Department of Romance and Classical Language at Michigan State University verified the decisions about which miscues in the present study could be classified as systematically related

to Spanish. Since the Mexican adults in this study for the most part did not possess an entirely developed English phonological system, many of their pronunciation variations could be traced to phonemic interference from Spanish as in /dəbs/ for doves , /wi'pɪn/ for weapon and /fú'si/ for fussy . While not every reader evidenced identical phonological variation, there was regularity in the pattern of Spanish language interference miscues, both for any one reader and across the group. Any miscue which seemed to be an idiosyncratic pronunciation of a reader or an obvious attempt to 'sound out' an unfamiliar word, for example, /tey tər rɪd/ for teetered , was included in the general taxonomy analysis, coded as a non-word.

All miscues which remain after multiple attempt, repeated and dialect miscues have been eliminated from the inventory are then examined and evaluated for each of the sixteen categories of the Goodman Taxonomy. Included in this taxonomy analysis group are complex miscues involving more than one word, such as the substitution of "arm together" for "harm others" in the following sentence: ". . . some people might use these weapons to harm others." Miscues of this type are figured into the overall statistics as single miscues although the miscue in its entirety is considered in the coding decisions.

Appendix E contains the form of the Goodman Taxonomy of Reading Miscues typically used in the analysis. For the present study the grammatical function category was vastly simplified. The grammatical function coding usually involves a complex, three-part classification of each miscue. For all deviations from the print the researcher makes decisions, both for the expected responses and the miscues, about how to classify words according to category--the general type of word; filler--particular type within a

category; and function--the grammatical role filled.⁴ For example, in the sentence "The canary lived in space," the word "space" would be

classified as	category	--	noun
	filler	--	common noun
	function	--	noun in prepositional phrase (Allen 1976)

and assigned a three digit number to reflect these classifications.

Comparison of the reader's miscues with the expected responses with respect to this close classification (certainly calling for a computer analysis) allows a researcher to make judgments about the reader's sensitivity to the grammatical features of the text words. Although this line of inquiry holds promise for interesting results, for the purposes of the present investigation this type of minute analysis was considered overly-detailed since, in her study Goodman summarizes the grammatical function data very broadly. In order to facilitate comparison with this summarized data, the category was simplified to include only three options: grammatical function same, grammatical function different, and grammatical function indeterminate. The final category was included to account for those cases when no determination of the grammatical function of the miscue was possible, as with many non-word substitutions in the present study:

\$ longen
The boy laughed like a happy child of four.

The following example of the coding for one miscue illustrates the operation of the Taxonomy.⁵

	\$ ill-fritting
	His suit was cheap, ill-fitting, but obviously new.
Sub-morphemic Level	2 - insertion of a phoneme (r).
Bound Morpheme Level	00 - no change; the inflection has remained the same.
Word Level	17 - substitution of a non-word.

Phrase Level	0 - no change on this level.
Clause Level	0 - no change at this level.
Intonation	0 - no change.
Graphic	8 - single graphic difference.
Phonemic	8 - single consonant difference.
Grammatical Function	1 - unchanged; the inflection is preserved.
Transformation	0 - the reader has maintained the syntactic structure of the text.
Syntactic Acceptability	4 - in total passage. The non-word preserves the inflection of the text word.
Syntactic Change	9 - no syntactic change because of the retention of the inflection.
Semantic Word Relationships	--- blank; cannot be determined for non-words.
Semantic Acceptability	0 - the use of a non-word is always coded as not acceptable semantically since the researcher cannot determine if meaning has been lost.
Semantic Change	--- no coding; semantic change can be coded only for miscues which result in acceptable structures within the sentence or the entire passage (Semantic Acceptability 3 or 4).
Correction	0 - miscue not corrected.

As with the marking of the worksheet, the coding of all miscues is verified by at least one other researcher. Again, any problems with coding are discussed by three investigators and mutual consent is reached. For particularly problematic codings in the present study, Yetta Goodman was consulted in an effort to keep the two analyses as consistent as possible. The final step in a taxonomy analysis is the tabulation of the miscues within the various categories which then allows the reader

profiles to emerge. The coded information is normally subjected to a computer frequency count to provide tallies of the codings of each value within the sixteen taxonomy categories.

The focus of the body of this report is the comparison of first, the reading behavior of the different proficiency level readers and second, of the results of the analysis of the miscues of readers from the Goodman and the present studies. The first comparison is directed towards testing the hypothesis that there will be differences in reading groups that are attributable to proficiency levels. The second comparison tests the hypothesis that the same patterns of change in miscues for the young readers, as a function of increased proficiency, will be found in adults with proficiency levels ranging from low to high. Chapters 4-6 take up these comparisons; the next section looks briefly at two areas of investigation which, while not part of an actual taxonomy analysis, are typically included in all studies of oral miscues: miscue frequency and dialect miscues.

CHAPTER III

MISCUE FREQUENCY AND DIALECT MISCUES

A Reading Miscue Analysis is a qualitative measure of oral reading behavior. The questions the researcher asks of each miscue (see above, Chapter 2 for a general discussion of these questions) are designed to uncover the origin and significance of readers' deviations from a text. The central concern underlying these questions is the relationship of the readers' miscues to the intended meaning of the written material. Chapters 4-6 focus on the results of the Taxonomy Analysis. The developers of this instrument, while maintaining that this qualitative information concerning readers' oral reading miscues offers the most significant measure of reading proficiency, recognized that other areas of investigation, such as error frequency and the impact of dialect, might also yield important information about the reading process. Hence, a Taxonomy Analysis begins with a quantitative measure of miscues and a tabulation and analysis of the dialect-involved miscues of each reader. The present chapter takes up these preliminary areas of investigation; as with the chapters which summarize the data from the taxonomy analysis (4-6), it is organized as follows: -.0 Introduction; -.1 Present Study; -.2 Goodman Study; and -.3 Comparison of the two studies.

A. Miscue Frequency

3.0 Introduction

The notion that it is the quality, not the quantity, of reading errors (or miscues) which provides insight into the reader's understanding of a text and into the reading process is by no means universally accepted. Many reading programs and tests are built around a "frustration model"; the central idea of such a model is that if the reader produces a certain number of errors (the general rule of thumb says five) in an oral reading of the first hundred words of a text, then the material is too difficult (May 1973). Ostensibly, this is the student's "frustration level"--the level at which the difficulty of the text produces sufficient frustration to block understanding by the reader. In a testing situation, this information about "frustration level" is used to assign students to reading levels and texts. For example, the Slosson Diagnostic Test has the students read lists of vocabulary words in isolation;⁶ these word lists are graded for increasing difficulty and when readers produce errors on five words in any one list, they are assigned to the level of the list which immediately precedes it. The emphasis is clearly on quantification of errors, usually to the exclusion of concern for possible causes.

Kenneth Goodman (1973) and others suggests that while the frequency of oral reading errors might, in fact, be indicative of a certain level of reading proficiency, the simple cause/effect (errors cause problems in reading) relationship posited in a "frustration model" is misleading. Reviewing data which show that higher proficiency coincided with fewer miscues, he concludes,

This should not be taken as proof that accuracy is a prerequisite for efficient, effective reading. Among more proficient readers, it is likely that the tendency for lower quantities of miscues is the result of their efficiency in processing information in reading, rather than the cause of it. Readers who are efficient tend to produce fewer miscues (p. 32).

The frequency of errors, then, may provide information about the reading process although not in the way suggested in a "frustration model". The important thing to remember in any quantitative summary of reading behavior is that this information of itself says very little, if anything, about the ways a reader is treating language and meaning. As Goodman concludes, "how many miscues a . . . reader produces per hundred words or on a page is not in itself a significant measure of how frustrating a passage will be . . . or how much he will be able to comprehend from his reading" (1972:15). All miscue frequency data should therefore be viewed cautiously.

The quantitative measure employed in the Taxonomy Analysis is Miscues per Hundred Words (MPHW). This figure is calculated by taking the total number of miscues produced and dividing by the total number of words read then multiplying that number by 100.

$$\text{MPHW} = \frac{100M}{W}$$

All miscues isolated using the procedures outlined above (Chapter 2) are included in the total count of miscues except the following:

1. Miscues determined to be phonological dialect variations of the readers' normal dialect in speaking (see below for full discussion).
2. Misarticulations which clearly appear to be slips of the tongue.
3. Repeated, identical occurrences of the same miscue, including several non-word substitutions for the same text word.
4. Partial responses which the reader clearly does not finish (fi- for fifty).

5. All except the first attempt for any one text word. For example, in the following miscue

3. windblum
2. windelblum
1. windelblow

They rose like windblown balls of fluff.

only the first attempt, windelblow, is included in the total miscue count.

3.1 The Present Study

Table 1 summarizes the data on MPHw in the present study. As the average figures for the proficiency groups show, the overall trend in MPHw was for a decrease as a function of increased proficiency. From low to high these average figures show a steady decrease: for Story 1, 4.9--3.2--2.75 and for Story 2, an even sharper pattern, 9.0--5.0--4.0. This pattern follows those observed by other miscue researchers, notably Kenneth Goodman (1973). When the data are graphed for the individual readers, a less regular pattern of MPHw behavior emerges; see Figure 1. The proficiency level groups can very broadly be seen as the reading levels of a single reader at different times in a longitudinal study. The individual readers within the group might be viewed as any one reader at a particular session in the duration of a longitudinal investigation. Reader #14 (the lowest or least proficient reader in overall teacher ranking) would correspond to session 1 for a reader in the longitudinal study; #13 for the next session and so forth. An erratic pattern of MPHw change is evident when the readers of the present investigation are treated as one reader viewed longitudinally although the general trend of decreased MPHw as a function of increased proficiency remains. The assignment of ranking within the proficiency groups is perhaps more flexible than that of the groups themselves;

TABLE 1
MISCUES PER HUNDRED WORDS (MPHW)

	HIGH														MED				LOW			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14								
STORY #1	1.9	2.2	2.7	3.9	3.0	3.2	3.2	3.3	2.8	3.3	4.3	6.4	4.9	4.1								
AVERAGE			2.75					3.2						4.9								
STORY #2	3.7	2.9	3.7	4.3	5.6	4.0	5.8	4.7	5.3	5.0	---	10.5	---	7.5								
AVERAGE			4.0					5.0						9.0								

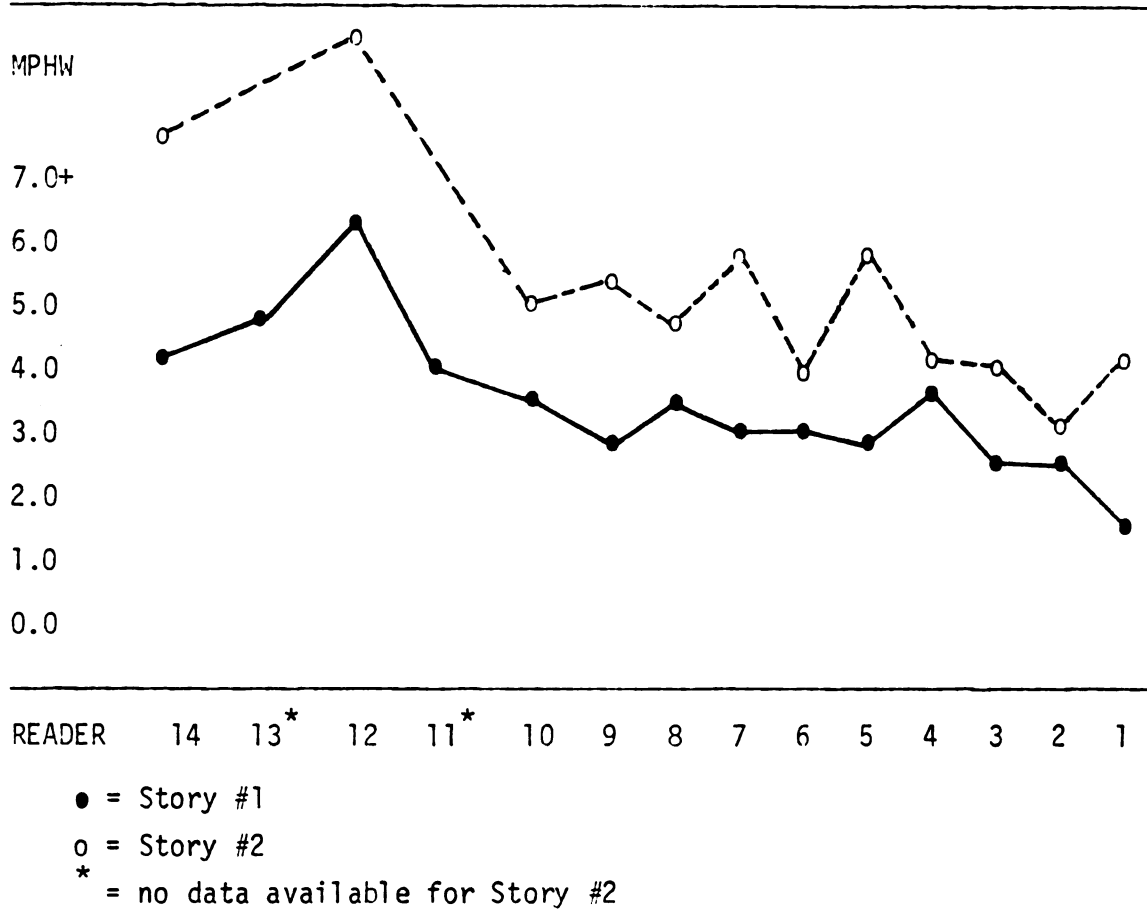


Figure 1. Miscues Per Hundred Words X Readers From Low to High Proficiency

nonetheless the data suggest that no simple straight line pattern of miscue frequency from high to low proficiency exists.

Figure 1 also shows that the readers of the present study uniformly produced more MPHW for Story #2, which was graded as the more difficult of the texts, suggesting that increased difficulty results in more frequent miscues. The use of only two stories in the study, however, makes generalizations about graded difficulty and miscue frequency inappropriate. Research using a wide range of graded material might offer further insight into this area of investigation.

While the data from MPHW for the three proficiency groups seems to point to a developmental pattern of declining miscue frequency, the figures for range of MPHW do not evidence any clear trend. Table 2 below shows that the range of MPHW dips from the low to the medium proficiency group (Story 1: 2.3--0.5; Story 2: 3.0--1.8) and rises from the medium to the high proficiency groups (Story 1: 0.5--2.0; Story 2: 1.8--2.7). When the low and high groups are compared, a slight decrease in range (0.3) for both stories results. The clear

TABLE 2
RANGE OF MPHW

	HIGH	MED	LOW
STORY #1	3.9 3.0 2.7 2.2 <u>1.9</u>	3.3 3.3 3.2 3.2 <u>2.8</u>	6.4 4.9 4.3 4.1
RANGE:	2.0	0.5	2.3
STORY #2	5.6 4.3 3.7 3.7 <u>2.9</u>	5.8 5.3 5.0 4.7 <u>4.0</u>	10.5* 7.5
RANGE:	2.7	1.8	3.0

* Data available only for two low group subjects.

lack of significant pattern is further complicated by the fact that data are missing for two low groups readers. In addition, Reader #12 of the low group accounts for the highest MPHW figures--6.4 for the first story

and 10.5 for the second; when Reader #12 is eliminated from the data for Story 1, the range of MPHw drops considerably for the low group to 0.8. The difference between the low and medium groups then becomes insignificant and the slight trend for wider range of MPHw with increased proficiency emerges. On the whole, however, the range of MPHw figures is very low for the group in the present study and no clear developmental pattern is evident.

A comparison between the ranges of MPHw in the two stories shows the groups consistently had a wider range for the second story, "Caged", which was graded as more difficult than the first, "The Weapon". The overall range, from the lowest to the highest reader, is also larger for the second story--(4.5 to 7.6)--suggesting perhaps that the difficulty of the text affects the range of MPHw. As with the earlier comparison of reading behavior on the two texts, this conclusion must be viewed as highly tentative until a wider range of data can be gathered.

To summarize: for the present study, the figures for MPHw show an overall decline with increased proficiency; a close examination of the individual readers suggests that the general trend holds while the data from reader to reader is more erratic. An increase in graded difficulty of a text appears to cause an increase in MPHw for readers at all levels. The range of MPHw for the readers of the present study does not seem to indicate a clear developmental pattern, although as with the simple MPHw figure, the range seems to increase as the material becomes more difficult. When the extreme low reader is eliminated from the general data, there is a slight increase in range of MPHw as proficiency increases.

3.2 The Goodman Study

Table 3 and Figure 2 summarize the data on MPHWS in the Goodman study. The data show no trend from session to session for the four young readers of this study although with only one exception (Frank, session #2) the average readers consistently produced fewer miscues than the slow readers. The fluctuation in MPHWS occurred despite the fact that for the slow readers the difficulty level of the reading material remained constant and for the average readers, the graded level varied. Goodman suggests that the slow readers tended to miscue more frequently from session to session, but no clear pattern is evident.

TABLE 3
MISCUES PER HUNDRED WORDS

	FAUST	TONY	ALTHA	FRANK
1	3.0	5.1	6.9	13.9
2	1.7	6.3	9.1	5.3
3	4.5	5.7	12.0	13.1
4	4.8	3.3	10.4	8.1
5	9.0	11.3	12.8	11.5
6	NA	1.1	15.5	15.2
7	6.1	5.2	NA	9.3
8	5.7	6.0	NA	20.2

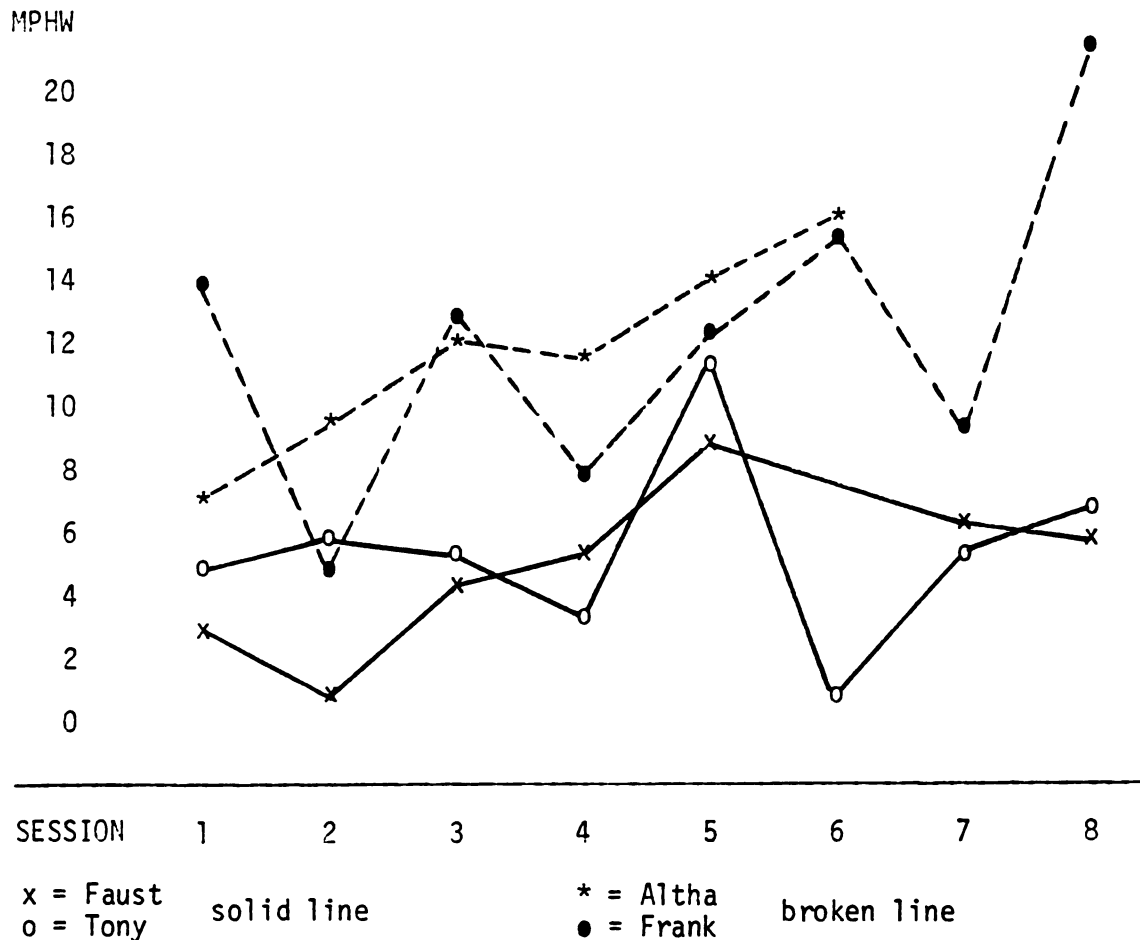


Figure 2. Miscues Per Hundred Words X Reading Session

The Goodman subjects demonstrate a wide range in miscue frequency, as seen in Table 4. Unlike the simple MPHW count, the range of MPHW is not lower for both of the average readers (7.3 and 10.2 for average readers compared to 9.5 and 14.9 for slow readers) although Goodman suggests that these figures are slightly misleading since in Session 5 the average readers were presented with a different type of reading text than was normally used in the taping. If the data for session 5 are removed from the average readers' totals, the range of MPHW drops

TABLE 4
RANGE OF MISCUES PER HUNDRED WORDS

	FAUST	TONY	ALTHA	FRANK
	9.0	11.3	15.4	20.2
	6.1	6.3	12.8	15.2
	5.7	6.0	12.0	13.9
	4.8	5.7	10.4	13.1
	4.5	5.2	9.1	11.5
	3.0	5.1	6.9	9.3
	1.7	3.3	NA	8.1
	NA	1.1	NA	5.3
RANGE:	7.3	10.2	9.5	14.9

to 6.3 and 4.4, making it lower than that of the slow readers in the study. This lower range of MPHWH for the average readers is consistent with data from an earlier study using the same subjects. The earlier data also suggest a tendency for all readers to have a wider range of MPHWH as a function of increased proficiency; this variation in range did not correspond to graded level of reading material since, as mentioned above, there was no pattern of increased difficulty of texts from session to session.

A summary of the Goodman study data on miscue frequency shows no developmental pattern of decreased MPHWH as a function of increased reading proficiency over time. However, the average readers consistently produced fewer MPHWH than the slow readers. The graded difficulty of the text appears to have no effect on the pattern of MPHWH. Figures on MPHWH range are somewhat problematic; the readers demonstrate a wide range of MPHWH at both the slow and average levels. For both groups of readers,

the range appears to increase as a function of increasing proficiency.

3.3 Comparison of the Studies

There are a number of general similarities in the MPHw behavior of the readers in the present study and those in the Goodman study. Perhaps the single most obvious of these is that both groups of readers produced miscues in their oral reading. Although within each group there are certain trends which appear to accompany increased reading proficiency, in both cases no clear picture of developmental performance, with respect to miscue frequency, emerges. In each of the studies, readers with higher proficiency produced fewer miscues, but individual reading performance from reader to reader within the present study (see Figure 1) and from session to session for the Goodman readers (see Figure 2) suggests a more erratic pattern. In particular, the Goodman data show no decrease in MPHw as a function of increased reading proficiency over time; the present data indicate fluctuations from reader to reader. Although no clear pattern of developmental change emerges from the figures on range of MPHw, the results of the Goodman study seem to indicate an increase in range as a function of increased proficiency. The data from the present study are much less conclusive, perhaps owing to limited sampling.

There are two clear differences in the MPHw frequencies of the two groups of readers. First, the overall frequency of miscues is considerably lower for the subjects of the present study. A number of factors might account for this observation: the greater maturity of the adult readers of the present study, type of reading instruction, the effects of foreign language instruction. A second difference between the two

groups is the apparent effect of the difficulty of the reading material on miscue behavior. For the Goodman readers, there is no discernible relationship between the graded difficulty of the readings and the frequency or range of frequency of miscues although there is the suggestion that the type of reading material may have an effect on MPHw, as with Session #5 for the average readers. The readers of the present study, on the other hand, show increases in both MPHw and range of MPHw for the more difficult (as determined by grade level) of the two stories. The limited number of stories and subjects, however, would dictate a cautious interpretation of these results.

B. Dialect Miscues

3.0 Introduction

Recent research in reading, particularly miscue analysis, has gone a long way in discounting previously held notions about the detrimental effects of dialects, specifically nonstandard varieties, upon reading performance. Studies of readers with nonstandard dialects such as Black English, rural Southern English and Spanish-English suggest that while there can be little question that the use of a nonstandard dialect in oral reading can affect an evaluator's estimation of a reader's proficiency, often quite profoundly, the real problem does not lie with the dialect. In "Dialect Barriers to Reading Comprehension Revisited" (1973), Kenneth Goodman and C. Buck conclude, "the only special disadvantage which speakers of low-status dialects suffer in learning to read is one imposed by teachers and schools . . . the disadvantage of the divergent speaker Black or White, comes from linguistic discrimination" (p. 410). Miscue theory recognizes the need to go beyond a superficial

evaluation of dialect impact on reading and to assess instead any genuine effect that dialect may have on reading acquisition and proficiency.

In these efforts to make valid judgments about the effects of dialect on reading, miscue theory begins with a central (and well-documented; see Labov 1972; Shuy 1967; Wolfram and Fasold 1974; Bailey and Robinson 1973; and others) assumption about varieties of language: all dialects are rule-governed. If the oral reading miscues assigned to dialect can be attributed to a rule-governed system on the part of the speaker, even if that system differs from the one commonly identified as standard, then decisions about the acceptability of the miscue are made with respect to the reader's dialect. As Jenson points out, "The closer readers can come to their own spoken language in their reading the more likely they are to derive meaning from what they read" (Allen 1976:29).

In marking dialect miscues, a researcher keeps in mind that readers' dialects are rule-bound in at least three important ways: phonologically, grammatically and lexically. For each observed miscue, a determination is made about the relationship of the miscue to the dialect system of the reader. Miscues which can be identified as phonological variations in the readers' dialect are not treated in the general inventory analysis (see above, Chapter 2 for discussion) since it has been determined that they are non-critical to reading for meaning (Jenson, in Allen 1976:29). The other types of dialect miscues--those involving grammatical and lexical items--are included in both the regular taxonomy analysis and in a separate dialect analysis along with

the phonological miscues; decisions about their syntactic and semantic acceptability are made with reference to the readers' normal spoken dialect. Other miscues which appear in some way related to the dialect of the reader, such as stress patterns or "super correct" forms, are also included in this analysis.

The following types of miscues are included in the analysis of dialect involved miscues.

1. All miscues which are determined to be systematically related to the phonological system of the reader. These miscues are excluded from the general taxonomy analysis.
2. All miscues involving grammatical variations of the expected response which can be traced to grammatical features of the reader's dialect.
3. All miscues which involve the use or substitution of a lexical item from the reader's dialect for a text item.
4. All miscues in which stress patterns from the reader's dialect are used on text items, such as sofa in the present study. These miscues are not included in the general taxonomy analysis.

Also studied in conjunction with dialect phenomena are miscues which appear to be "super correct" forms, such as /eywey/ for away (Goodman 1971:26), in which readers overarticulate perhaps in an effort to follow language instruction.

3.1 The Present Study

In the present study only phonological and, to a lesser extent, stress-pattern dialect miscues appeared. There were no examples of lexical influence from Spanish in the data and only one miscue, which appeared in the reading of three subjects, could reasonably be considered grammatically influenced by Spanish.

. . . which told him that at a fifty-cent^S_A reduction he could . . .
A Spanish equivalent of the phrase might read "reduction of fifty-cents,"

but even with this miscue it is not entirely clear that there is dialect influence.

The phonological dialect miscues isolated in the present study were those which could legitimately be traced to Spanish language phonemic features. These miscues could be said to represent a Spanish 'accent' and they appear to be regularly related to phonological and stress pattern features of Spanish. Although the use of these dialect features was by no means consistent (they might, perhaps, be part of the "interlanguage" system of the subjects [see Selinker 1972])--a number of readers, for example, produced both /dɒbs/ and /dɔvs/ for doves in the same reading--the frequency of their appearance for any one reader and for the readers in general as well as their verified relationship to Spanish make it clear that these features are a part of the rule-governed system of language. The phonological influence of Spanish can be seen in the miscues of the present study in the pronunciation of both vowels and consonants⁷ as in the following examples taken from readers at all proficiency levels.

Vowels--		/swit/	sweat
[ɛ]		/stɪdi/	steady
[ai]	[i]	/tɪdi/	tidy
[ə]		/əliv/	alive
		/hɛsɪtɪtli/	hesitantly
		/ɪfɛt/	effect
[ɪ]	[ai]	/fɛvɪrait/	favorite
		/slaid/	slid
[i]	[ai]	/laiv/	leave
		/rɪlaɪvd/	relieved
[ʊ]	[u]	/lʊkt/	looked
		/kʊdnt/	couldn't
[ə]	[u]	/rʊʃɪŋ/	rushing
		/flʊf/	fluff

[e] — [a]	/wástlɪ/ /lái.ɾr/	wasting labor
[æ] — [e]	/pélɪr/ /ret/	pallor rat
[#_s] — [#ɛs]	/ɛstap /ɛsmil/	stop smile
[ø] — [ə]	/əpartamInt/ /dipartamInt/	apartment department

consonants--

[v] — [b]	/dabs/ /begli/	doves vaguely
[dʒ] — [h]	/hɛntli/ /hæstar/	gently gesture
[j] — [dʒ]	/dʒɪrs/ /dʒɛs/	years yes

In addition to these phonological dialect variations, the data from the present study show a number of examples of stress patterns of Spanish used on text words; these words are cognates from English to which the readers apply the familiar Spanish stress patterns. Examples include sofá; effective; canaries and unreasonably. Often there was a combination of both stress and phonological influence from Spanish in the miscues as in /me-lón/ for melon. Occasionally final consonants ([d], [n], [s]) and syllables ([ɪd]) were reduced, but close listening usually revealed at least a trace of the sounds.

Table 5 and Figure 3 summarize the dialect miscue data from the current investigation. No pattern of change accompanies increased proficiency nor does any clear picture emerge from a study of variation from reader to reader. Table 5 illustrates this inconclusive pattern from low to high proficiency: 3.0--3.0--2.2 for Story #1 and 4.5--3.5--3.9 for Story #2. A treatment of the readers as one individual reader

TABLE 5
DIALECT VARIATION MISQUES PER HUNDRED WORDS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	HIGH			MED			LOW							
STORY #1	2.4	2.3	2.0	1.7	2.8	3.8	2.7	2.1	2.7	3.5	2.8	3.5	2.5	3.2
AVERAGE	2.2			3.0			3.0							
STORY #2	3.6	3.0	4.8	2.4	5.6	4.7	3.3	2.9	3.5	2.9	---	5.1	---	4.0
AVERAGE	3.9			3.5			4.5							

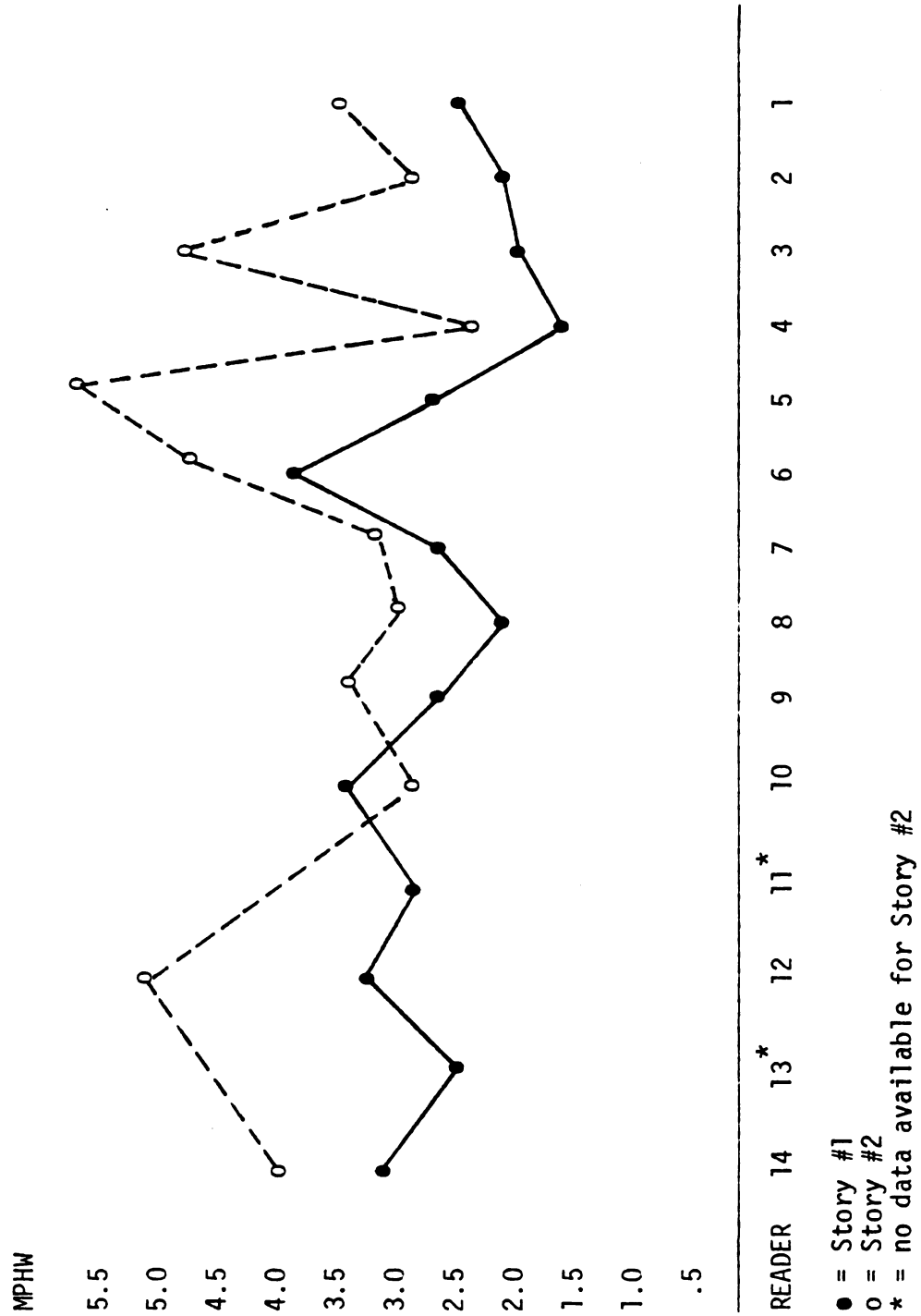


Figure 3. Dialect MPH X Readers From Low To High Proficiency

viewed longitudinally demonstrates even more dramatically the erratic pattern of dialect miscues; see Figure 3. Comparison of these results with Comprehending Scores (which had a 90% correlation with teacher evaluation) and informal Retelling evaluation (which also reinforced the original proficiency level grouping) suggests that no developmental pattern of dialect involvement exists. For these readers, the use of Spanish dialect features did not seem to affect reading comprehension nor did it appear to be indicative of any level of reading proficiency. This is not surprising since phonological features represent what might be called "superficial" aspects of language; they are surface forms. Labov (1972) has demonstrated that the inability to reproduce specific forms or particular pronunciations is not indicative of a lack of understanding of the meaning which those forms represent. No simple relationship exists, it seems, between oral reproduction of surface forms (as in oral reading) and understanding of the underlying meaning represented in the forms. And since the concern for meaning, rather than simply form, is what marks increasing reading proficiency, the lack of a relationship between use of Spanish dialect features and either comprehension or proficiency level for the readers of the current study is understandable.

With the exception of Reader #10, all subjects produced more dialect-involved miscues for the more difficult of the two texts, "Caged". This limited sampling might indicate that the readers rely more heavily on their dialect as the material becomes more difficult. For both stories there was very little correction of dialect miscues, an observation which supports the idea that the readers considered their oral production correct.

In addition to their dialect miscues the readers in the current investigation produced a group of "super correct" miscues which might be traced to language instruction. The term "super correct" is perhaps inaccurate since the miscues of this group were only of one type-- overarticulation of the final ed as in /tɪrniɪd/ for turned; /mætiəliɪzɪd/ for materialized; /staptɪd/ for stopped; and /wɒtʃɪd/ for watched. The use of these "super correct" forms did not relate to proficiency level nor did any pattern of change in this type of miscue result from increased proficiency. Again it could be argued that study of the superficial aspects of language, for example, the pronunciation of the readers, can be expected to provide little information about comprehension or reading level; see above discussion.

An overview of the dialect-involved miscues of the readers of the present study shows that they produced only phonological and stress pattern miscues which could be systematically related to their dialect; no examples of lexical influence and only one possible instance of grammatical influence occurred. A comparison of the readers' dialect miscues with measures of reading proficiency (teacher evaluation, as reflected in the proficiency grouping; comprehending score; informal retelling) reveals no developmental pattern for these miscues. Specifically the use of dialect features did not change with increased reading proficiency. There is some evidence that the difficulty of the material influenced use of dialect features in oral reading; all but one reader relied more heavily on these features with the more difficult of the two readings, suggesting that these readers prefer to produce language that sounds familiar (contains features from their dialect)

when faced with a possible meaning loss, that is, when material is more difficult. In the readings of both stories, there was very little correction of dialect-involved miscues which indicates that the readers considered these miscues acceptable--they sounded like 'real' language. Finally the data show that the readers sometimes overarticulated word endings, perhaps in an effort to conform to language instruction.

3.2 The Goodman Study

The young readers of the Goodman study produced miscues which conformed to "Detroit Negro Speech" as described by Wolfram (1969). These dialect-involved miscues included examples of both phonological and grammatical variation; Goodman reports no examples of stress pattern or lexical substitution miscues which could be traced to the readers' dialect. Some examples of phonological variation include:

1. Word final clusters variations that do not change tense or number; /tɛs/ for test.
2. Initial and medial and final variations; /bɪrɪfdeɪ/ for birthday.
3. Syllable final d or medial d variations excluding related bound morpheme variations; /ɡɔwɪ/ or /ɡɔwɪt/ for gold.
4. Post-vocalic r and l variations which generally result in the absence of /r/ and /l/; /hʌntə/ for hunter and /kɔwd/ for called.
5. Medial vowel variations which often result in an absence of distinction between certain vowels; /ɡɪt/ for get, /stɪəl/ for still, /jɪst/ or /jɛst/ for just.

See Goodman (p.p. 17-18) for fuller description of phonological variations found in the data. Five grammatical variations found in the subjects' miscues were traced to the influence of "Detroit Negro Speech."⁸

1. Word final clusters and syllable final d variation when a bound morpheme is involved; /dɛpɛnd/ for depended.
2. Suffixal-z variations like /mʌðər/ for mother's (possessive); /hæt/ for hats (plural); and /rən/ for runs (third person singular present tense).

3. Possessive they for their.
4. Variations in terms of be form verbs; was for were and be for been.
5. Multiple negation. (p. 20)

Phonological and grammatical dialect miscue data are summarized in Table 6. The table shows that phonological variation was inconsistent from subject to subject and for reader from session to session; no pattern of development could be found. In fact when subjects read the same story twice (Faust for sessions 3 and 7; Frank for sessions 1 and 2; 5 and 7) they did not show consistency in phonological miscue behavior. The specific type of phonological variation did not correspond to reading level. One average reader and one slow reader demonstrated larger variety in the phonological variation than the other two readers, again one average and one slow, leading Goodman to conclude that the use of phonological dialect features in oral reading, "does not seem to be a factor in reading success or failure" (p. 20).

Study of the grammatical dialect variation miscues of the young readers yields equally inconsistent patterns with respect to increased proficiency, both between the average and slow readers and for all readers as proficiency increased over time. There was no developmental pattern from subject-to-subject or for individuals across the sessions. Variations in both phonological and grammatical dialect miscues seemed unrelated to the graded difficulty of the reading texts.

Goodman notes that the dialect-involved miscues, both phonological and grammatical, were for the most part (96--70--100--90%) uncorrected, indicating that the subjects considered the sentences they produced to be acceptable. The dialect miscues which were corrected were usually

TABLE 6
 PHONOLOGICAL AND GRAMMATICAL VARIATION MISCUES PER
 HUNDRED WORDS

	FAUST		TONY		ALTHA		FRANK	
	ph	gr	ph	gr	ph	gr	ph	gr
1	.9	.4	.2	.8	0	0	0	.4
2	.9	.1	.7	.7	0	0	1.4	.4
3	.6	.1	.2	.4	0	.7	1.0	2.4
4	1.3	.7	.9	.6	0	0	2.0	0
5	2.4	.7	.3	1.7	1.5	1.7	3.8	1.0
6	NA	NA	.1	.1	0	1.2	1.5	.5
7	1.7	.8	.1	.5	NA	NA	.4	.6
8	1.3	.5	.1	.3	NA	NA	3.1	2.8
TOTAL	1.2	.5	.3	.5	.4	.8	1.9	1.2

ph = phonological
 gr = grammatical

those which resulted in unacceptable structures. A final observation arising from the data concerns "super correct" miscues. Goodman finds a pattern of such miscues: /eywey/ for away; /sIt+tiy/ for city; /stapt&d/ for stopped; and /statiyIn/ for studying. The slow readers had more of these "super correct" forms, suggesting that they were making efforts to follow teacher instruction, perhaps to the point where it began to interfere with reading proficiency.

To summarize the miscue involving dialect variations: the young readers of the Goodman study showed evidence of both phonological and

grammatical dialect variation related to "Detroit Negro Speech" as described by Wolfram. No clear developmental pattern of dialect variation miscue behavior emerges from the data, neither for the phonological variations nor for the grammatical. Proficiency level increases do not correspond to decreased use of these dialect features; graded level of the texts also did not appear to have an effect on this type of miscue performance. The Goodman readers did not for the most part correct dialect-involved miscues, although they did, to some extent, exhibit the tendency to "super correct" certain features of their oral reading.

3.3 Comparison of the Studies

As a result of her analysis of the reading behavior of her four young readers Goodman concludes that "there is no evidence that the use of dialect in oral reading interferes in learning to read" (p. 28). The data from the present study suggest the same general conclusion. Despite the fact that the foreign readers produced dialect-involved miscues more frequently than their native counterparts, there is no evidence that the use of dialect features in their oral reading had any detrimental effect on their ability to comprehend what they read. For both groups of readers, the patterns of dialect involvement are erratic; no picture of change related to increased proficiency emerges. As with the MPHW discussed above, the foreign readers seemed more sensitive to changes in graded difficulty of text, producing more frequent dialect miscues with increased difficulty in the readings, but again, the limited size of the sample discourages generalizations from these results. Goodman's final suggestion, that evidence of dialect in oral reading

might, in fact, be a strength since it indicates the readers are aware that what they read should sound like language, appears to hold for the readers of the present study.

At the heart of a taxonomy analysis are three important questions about the way a reader treats language and meaning. The researcher asks: 1. What is the level of language of the miscue and what type of operation is involved at that level? 2. What cueing systems are involved in the miscue? 3. What happens after a miscue has been produced? The next three chapters focus on the answers to these questions and subsequent comparison between the Goodman study and the present investigation. These sections bring into focus the questions of developmental trends in second language acquisition and similarities between foreign and native reading acquisition.

CHAPTER IV

LEVEL OF LANGUAGE AND MISCUSE TYPE

4.0 Introduction

In a taxonomy analysis the four types of operations (substitution, insertion, omission and reversal; see above, chapter 2 for discussion) can be judged to occur at any, or in many cases at all, of the following structural levels: submorphemic, bound morpheme, word or free morpheme, phrase, or clause. The development of this five category system for examining miscues resulted from the observation that a single miscue usually involves more than one structural level. As Rudine Sims points out, "The syntactic constituents of our language are interrelated in such a way that a change within one constituent may also cause change in another" (in Allen 1976:46). For example, in the following miscue⁹

He made a quick calculation . . .
the reader has omitted a word; substituted one phrase for another (a quick calculation substituted by a calculation); and finally, omitted a constituent on the clause level where the deep structure adjectival clause is lost. Miscues typically reveal this multi-level structural effect.

^{GAY}
A gray pallor deadened his pinched features.
The omission on the submorphemic level (loss of the [r]) is also a word level substitution (gay for gray) and a substitution of one phrase, a gay pallor, for another, a gray pallor. The use of this five category system, which takes into account the interrelation of the structural levels of language, allows the researcher to treat the miscues locally while

simultaneously recognizing the complex interplay of the various levels in a subjects' reading. The information this analysis yields can provide valuable insight into the way readers are processing language when they read.

The following is a summary of miscue levels and the type of operation at those levels.¹⁰

Submorphemic: At this level, sound differences between the observed response and the text word are recorded; differences are limited to one and two phoneme sequences and exclude word level omissions (in, it, etc.).

	TEXT	READER
SUBSTITUTION:	list /lɪst/	last /læst/
	futile /fuɪl/	\$fuchile /fuɔ̃ɪl/
INSERTION:	brow /brau/	brown /braun/
	fanatic /fanætɪk/	\$fantatic /fantætɪk/
OMISSION:	gray /gre/	gay /ge/
	blurted /blætɪd/	\$burted /bærtɪd/
REVERSAL:	felt /fælt/	left /læft/
	emphatical /ɪmfætɪkəl/	\$emphacital /ɪmfæɪtɪl/

Bound Morpheme: A two-part coding is involved in the analysis of the morphology of the miscues. The first part deals with the process involved in the miscue (substitution, insertion, etc.) and the second makes a determination of the type of morpheme involved; the major coding categories

are: inflectional, contractional, derivational and noninflectional. Both parts of the coding must be completed when there is a change at the morphemic level. The following examples illustrate operations for the various types of morphemic involvement; with the exception of the non-inflected forms (for which there are only substitutions) these operations can occur with each of the morpheme types.

	TEXT	READER
SUBSTITUTION		
inflectional	promised	promises
contractional	I'll	I'm
derivational	scientist	scientific
noninflectional	came	come
INSERTION		
inflectional	boy	boy's
contractional	he	he's
derivational	distinct	distinctive
OMISSION		
inflectional	drinks	drink
contractional	it's	it
derivational	daddy	dad
REVERSAL		
inflectional	trouser pockets	trousers pocket
contractional	needn't have	needed hadn't
		(Allen 1976:195)

Word or Free Morpheme: In all taxonomy research reviewed (see bibliography), by far the most frequent type of miscue was the word-for-word miscue. This type of miscue may, of course, involve any or all of the structural levels of the taxonomy analysis, but must, no matter which other levels are affected, be coded as a word or free morpheme. When examining word-for-word miscues, the researcher first determines the type of operation (substitution, insertion, etc.) and then codes that information along with the appropriate category of word or free morpheme. The following examples summarize the possibilities for coding at the word level.

SUBSTITUTION

Multiple Morpheme Word
for same--

He hesitantly ^{PRODUCING} produced a five
dollar bill.

Single Morpheme Word
for same--

. . . turning the pages of ^{THE} his
book.

Multiple Morpheme Word
for Single--

They ^{GIVES} give you five dollars.

Single Morpheme Word
for Multiple--

^{DRIVE} Drives you crazy, doesn't it?

Word in Longer Word--

He waddled to the window and
^{STARTED} stared out.

Word in a Compound Word--

The boy skipped back to his
^{BOARDROOM} bedroom.

Non-word for Word--

"What can I do for you?" he
^{\$BLEAMED} beamed.

INSERTION

Multiple Morpheme Word--

I suspect that the ^{GENERATION} gap between . . .
(Allen 1976)

Single Morpheme Word--

Purcell sighed with ^A sudden relief.

Word Within Longer Word--

I'll ^{BE(COME)} come soon.

Word Within a Compound Word--

"You mean--^{(SOME)THING} some kind of pet?"

OMISSION

Multiple Morpheme Word--

"But this is all I got. Just
five dollars."

Single Morpheme Word--

Purcell was a small fussy man.

Word Within Longer Word--

He was becoming quiet. (Allen 1976)

Word Within a Compound--

. . . towards the door to the
bedroom.

REVERSAL

Words Within a Sentence
reversed--

I can do it → Can I do it?
(Allen 1976)

Phrase: Looking beyond the word level, the Goodman Taxonomy attempts to assess the effect of miscues on larger language units such as phrase and clause. Miscues are coded in one of the following five ways for the phrase category.

0. No change--the miscue has no effect on this level of language.
1. Substitution--there is a change in the phrase structure of the text sentence or one phrase is substituted for another.

I am not responsible for the actions of ^{THE} other people.
The noun phrase other people is substituted by another noun phrase, the people.

2. Insertion--there is an insertion of a phrase not present in the original text.

When he returned, ^{THERE} ~~Niemand~~ was leaving Harry's bedroom.
With the insertion of there into the sentence, an adverbial phrase is added to the verb phrase.

3. Omission--a phrase in the expected response is missing in the observed response.

Graham said, "Harry, this is Mr. Niemand."
The deletion of the verb is causes a loss of the verb phrase of the sentence.

4. Reversal--movement of a phrase within the expected response.

"Poor little fawn!" said Billy. (Jenson 1972)
The noun phrase and the verb phrase are reversed.

Clause: The final level at which a researcher analyzes miscues in the Taxonomy is the clause level. In deciding how a miscue effects the clause structure of the sentence, the investigator chooses from the following six subcategories.¹¹

0. No change--the miscue is not on the clause level.
1. Substitution--there is a substitution of one clause for another.

He was holding the cage shoulder high, staring ^{AND} at his purchase.

2. Insertion--a deep structure clause is inserted.

Graham said with affection "Daddy's ^{BOYS} busy now . . ."

3. Omission--the miscue causes a deletion of a deep structure clause.

Purcell was a small fussy man.

4. Clause Dependency Altered Within Sentence--the miscue alters the dependency within a single text sentence.

I gave it to him before when I went into his bedroom.

By omitting the word when the reader has altered the dependency of the clause and changed the time for the whole sentence.

5. Clause Dependency Altered Between Sentences--the miscue changes the dependency relationship between two text sentences.

The merchant's brow puckered with perplexity. Now. "why," Mr. Purcell muttered, "did he do that?"

4.1 The Present Study

For the readers in the present study, no discernable pattern of reading behavior is evident for the submorphemic and morphemic structural levels, suggesting that at these levels readers are fairly idiosyncratic in their manipulation of the text material. Table 7 illustrates this erratic pattern of miscue behavior at the bound morpheme level for the three proficiency groups under study.

The word level data from the current investigation prove to be as inconclusive as those from the submorphemic and morphemic levels. No pattern of developmental change over the proficiency groups can be found as Table 8 demonstrates. Despite the lack of developmental pattern, the results of the word level analysis of miscues provide interesting information about the frequency of the types of operations for the readers. For all readers, the relative frequency of the operations is very similar. The largest percentage of miscues at the word level involves

TABLE 7
 TYPE OF MISCUE AT THE BOUND MORPHEME
 LEVEL IN PERCENTAGES

	HIGH	MED	LOW
SUBSTITUTION			
inflectional suffix	8.7	7.4	4.9
noninflected	2.9	2.3	2.9
contractional suffix	.5	---	---
derivational suffix	2.4	1.1	2.5
prefix	---	.4	---
across affix types	---	---	1.6
involving base word	---	.8	---
INSERTION			
inflectional suffix	2.4	1.6	4.1
contractional suffix	2.4	.4	.8
derivational suffix	---	.8	.4
OMISSION			
inflectional suffix	1.4	4.1	2.5
contractional suffix	1.0	1.5	.8
derivational suffix	2.0	2.5	.8
prefix	.5	---	---
REVERSAL			
inflectional suffix	.5	---	---
NOT AT BOUND MORPHEME LEVEL	76.1	77.4	78.6

TABLE 8
TYPE OF MISCUE AT WORD OR FREE MORPHEME
LEVEL IN PERCENTAGES

	HIGH	MED	LOW
SUBSTITUTION			
multiple for multiple	9.0	4.9	7.8
single for single	28.2	33.0	29.2
multiple for single	7.2	4.9	4.9
single for multiple	9.6	7.9	8.2
word in longer word	1.0	2.6	.8
word in compound	2.0	.8	.4
non-word for word	<u>18.5</u>	<u>24.1</u>	<u>22.2</u>
	(75.5)	(78.2)	(73.5)
INSERTION			
multiple morpheme word	---	---	---
single morpheme word	1.0	2.3	3.3
word within longer word	.5	---	---
word within compound	<u>1.5</u>	<u>---</u>	<u>---</u>
	(3.0)	(2.3)	(3.3)
OMISSION			
multiple morpheme word	1.0	.8	---
single morpheme word	9.3	9.8	10.7
word within longer word	---	---	---
word in compound	<u>.5</u>	<u>---</u>	<u>.8</u>
	(10.8)	(10.6)	(11.5)
REVERSAL			
	---	---	---
NOT AT WORD LEVEL	11.6	9.0	11.5

substitutions, followed in order by omissions, and insertions. There were no word level reversals, suggesting that this type of miscue, often thought to be a major reading problem, in fact occurs so infrequently as to have negligible effect on the process of reading. Figure 4 illustrates the percentages of miscue operations for the three groups of foreign readers. The extremely high percentage of substitutions (75.5--High; 78.2--Med; and 73.5--Low) combined with the observation that most miscues are word-for-word means that the vast majority of miscues of the readers of the present study are coded as word level substitutions.

At least 29.2% of the total number of miscues for the current subjects result in some type of phrase level change (low to high: 29.2--30.1--31.2%); there is a slight trend towards increased structural change on this level as proficiency increases, suggesting that the readers with higher proficiency are more likely to process larger pieces of information. The most frequent type of operation (for all readers) is substitution, as it is at the submorphemic, morphemic and word levels; the high group inserted and omitted phrases with equal (although low) regularity and the medium and low groups inserted more often than they deleted on the phrase level. Table 9 summarizes the data for phrase level miscues for all proficiency groups.

The same slight increase in frequency of structural change is evident in the clause level miscues in the present study. From low to high proficiency the clause level structural changes are 12.3--14.7--15.6%. While these figures are lower than those of the phrase level, they suggest the same general pattern of development: with increased

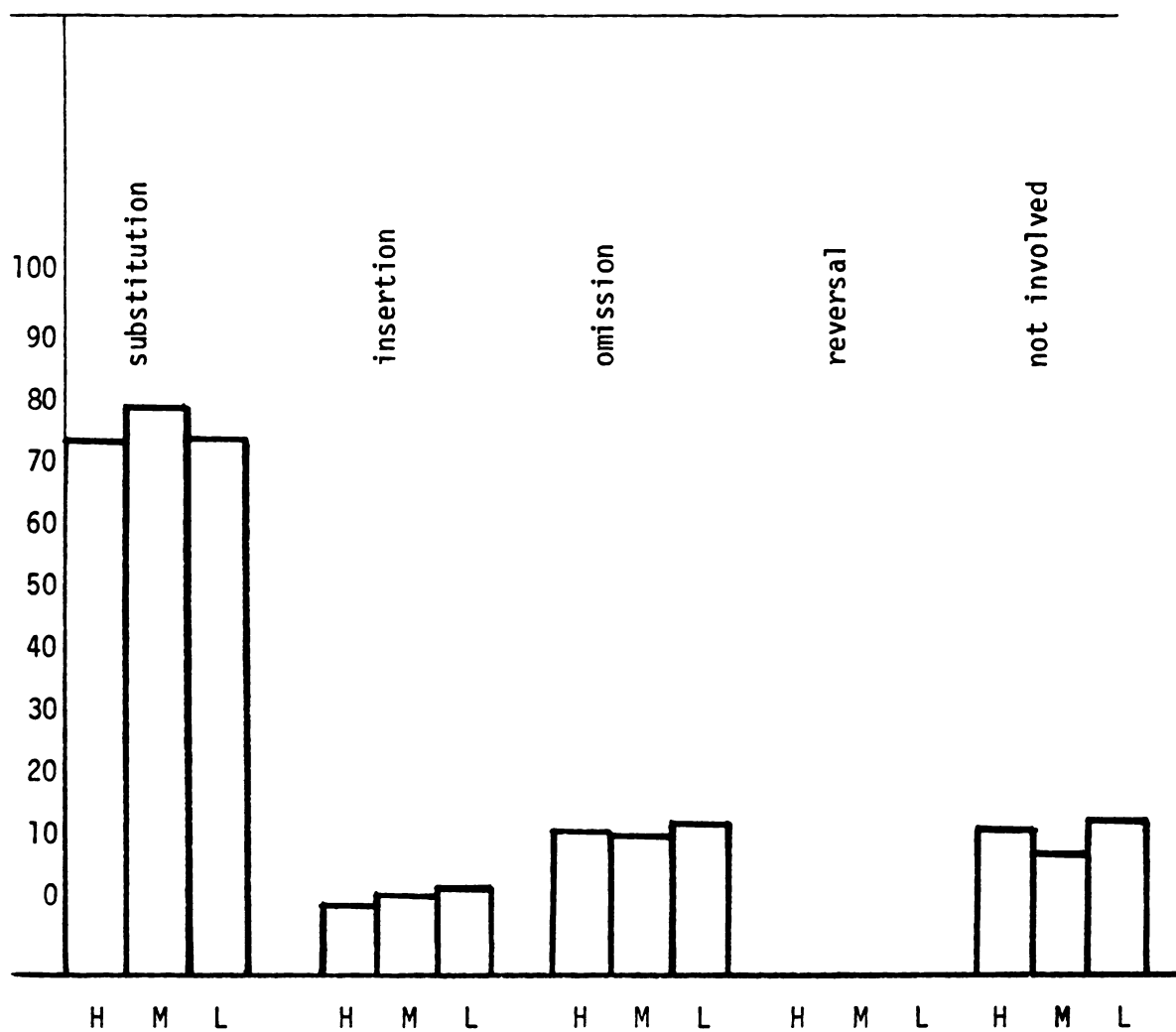


Figure 4. Percentage of Miscue Types at the Word Level.

proficiency, the tendency is to process increasingly larger units of language. See Table 10.

TABLE 9
PERCENT OF TYPES OF MISCUES AT THE PHRASE LEVEL

	HIGH	MED	LOW
SUBSTITUTION	27.3	23.7	22.2
INSERTION	2.0	4.5	4.5
OMISSION	2.0	1.9	2.5
REVERSAL	---	---	---
NOT AT PHRASE LEVEL	68.8	69.9	70.8

TABLE 10
PERCENT OF TYPES OF MISCUES AT THE CLAUSE LEVEL

	HIGH	MED	LOW
SUBSTITUTION	5.4	6.0	4.8
INSERTION	3.8	4.0	3.6
OMISSION	2.0	2.6	1.0
DEPENDENCY WITHIN SENTENCES	2.5	1.4	1.5
DEPENDENCY ACROSS SENTENCES	2.0	.8	1.2
NOT AT CLAUSE LEVEL	84.4	85.3	87.7

This slight trend can perhaps best be seen in the subcategories which involve manipulation of the dependency within and across sentences. Although the figures dip for the medium group, there is a difference between the high and low groups that suggests that the high group was more apt to produce dependency-altering miscues like those in the examples above under sub-categories 4 and 5.

Very little developmental data emerge from a study of the miscue types and level in the present study. At the submorphemic, morphemic and word level, the most significant finding is the lack of any real change that could be attributed to increased proficiency. While the data reveal that substitutions occur most frequently at each of these levels (and at the phrase and clause levels), again no pattern of developmental change emerges from the data on type of operation involved in the miscue. At the phrase and clause levels there is a slight tendency for the readers to process increasingly larger units of language as proficiency increases.

4.2 The Goodman Study

All readers in the Goodman study produced miscues at both the sub-morphemic and the morphemic levels, but, as Goodman notes, there is no discernable pattern either from session to session or from reader to reader. In particular, involvement at these levels does not appear to be related to changes in reading proficiency. The data strongly suggest idiosyncratic reading behavior at the submorphemic and morphemic structural levels.

Although Goodman notes no major pattern in either the type of operation or the kind of morphemic involvement that could be attributed to increased proficiency, her data on word level miscues provide some general information

about the frequency of the types of operations for her readers. In their miscues, the young subjects substitute words fully three times as often (74--68--71--69%) as they omit them (19--18--16--13%), the next most frequent process at the word level. Insertions are fairly rare (3.3--0.5--6.8--5.4%) for the group, and, finally, only one of the four readers produced any reversals in the oral reading and then a mere 0.6% of the time. Table 11 and Figure 5 illustrate these patterns.

TABLE 11
PERCENT OF TYPES OF MISCUES AT THE WORD LEVEL

	FAUST	TONY	ALTHA	FRANK
SUBSTITUTION	69.1	71.1	68.4	74.2
INSERTION	5.4	6.8	.5	3.3
OMISSIONS	13.2	16.0	17.5	19.2
REVERSALS	0	0	0	.6
NOT AT WORD LEVEL	12.4	5.5	13.7	2.8

For these young readers, at least 28% of all miscues cause some change at the phrase level. Again, as with the other structural levels studied, there was no developmental pattern with increased proficiency for miscues at this level. As with the word level miscues, Goodman's readers substitute far more frequently--five times--than they omit, insert or reverse (the other operations in order of decreasing frequency) in their miscues at the phrase level. Clause level changes resulted from at least

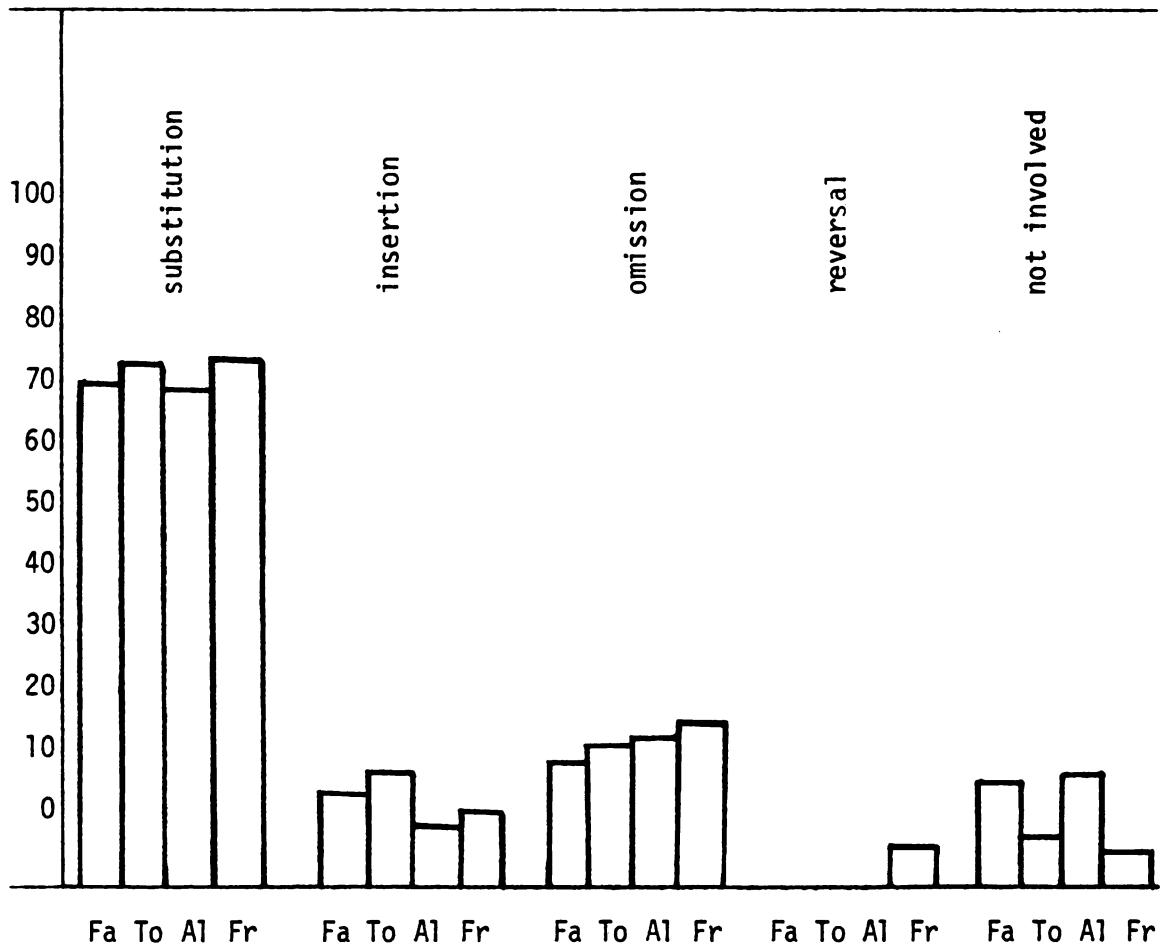


Figure 5. Percentage of Miscue Types at Word Level

10% of the miscues of the native readers. For the operations of substitution, insertion, and omission, there is no developmental pattern to accompany increased proficiency; the data from clause level dependency changes, on the other hand, suggest that as the young readers' proficiency increases over time, they are more likely to produce miscues causing complex clause structural changes in the text material. Table 12 shows this trend.

TABLE 12
PERCENT OF CLAUSE DEPENDENCY MISCUES

	FAUST		TONY		ALTHA		FRANK	
SESSION	w	a	w	a	w	a	w	a
1	0	0	0	0	0	0	--	3.4
2	0	0	0	0	0	0	0	0
3	0	7.6	0	5.4	3.1	0	0	0
4	0	3.8	0	0	0	0	0	0
5	0	7.7	0	0	1.8	3.6	0	0
6	--	--	0	0	1.7	1.7	0	0
7	.8	6.7	0	.8	--	--	0	0
8	3.4	1.9	0	1.2	--	--	1.2	0

w = within
a = across

To summarize: The data from miscue type and structural level yield very little developmental information in the Goodman study, aside from the observation that substitutions are the most frequent type of miscue

at the submorphemic, morphemic and word level. Changes in reading proficiency do not appear to affect performance at these levels. On the phrase and clause levels, the subjects' increasing proficiency increased the likelihood that changes would result from the miscues. As they become more proficient the young subjects seem to process larger units of language.

4.3 Comparison of the Studies

In any study of developmental patterns in reading, it is important to keep in mind that general trends are not to be equated with straight line development. Language acquisition, like mental growth, is, as Werner and Kaplan (1952) point out, a saltatory process and "rather than being conceived as a straight increase of achievement, is . . . a sequence of rises and declines of processes, subserving such achievement" (p. 96). Quite simply this means that, while developmental changes will frequently occur in an orderly step-by-step fashion as proficiency increases, more often, developmental changes will not be 'straight line'. A researcher can expect these patterns of change between widely different proficiency levels, but should also be prepared to find rises and declines between the extremes. For both Goodman's longitudinal study and the current cross-sectional investigation, the only developmental trend to emerge from the study of miscue type and level is one which evidences this pattern of saltatory change. In both studies, a comparison of high and low proficiency reading behavior shows that increased proficiency results in the increased tendency to process larger units of language and meaning; between these extremes, there are rises and falls. The clause dependency-altering miscues (see Table 10 for current study; Table 12 for Goodman study) best illustrate this point.

Aside from the developmental trend for readers in both groups to process increasingly larger units of language as a function of higher proficiency, no developmental information emerges from the study of miscue type and level. Actually this is not entirely surprising. As Goodman points out, simply counting certain types of miscues can be misleading, as misleading perhaps as simply quantifying the overall frequency of errors in oral reading. More revealing than any frequency count is an inquiry into the quality of the miscues. Only this type of investigation shows "how the miscue affects the linguistic unit within which the miscue is involved and how it affects the meaning of the language being read" (p. 35). A good case in point is the word level omission data from both groups of readers.

Goodman finds that the overall frequency of omissions on the word level dropped slightly with age for all her readers, though not necessarily as a function of increased proficiency. The average readers in her study had 13% and 16% word level omissions and the slow readers 18% and 19%. The readers of the current investigation showed a slight decline in the number of omissions with higher proficiency; low to high--11.5--10.6--10.5%. These figures by themselves provide little developmental information. With omissions, the important difference between the proficiency groups is the acceptability of the structures that result from the miscue. A higher proficiency reader in either study was more liable to omit words that did not destroy the meaning of the text or words that did not disrupt the syntactic structure of the text sentences. For Goodman's young readers this pattern of change with increased proficiency can be found between average and slow subjects and for all readers over time. Data from the present study confirm this trend, as seen in Table 13.

The following examples illustrate acceptable and unacceptable sentences (from the current investigation) produced by word level omissions.

FULL ACCEPTABILITY: When he returned, Niemand was leaving Harry's bedroom.

NO ACCEPTABILITY: He turned his head towards the door to the bedroom as the boy entered.

In summary, neither the Goodman study nor the current investigation demonstrates any significant developmental changes in the frequency of miscue type (substitution, insertion, omission, or reversal) that can be attributed to a rise in reading proficiency. For both groups of readers, the overall most frequent type of miscue is substitution, followed by omission and insertion. Goodman has very few miscues involving reversals in her data. In the present data there are no reversals on the clause, phrase or word level; one on the bound morpheme level; and less than ten on the submorphemic level. For the most part, simply quantifying the percentages of miscues occurring at the various structural levels likewise reveals little in the way of developmental patterns for either group.

TABLE 13

WORD LEVEL OMISSION AND ACCEPTABILITY IN PERCENTAGE

	HIGH		MED		LOW	
	syn	sem	syn	sem	syn	sem
FULL ACCEPTABILITY	55	50	18	18	36	24
NO ACCEPTABILITY	0	0	21	21	29	29

syn = syntactic
sem = semantic

The one exception is the pattern of change in the size of the linguistic and meaning unit processed by the reader. As proficiency increases so does the tendency, for both groups of readers, to involve increasingly larger structural and meaning units in their miscues.

In the final analysis, frequency counts of miscue types and level yield only slightly more developmental information than other kinds of quantitative analyses, such as Miscues per Hundred Words. Investigation of the quality of the miscue (its syntactic and semantic acceptability in the sentence and passage) seems to be a more fruitful line of inquiry. Both groups of readers, for example, have a higher percentage of acceptable structures resulting from word level omissions as their proficiency increases. Similar patterns of increased acceptability emerge at the other levels of language studied, specifically phrase and clause where Goodman notes that, for all types of miscues, increased proficiency means a higher percentage of acceptable sentences produced. The phrase and clause data from the present study suggest similar conclusions; see Table 14.

It is this concern with the readers' treatment of language and meaning encountered in the text which lies at the center of a taxonomy Analysis. The next section takes up the investigation of cueing systems used in reading, an area of study that focuses on these issues.

TABLE 14

ACCEPTABLE STRUCTURE FOR CLAUSE AND
PHRASE LEVEL MISCUES TYPES

	HIGH		MED		LOW	
	syn	sem	syn	sem	syn	sem
CLAUSE LEVEL						
substitution	55	55	56	50	54	54
insertion	63	63	46	46	50	38
omission	75	75	86	86	33	33
not involved	72	49	61	34	51	28
PHRASE LEVEL						
substitution	70	70	50	48	55	54
insertion	33*	33*	68	68	36	27
omission	50	50	20	20	17	17
not involved	72	43	66	33	51	23

*Only three insertion miscues produced by entire group.

CHAPTER V

CUEING SYSTEMS IN LANGUAGE

5.0 Introduction

Reading is a selective process. It involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected, or refined as reading progresses.

More simply stated, reading is a psycholinguistic guessing game. It involves an interaction between thought and language. Efficient reading does not result from precise perception and identification of all elements, but from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time (Kenneth Goodman 1967:127).

A major purpose of reading is, of course, communication of ideas. In order to participate in the communicative experience, readers must be able to comprehend what they encounter in the text. As Kenneth Goodman points out in the above quotation, efficient readers move towards this comprehension through selective use of cues available to them in the language. These readers employ the fewest possible cues as they play the 'psycholinguistic guessing game' of predicting, guessing, testing and confirming to arrive at the meaning of the text. All language is abundantly rich in cues and all language users regularly make use of them to arrive at meaning. Readers, then, as experienced language users, come to the reading task quite practiced in using language cues to extract meaning. This section focusses on what the readers do with the many cues available to them in written language.

These cues are of three types: graphophonemic, syntactic and semantic. The taxonomy analysis examines the use of each of these cueing systems and additionally investigates the intonation patterns of the oral reading. In the analysis, each miscue is studied to determine to what extent and with how much success the reader uses each of the cueing systems available. As with other parts of the investigation, the central issue is the readers' concern with preserving the structure and meaning of the text.

5.0.1 Intonation: Although quite frequently in oral reading, especially with non-native speakers, there are changes in the expected intonation pattern, in a taxonomic analysis the researcher is interested only in those intonational changes which cause a disruption in the structure or meaning of the text sentences. Intonation miscues may involve changes in the stress, pitch or juncture of the expected response. There are six subcategories that a researcher chooses from when coding a miscue for intonation.

0. There is no change in the expected intonation pattern or an intonation shift can be attributed to other changes that the reader has made.

1. An intonation shift occurs within a word; the result is a non-word or a different lexical item.

. . . listening to the constant chittering, the rushing scurry . . .

READER: rushing → \$ rush - ing¹²

2. A change in intonation occurs within a phrase structure.

TEXT: They rose like windblown balls of fluff . . .

READER: They rose like wind blows balls of fluff . . .

3. Intonation changes affect the end of the phrase and/or the end of the sentence.

TEXT: . . . he shoved both hands deep into his trouser pockets . . .

READER: . . . he shoved both hands deep into his trousers.
pockets . . .

4. The shift in intonation involves substitution of a conjunction for terminal punctuation or the reverse.

TEXT: . . . and the room was very quiet. Dr. James Graham . . .

READER: . . . and the room was very quiet and Dr. James Graham . . .

5. Direct quotes are involved in the intonational shift.

TEXT: . . . and said, "I like him." Graham was now certain . . .

READER: . . . and said, "I like him, Graham." Was now certain . . .

5.0.2 Graphophonemic (Grapho/phonic) Cueing System: In the taxonomic analysis each word-for-word substitution miscue is examined to determine the similarity to the visual configuration of the expected response; the miscues are then judged on their proximity to the sound of the text word. Both codings are made on a ten point scale to represent increasing similarity; 0 is coded for words with no similarity to the expected response and 9 for those which are homophones or homographs. The ten original categories are often collapsed into four: no, little, moderate and high proximity.¹³ The examples below illustrate the varying degrees of similarity.

	GRAPHIC	PHONEMIC
1. No similarity	now BUT	for TO
2. Little similarity		
--key letter/sound	his THESE	Graham HERMAN
--middle same	after OFTEN	frowned \$GROWNING

--ends same	so TOO	had DID
3. Moderate similarity		
--beginnings same	as AND	your YOU
--beginnings and middles same	obvious OBVIOUSLY	couldn't COULD
--beginnings and ends same/middles and ends same	Niemand's NIEM'S	flies \$FLILS
4. High similarity		
--beginnings, middles and ends same	liberator's \$LABERTOR'S	obviously \$OBVISULY
--single difference	pinched PACHED	snowy SNOW
--homograph/homophone	read (present) READ (past)	too TWO (Allen 1976)

5.0.3 Syntactic and Semantic Cueing Systems: Although all the language systems "function fully only when they function interdependently" (Burke, in Allen 1976), it is with the syntactic and semantic cueing systems that the interplay is most critical. The Goodman Taxonomy attempts to answer two questions which aid the researcher in uncovering the readers' use of these cueing systems: Does what I am saying sound like language? and Does it make sense? Strictly speaking the separation of syntax and meaning is artificial; however, the taxonomy does attempt to make independent judgments about the way a reader responds to the operations of the text language and to how meaning is built through the text. The analysis, then, first takes up the reader's use of the syntactic cueing system.

SYNTACTIC CUEING SYSTEM

Every language user, native or foreign, has internalized a grammar for the language. Kenneth Goodman and Niles (1970) characterize the language user's grammar as including information about the following features: grammatical sequences--the common sentence patterns of the language, for example the SUBJECT-VERB-OBJECT pattern of the declarative sentence in English;

grammatical markers--those bound or free morpheme which outline the patterns of the grammatical sequences. These markers include function words such as the, a/an, but, was, and so forth which point to the grammatical function of the meaning-carrying words of the language--the nouns, verbs, adjectives, and adverbs. Grammatical markers are also inflections such as verb endings -ing, -ed, -s, which provide grammatical information about content words;

transformational rules--grammatical rules which allow language users to manipulate the deep and surface structures of the sentences they produce and understand.

The evaluation of readers' use of the syntactic cueing system begins with an examination of the grammatical function of the miscues and the transformations, if any, that have resulted from the miscues.

In a vastly simplified form (see above, Chapter 2, for discussion), the grammatical function category allows for three choices. The miscue may have the same grammatical function as the expected response:

Dr. James Graham . . . sat in his favorite chair ^{TAKING} thinking.
The substituted word, despite the fact that it does not make sense in the sentence, fills the same grammatical role as the text word as indicated by the reader's retention of the -ing ending. Non-word substitutions can also preserve the grammatical function of the text word, as in the

following example.

. . . he rubbed his hands ^{\$ BRISKLY} briskly together, smiled and nodded.
The use of the -ly suggests that the reader was conscious of the grammatical role of the text word or at least the need to match that form. Miscues can also be judged to have a different grammatical role than the text word:

Dr. James Graham, head ^{SCIENTIFIC} scientist for an important . . .
A third category is provided for those instances when the researcher cannot reasonably determine the grammatical function of the miscue.

He smiled ^{\$ MAGNANISMOU} magnanimously.

In addition to comparing the grammatical function of miscues and expected responses, a researcher investigates the ways in which the miscues transform the language of the text. In a taxonomic analysis the word 'transformation' is used to mean any type of change that involves a difference in deep structures resulting from the miscue or a difference in surface structures caused by the application of different grammatical rules. The question of what constitutes a 'true transformation' is by no means a closed issue (see Burke, in Allen 1976 for discussion) and a transformational grammarian attempting to posit a competence grammar for a language user might well use the term differently. Miscue researchers, though, are concerned chiefly with the actual performance of a real reader and as such focus their efforts primarily on determining what type of change, if any, has resulted from the miscue. The following examples illustrate the five transformation categories.

0. A transformation is not involved. A miscue is coded under this category when there is no change in the syntactic structure, even if the meaning of the sentence is changed.

. . . Mr. Purcell did not believe in ^{GOATS}ghosts.

1. The miscue involves a transformation which produces a difference in deep structures between the miscue and the expected response. In some cases both the syntax and the meaning are changed; in others, the meaning is retained while the syntax changes. In the first example, both syntax and meaning are changed while in the second the meaning remains the same despite a syntactic change.

TEXT: The scientist wished he had asked the man what he wanted before . . .

READER: The scientist wished he had asked "What do you want?" before . . .

I'll come ^{TO}and read with you soon.

2. The deep structure remains the same but the reader apparently uses a different set of compulsory rules to generate the surface structure.

She tore ^{BUNCH}bunches of fur from his back. (Allen 1976)
This variation most likely involves a regional or social difference rather than a difference in deep structure; the reader's dialect differs from the author's in the set of obligatory rules for producing the surface bunch from bunches.

3. Again the deep structure remains the same, but in this case, the miscue is the result of the operation of an optional transformation; the reader has generated the surface structure by applying alternate available grammatical rules.

Purcell was a small fussy man, red cheeks and ^atight melon stomach. The deletion of the a most probably represents the use of an optional transformation by the reader; the resulting structure is completely acceptable.

4. The deep structure is lost or garbled. Sometimes readers do not recognize or anticipate the author's underlying structure; as a result

the miscue does not match the author's structure and they fail to produce a recognizable portion of an alternate structure. Very often miscues coded under this category will involve non-word substitutions which cannot be assigned a grammatical function.

But he heard himself ^{TO \$DEFOND} dutifully saying . . .

In the investigation of the readers' use of the syntactic cueing system, the researcher next examines the miscues to determine their grammatical acceptability. For those miscues which are judged syntactically acceptable a further analysis--one which assesses the extent of grammatical change--is carried out. The data from the examination of syntactic acceptability provides yet another measure of the reader's success in dealing with the text language. The researcher chooses from among five subcategories when judging the syntactic acceptability of a miscue.

0. The resulting structure is unacceptable. The sentence is ungrammatical.

"But this is all ① got. Just five dollars."
The omission of I, the subject of the verb got, produces an unacceptable structure.

1. The miscue is acceptable only with that portion of the sentence that precedes it; it is possible that a grammatical sentence could be built.

Dr. James Graham, head ^{SCIENTIFIC} scientist for an important government project . . .
It is possible to finish the sentence with the reader's miscue, for example,

Dr. James Graham, head scientific investigator for a government project . . .
and produce a completely grammatical sentence.

2. The miscue is acceptable only with the portion of the sentence that follows it; as with the above subcategory, it would be possible to build

a grammatical sentence with the miscue included.

He tried to be calm as he reached ^{OF} for the gift Niemand had left.

3. The miscue is syntactically acceptable within the sentence, but not within the text as a whole; the resulting sentence violates some grammatical constraint operating within the text. Tense changes constitute the most frequent example in this subcategory.

Graham felt relieved that the unpleasant conversation ^{HAS} had ended.

4. The sentence which results from the miscue is totally acceptable syntactically.

. . . and were lost in the smoky grey of the ^{WINTER} wintry sky.

For miscues coded under subcategories 3 and 4, the researcher then makes a judgment on the extent of grammatical change caused by the miscue. The ten subcategories (see Appendix E) are normally collapsed into four general groups. The resulting structures can be judged as differing completely from the rest of the text; as producing a major structural change; as causing minor change to the sentence or a phrase within the sentence; or as resulting in little or no change to the syntactic structure of the text sentence.¹⁴

Different: TEXT--You do not have to stay home.

READER--You may go and have fun. (Allen 1976)

Major
Change: The liberator's ^{SILENCE} silent and lifted gaze watched after them.

Minor
Change: I gave it to him before when I went into his room.

Little
Change: The men drank the ^{DRINK} drinks in silence.

SEMANTIC CUEING SYSTEM

In addition to the syntactic cues available in language, there are semantic cues that a reader can use to arrive at the meaning of a text. A researcher is interested in the readers' concern for producing language that is meaningful and examination of the data on their use of the semantic cueing system allows the investigator to determine how the readers are answering the question "Does what I am saying sound like language?" Since the purpose of reading is to understand the author's meaning, the readers' concern for arriving at this meaning is one of the most revealing pieces of information a researcher can hope to gather about the reading process. The evaluation of the readers' sensitivity to semantic information in the text is handled in two categories: semantic word relationships and semantic acceptability.

Under the semantic word relationship category the researcher examines each word-for-word miscue and determines if there is any meaning relationship between the text word and the observed response. This evaluation gives the researcher insight into the readers' concern for preserving the meaning of the individual text words. There are 15 sub-categories under the semantic word relationship category.

0. Unrelated: swung soon
1. Syntactic relationship with only minor semantic relationship:
 on of
2. Strong sequential relationship; the words seem to 'go together':
 come in come on
3. Association to homophone or homograph:
 read (present) read (past)
4. & 5.
 Shift from generic to specific or vice versa:
 winter weather (Jenson 1972)

6. Common attribute or confusion between characters:
leaping limping (Jenson 1972)
7. Antonym:
couldn't could
8. Other in pair:
go come
9. Variant form of the same word, inflectional or derivational:
wintry winter
10. Slight difference in connotation:
waddled went
11. Similar name:
Niemand Niem
12. Synonym within text:
Niemand him
13. Synonym in other contexts:
They ^Cbuilt ^Aone for Lightfoot, too. (Jenson, 1972)
14. Some semantic association:
go (back) get (back)

The central part of the analysis of the readers' use of the semantic cueing system is the examination of the miscues to determine to what extent they make good semantic sense. In coding the semantic acceptability of the miscues, the researcher makes judgments that are independent of the syntactic decisions of the earlier coding (syntactic acceptability); semantic acceptability, however, cannot be rated higher than syntactic acceptability of the miscues.

0. Unacceptable--the miscue results in a sentence that is completely unacceptable semantically. The sentence simply does not make sense.

GIVE

He hesitantly produced a five dollar bill.

Many of the sentences coded under this subcategory contain non-words which are always coded as semantically unacceptable.

\$ PERPLETY

The merchant's brow was puckered with perplexity.

1. The miscue is acceptable only with that portion of the sentence that precedes it; it would be possible to form a semantically acceptable sentence containing the miscue.

Simply he glanced up, and there was the ^{STRANGE}stranger, standing just inside the door . . .

A possible semantically acceptable sentence which includes the miscue might read:

Simply he glanced up, and there was the strange man, standing just inside the door . . .

2. The miscue is semantically acceptable only with the portion of the sentence that follows it; an acceptable sentence could be formed using the miscue.

But he heard himself ^{DUTIFULL}dutifully saying "Why--why, how long did it take you?"

3. The miscue is semantically acceptable within the sentence, but not within the text as a whole; the miscue produces a sentence which somehow violates a semantic constraint working in the passage.

Emphatically, Mr. Purcell did not believe in ^{GOATS}ghosts.

While the sentence with the miscue included makes sense on its own, within the story, which deals with the eerie feeling a stranger produces, it does not make good sense.

4. The sentence which results from the miscue is completely acceptable semantically.

He ^{WENT}waddled to the window and stared out.

As with the coding for syntactic acceptability, for those miscues which fall under subcategories 3 and 4--wholly acceptable structures--a further analysis is performed to determine the extent of change that has

taken place as a result of the miscue. Independent coding decisions are made about syntactic and semantic change; unlike the acceptability coding, semantic ratings may be higher than syntactic. The four general subcategories for semantic change are:

Unrelated: Only a ^{MADAM}madman would give a loaded revolver to an idiot.

(The 'madman' is supposed to be the speaker; the reader should at this point realize that this statement is the moral of the story.)

Major
Change: The man ^{BROUGHT}bought the two doves . . .

(The whole story revolves around the man buying the doves.)

Minor
Change: The man left him with a ^{DISTINCTIVE}distinct sense of the eerie.

(Although this miscue causes a change in the meaning of the phrase, this change does not have an effect on the meaning of the story.)

Little
Change: . . . which told him that at a ^{AT FIFTY-CENT'S REDUCTION}fifty-cent reduction : : :

(The miscue produces no change in the meaning of the story.)

5.1 The Present Study

5.1.1 Intonation: As Table 15 shows, the readers in the present study usually produced acceptable intonation, no matter what the proficiency level. Acceptable intonation, P. David Allen reminds us, "is not the same as preferred intonation. It can be slightly awkward with hesitation and still be acceptable within English patterns" (1976:73-73). His reminder is particularly pertinent when foreign readers, such as those of the present investigation, are under study. The relatively low frequency of miscues coded under "Shift Within Word", for example,

reflects the fact that word intonation was very closely associated with the dialect of the current readers. Many of the vocabulary items they encountered in the text were cognates from Spanish; their pronunciation of these words, while often not the preferred form, was certainly acceptable, despite the numerous intonation shifts. Those few cases which were coded under this sub-category represent instances when the readers truly seemed to be 'sounding out' the words. In general, intonation miscues do not appear to interfere with the reading process. The preponderance of acceptable intonation patterns by readers on all proficiency levels indicates that they are correctly anticipating the structures and intended meaning of the author.

TABLE 15
PERCENT OF INTONATION MISCUES

	HIGH	MED	LOW
SHIFT WITHIN WORD	2.0	1.6	2.2
WITHIN PHRASE STRUCTURE	1.0	.8	---
END OF PHRASE OR SENTENCE	3.0	1.2	1.6
CONJUNCTION OR TERMINAL PUNCTUATION	---	---	.4
DIRECT QUOTES	1.0	.4	.8
NO INVOLVEMENT	93.0	96.1	94.9

5.1.2 Graphophonemic (Grapho/Phonic) Cueing System: It is obvious that reading requires some reference to the print and not surprisingly the readers of the current study produced miscues that both looked like and sounded like the expected response. The graphic proximity was higher than the phonemic proximity (see Figure 6 below) for the word level substitutions of these readers: 5.4--6--7 for graphic compared to 4.8--5.1--6.3 for phonemic. These figures correspond to the results of other miscue studies and suggest that foreign readers, like their native counterparts, obtain cues from the visual properties of words to a greater extent than from sound-letter relationships. The figures also

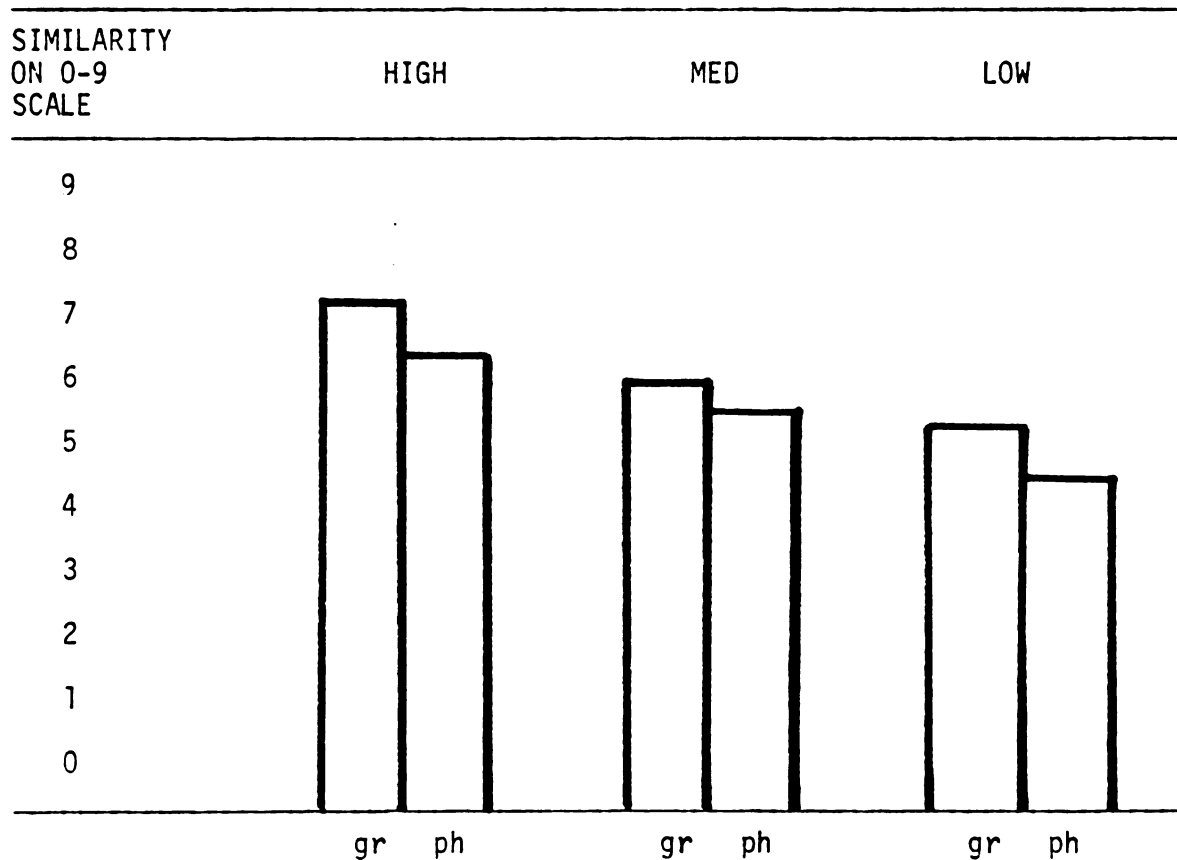


Figure 6. Graphic and Phonemic Similarity Mean Scores

illustrate a developmental pattern towards higher mean scores for both graphic and phonemic proximity as proficiency increases. In other words, the more proficient the readers, the more likely the miscues will resemble the text words, both graphically and phonemically.

The developmental trend towards closer graphic and phonemic proximity as a function of increased proficiency is again illustrated in Table 16 which shows that for the readers of the current study, greater reading proficiency means finer graphic and phonemic discriminations. The high group readers produced their largest number of miscues in the subcategory "High Similarity"--beginnings, middles and ends in common. Fifty-eight percent of the miscues have high graphic similarity and 52% show high phonemic similarity to the text word. The miscues of the medium readers reveal "High" graphic similarity most frequently (50%) but the phonemic analysis indicates that most miscues have only "Moderate" similarity with the text word--beginnings and ends in common. For the low group readers both the graphic and phonemic analyses show that their

TABLE 16
PERCENT OF GRAPHIC AND PHONEMIC SIMILARITY

	HIGH		MED		LOW	
NO SIMILARITY	1.3	8	1.0	8	1.7	8
LOW	9	7	7	6	6	5
MODERATE	32	33	42	47	48	51
HIGH	58	52	50	38	44	37

miscues most frequently have "Moderate" similarity to the text words, 48% for graphic and 51% for phonemic. These figures reveal another developmental trend: the tendency for more proficient readers to use cues from all parts of the words, not just the beginnings and ends. Low proficiency readers tended to use information from the beginnings and to a lesser extent from the ends of words. Higher proficiency readers use information from all parts of words which is, of course, reflected in their overall larger scores for high similarity.

For those miscues with no graphic similarity, there is an interesting relationship to semantic acceptability. For readers at all proficiency levels the trend is for "No Similarity" graphic miscues to have a greater percent of semantic acceptability than the average for all miscues. At the same time the "Single Difference" (8 on the 9 point scale) miscues have less than average semantic acceptability. The pattern is somewhat obscured for the high and medium groups because they produced only two miscues apiece (for the entire group) which had "No Similarity"; the 50% acceptability figures (see Table 17) are therefore not truly representative. For the whole group, however--notice in particular the low group data--the same basic pattern emerges: greater than average (for all miscues) semantic acceptability for miscues with "No Similarity" graphically and lower than average semantic acceptability for those miscues with a "Single Difference". While no developmental pattern can be posited for semantic acceptability of those miscues with no graphic similarity,¹⁵ for both miscues in general and those miscues which differ by only one graphic unit, the data point to a developmental pattern of increased semantic acceptability as a function of higher proficiency.

TABLE 17

PERCENT OF SEMANTIC ACCEPTABILITY X GRAPHIC PROXIMITY CATEGORIES
 "NO SIMILARITY" AND "SINGLE DIFFERENCE"

	HIGH	MED	LOW
AVERAGE (ALL MISCUES)	49	38	29
NO SIMILARITY	50*	50*	67
SINGLE DIFFERENCE	42	33	20

* Figure represents one of two miscues.

The data suggest that for all readers at all levels reliance on graphophonemic information, as in those miscues showing only a single graphic difference, does not insure success in reading, that is, in getting meaning from a text. Non-words perhaps best illustrate this observation. In a taxonomy analysis, non-words are always coded as semantically unacceptable since the researcher cannot determine with any certainty what, if any, semantic relationship exists between the miscue and the text word. When non-word miscues are separated from the rest of the miscue data and coded for graphic and phonemic proximity, the data indicate that these miscues have a higher than average degree of similarity to the text material. Table 18 compares "Moderate" and "High" similarity codings for all miscues and for non-words only and shows that non-words, which have no acceptability semantically, more closely resemble and sound like text words than miscues in general. There is a developmental trend for increasing phonemic similarity of non-words as

proficiency increases.

The high graphophonemic similarity of non-words to the text supports Page's contention (1970) that readers tend to increase their dependence on graphic and phonemic information as reading material proves unfamiliar or difficult. For the readers of the current study, the more difficult of two stories used, "Caged" (see above, Chapter 2, for discussion), caused the readers to rely more heavily on graphophonemic information. From low to high proficiency the percentages of "high" similarity miscues increased .3/11.6/7.5% for graphic and -2.6 (decrease) 9.6/8.0% for phonemic for the reading of the second text.

TABLE 18
COMPARISON OF GRAPHOPHONEMIC SIMILARITY FOR
GENERAL MISCUES DATA AND NON-WORDS ONLY

	HIGH		MED		LOW	
	gr	ph	gr	ph	gr	ph
ALL MISQUES:						
moderate similarity	32	33	42	47	48	51
high similarity	58	52	50	38	44	37
NON-WORDS ONLY:						
moderate similarity	47 (+15)	29 (-4)	34 (-8)	42 (-5)	45 (-3)	53 (+2)
high similarity	47 (-11)	66 (+14)	61 (+11)	52 (+14)	55 (+11)	47 (+10)

The pattern of change is for fairly stable miscue behavior of low proficiency readers, that is relatively high reliance on the grapho-phonemic cueing system; increasing graphophonemic similarity in the miscues of the moderate proficiency readers; and a levelling off, to some extent, for the high group readers.

5.1.3 Syntactic and Semantic Cueing Systems: While, as the introductory discussion indicates, separate analyses of the use of the syntactic and semantic cueing systems are possible and can be expected to provide some insight into the readers' use of available cues in reading, the comparison of the use of the two cueing systems offers perhaps the best view of the reading process. This comparison involves study of: word-for-word miscues and their syntactic and semantic relatedness--grammatical function and semantic word relationships; changes on any level--transformations, which may encompass both syntactic and semantic changes; and entire phrases and passages within the text, with miscues included, and their grammatical structure and meaning--the categories of syntactic/semantic acceptability and change.

Grammatical Function and Semantic Word Relationships

Readers bring their knowledge of the syntactic features of the language with them to reading. This is obvious in the fact that in all taxonomic studies reviewed readers have produced miscues which preserve the grammatical function of the expected response. The foreign subjects of the current investigation typically produced miscues of the following kind:

"I will not continue ^{THAT} this discussion."

The miscue substitutes one determiner for another and plays exactly the

same grammatical role as the expected response. Miscues like this make it obvious that the readers are sensitive to the grammatical features of English. Table 19 summarizes the analysis of the grammatical functions of the miscues for the three proficiency groups of the present study. The data show a pattern of increasing similarity of grammatical function of the miscues with the text words as proficiency level increases and a corresponding decrease in the percentage of miscues which have different grammatical function than the expected response. Even at the low proficiency level the overall percentage of miscues with the same grammatical function as the text words is fairly high--64%; this suggests that, generally, readers have no great problem responding to the grammatical cues available in the text words.

TABLE 19
PERCENT OF GRAMMATICAL FUNCTION CATEGORIES

	HIGH	MED	LOW
FUNCTION SAME	71	69	64
FUNCTION DIFFERENT	24.5	26	31
FUNCTION UNDETERMINED	4.5	5.8	5.1

In a taxonomy analysis those words which fall under sub-categories 2, 7, 11, 12, 13, and 14 of the semantic relationship category are judged to have meaning similar to that of the text words. For readers of the current study, 7%--8%--15% (low to high proficiency)

of all word-for-word miscues fall under these subcategories; these figures are low at each level but nonetheless illustrate a developmental pattern of increasing semantic similarity to text words as a function of higher reading proficiency. Subcategory #9--variant form of the same word, inflectional or derivational--accounts for the largest percentage of all word-for-word miscues analyzed under this category: 23%--26%--28% low to high. Obviously the variant forms contain elements of meaning of the text words and their use indicates that the readers are attempting to produce some type of match with the material. As with the other semantic word relationship data, the figures for subcategory #9 show a trend towards increased similarity to text words as proficiency level increases.

A comparison between grammatical function and semantic word relationship for all word-for-word miscues indicates that the readers respond more successfully to grammatical than to semantic cues. Table 20 dramatically illustrates the wide gap between successful matching of

TABLE 20
GRAMMATICAL FUNCTION AND SEMANTIC WORD RELATIONSHIP

	HIGH	MED	LOW
% OF SAME GRAM FUNCTION	71	69	64
% OF SEMANTICALLY RELATED WORDS	15	8	7

syntactic function and meaning in the text for the miscues of the subjects at all proficiency levels. The developmental pattern is in the direction of a narrowing of the discrepancy between successful responses to syntactic and semantic information. From low to high the proficiency groups evidence the following pattern: low group readers' miscues match the grammatical function of the text words fully nine times as often as they demonstrate some semantic relationship; for the medium group, the figure is 8.6; and, the miscues of the high group readers show the same grammatical function as the text words 4.7 times as frequently as they show some meaning relationship.

Transformation

In the miscue studies reviewed, for all readers the largest percent of miscues involved some type of transformation. The miscues most frequently resulted in different deep structures, more frequently, in fact, than they involved no grammatical transformation. The foreign readers of the current study, like their native counterparts in other studies, usually transform the deep structure of the text sentence when they produce miscues. The actual percentage of transformations is about equal for all proficiency groups 48.1%--47.4%--46.8% low to high. A more revealing figure in terms of developmental data is one which indicates the acceptability of the transformed structures; here there is a significant difference between the proficiency groups. For miscues which cause changes in the deep structure of the text sentence, the groups from low to high show a syntactic acceptability of 29%--41%--51%. The semantic acceptability data are similar: 27%--40%--55%. These data indicate that the important change accompanying increased reading

proficiency is in the acceptability of the structures produced as a result of the miscue. A high proficiency reader produced the following miscue.

WOULD
Won't you be responsible?

which while it causes a syntactic change--verb tense difference and negative deleted--and semantic change--a slight shift in the connotation--results in a perfectly acceptable sentence, both syntactically and semantically. Over 50% of the high group transformations are of this type. The low group, on the other hand, produced acceptable structures with their transformations only 25% of the time. More typical for that group were miscues like the following, which is neither syntactically nor semantically acceptable.

The scientist wished he ^{SAT}had asked what the man wanted . . .

Table 21 summarizes the data from the investigation of transformations in the miscues of the foreign readers under study.¹⁶ They show, in addition to the overall frequency of the transformations, a saltatory

TABLE 21
PERCENT OF TRANSFORMATIONS

	HIGH	MED	LOW
TRANSFORMATION-- DEEP STRUCTURE	46.8	47.4	48.1
OPTIONAL TRANSFORMATION	10.2	5.6	6.6
STRUCTURE LOST	6.3	9.0	14.4
NO TRANSFORMATION INVOLVED	36.6	38.0	30.9

developmental trend towards increased use of optional transformations as a function of increased proficiency: 6.6%--5.6%--10.2% low to high. A final pattern to emerge from the study of the readers' transformations of textual material is concerned with lost or garbled structures. In most taxonomy studies, miscues of this type account for a negligible percent of the total number of miscues. For the readers of the current investigation, however, miscues of this type are relatively frequent; the percentages, which decreased with higher proficiency, are 14.4%--9.0%--6.3%. It is not surprising, though, that non-native readers would be less familiar with certain grammatical possibilities of the language and that their efforts to produce oral reading that "sounds like language" might sometimes meet with failure. Structure-destroying miscues often occur when the readers seem confused by an unfamiliar vocabulary word; in their efforts to focus on that word, they lose sight of the grammatical flow of the sentence, as in this miscue:

3. PURCHAM THEM.THEN.
2. PURCHAM
1. PUR-

He was holding the cage shoulder high, staring at his purchase.
Then, . . .

It appears that this reader, once he stops at the troublesome word purchase, loses the rhythm of the sentence as well of the sense of what he is reading. As mentioned above, the developmental pattern for lost or garbled structures is for a decrease as reading proficiency increases.

Syntactic and Semantic Acceptability

Unlike the categories of grammatical function and semantic word relationship, which deal with word-for-word evaluation of miscues, and the transformation category, which focuses primarily on the nature and extent of the change caused by a miscue, the categories of syntactic and

semantic acceptability offer the clearest picture of how a reader is answering the questions "Does what I am saying sound like language?" and "Does it make sense?" When the categories are considered together, a researcher can get an idea of how well the reader is handling syntactic and semantic cues available in the text.

Table 22 summarizes the data on syntactic and semantic acceptability of the miscues for the readers of the present study. The figures indicate a number of general features present in the reading of the different proficiency groups as well as a number of developmental trends. All readers, no matter what the reading level, are more successful with syntactic than with semantic information in the text. This is evident in the fact that the percentage of miscues totally acceptable syntactically is, in each case, higher than the percentage of miscues totally acceptable semantically. Also the rank order of the percentages for the various sub-categories within the syntactic acceptability category is the same while

TABLE 22
SYNTACTIC AND SEMANTIC ACCEPTABILITY IN %

	HIGH		MED		LOW	
	syn	sem	syn	sem	syn	sem
IN PASSAGE	66	32	56	23	49	17
IN SENTENCE	4	18	4	15	2	13
WITH AFTER	4	4	4	4	6	6
WITH PRIOR	20	21	24	24	23	26
NO ACCEPTABILITY	7	25	11	34	18	39

that for the semantic acceptability subcategories differ, suggesting that the groups are more uniform in their response to syntactic information than to semantic information in the text.

The data on acceptability also point to a number of developmental patterns. First, the higher the proficiency group, the larger the percentage of fully acceptable structures, both syntactic and semantic; from low to high for syntactic acceptability: 49%--56%--66%, and semantic acceptability: 17%--23%--32%. These figures reinforce those from grammatical function and semantic word relationship categories (see above) which also indicate, on the word-for-word level, that increased proficiency results in increased syntactic and semantic acceptability of miscues; the discrepancy between syntactic and semantic acceptability noted at the word level again appears when the acceptability of the miscues is judged in terms of the entire passage.

A second developmental pattern to emerge from the acceptability data concerns the subcategory "No Acceptability". The trend here is the inverse of that for the syntactic and semantic acceptability within the total passage: from low to high a decrease in the percentage of miscues with no acceptability--syntactically, 18%--11%--7%; and semantically, 39%--34%--25%. In other words, as proficiency increases, there is a corresponding decrease in the percentage of miscues that result in unacceptable grammatical structures or meaning loss for the foreign readers of the current study. For the remaining subcategories the patterns of change with increased proficiency are far less dramatic, but in general higher proficiency means movement towards higher acceptability (towards subcategory "Acceptable in Passage") both syntactically and semantically.

For the readers in the current investigation, increased proficiency also means more flexibility in handling syntactic structures; as the reading level increases, the reader's ability to maintain syntactic acceptability, even if a sentence is not semantically acceptable, increases. To a much larger extent than the low group readers, the high proficiency readers demonstrate sensitivity to grammaticality in the structures they produce, managing to preserve syntactic acceptability even when the miscues are semantically unacceptable. The following miscues were produced by high group readers. In both cases, the resulting structures are grammatical despite the fact that they are not semantically acceptable.

A gray pallor deadened his pinched ^{FUTURES} features.

"That noise!" he ^{\$ BURTED} blurted. "Doesn't it get to you?"

Neither sentence, of course, makes good sense. Yet the retention of suffixes--the plural -s in features and -ed in blurted--indicates that the readers are aware of, and attempting to preserve, the grammatical roles of these text words and the syntactic acceptability of the sentences. Table 23 illustrates the relative success of the proficiency groups in maintaining syntactic acceptability when meaning is lost. A mark of increasing proficiency, then, for the readers of the study appears to be the ability to preserve syntactic acceptability despite problems with semantic acceptability.

A large percentage of the semantically unacceptable miscues produced by the readers in the current study involved non-words, as in the second example above. Since non-words can preserve the syntactic structure of the sentence (through inflection, intonation), the pattern of non-word substitutions provides further information about a reader's concern for maintaining grammaticality when meaning is lost.

TABLE 23
 SYNTACTIC ACCEPTABILITY X SEMANTIC
 ACCEPTABILITY (IN PERCENT)

Syntactic Acceptability total; sentence	HIGH	MED	LOW
No Semantic Acceptability	73	68	53
Limited Semantic Acceptability (Prior; After)	40	38	30

Although the high proficiency group produces the lowest percentage of non-word miscues, the pattern from low to high is erratic: low--22%; med--24%; and high--19%. On the other hand, the syntactic acceptability of structures containing non-words (they are never semantically acceptable) shows a steady, if slight, increase as a function of higher reading proficiency: 83%--84%--87%. There is a corresponding decrease in no syntactic acceptability for structures with non-words as proficiency level rises; the figures show 17% for low group readers, 14% for medium proficiency readers and 11% for high group readers. As with the data on omissions (discussed above, Chapter 4), changes in the overall frequency of non-word substitutions prove less revealing, in terms of developmental trends, than the data on the acceptability of the structures which result from the miscues. A consistent measure of increased reading proficiency for the readers in the present study is the acceptability of their miscues; as the reading level increases, so does the percentage of

acceptable structures that result from these miscues.

Syntactic and Semantic Change

Once a miscue has been judged syntactically and semantically acceptable as a piece of language, that is, to make sense and sound like language within the sentence or the whole text, the amount of change produced by the miscue is determined. For the foreign readers under study, when a miscue is judged acceptable, both syntactically and semantically, there appears to be very little change in either the structure or the sense of the text, as Table 24 shows. The readers at the different proficiency levels have almost the same percent of miscues producing little or no syntactic change (71--71--69--low to high). Higher proficiency for these readers means an increase in the percentage of already semantically acceptable miscues which produce little or no semantic change (low=49%; med=62%; and high=61%): the category shows a leap from low to medium proficiency and a levelling off for high proficiency readers.

TABLE 24
PERCENT OF SYNTACTIC AND SEMANTIC CHANGE

	HIGH		MED		LOW	
	syn	sem	syn	sem	syn	sem
Unrelated	0	2	0	2	0	4
Major Change	6	14	12	12	6	27
Minor Change	25	23	17	24	23	20
Little or No	69	61	71	62	71	49

The following summary outlines both the general feature and the developmental trends emerging from the data on the use of the cueing system in language in the oral reading of the foreign students under study.

Intonation: One general observation can be made about the use of intonation patterns for the readers of the current study--the readers at all proficiency levels are successful. No clear picture of change related to increased proficiency emerges from the data on the use of acceptable intonation patterns; see Table 15.

Graphophonemic Cueing System: Study of the graphic and phonemic similarity of miscues and text words reveals a number of general features of the reading of the subjects. First, readers at all levels produce miscues which look and sound like the expected response. In addition, for all readers graphic proximity proves to be closer than phonemic proximity, suggesting that the readers make greater use of the visual than the sound properties of words in their reading. For all readers, miscues which have no graphic similarity are semantically acceptable (they make sense) more frequently than all miscues considered as a group; on the other hand, the inverse is true for miscues with a single graphic difference: for all readers these miscues have a lower-than-average semantic similarity. Also, the non-word miscues of these readers generally reveal a closer graphophonemic relationship to text words than the total inventory of miscues. A final general feature of the use of the graphophonemic cueing system by the readers of the current study is the greater reliance on this type of information as the text material proves more difficult.

Along with these general features, a number of developmental patterns also emerge from the study of the use of the graphophonemic cueing system. As proficiency increases for the readers of the present study, their miscues look and sound more similar to the expected response; this increase is reflected in the fact that there are finer discriminations, both graphic and phonemic, in the miscues of high level readers as compared to those of the low level readers. Increased proficiency also means the use of graphic and phonemic information from all parts of the text words, not just the beginnings and ends of words, as in the reading of lower proficiency students. Another developmental trend involves the increase of semantic acceptability: as proficiency level rises, so does the percentage of semantic acceptability for those miscues which differ from the expected response by only one graphic unit. For non-word miscues, increases in reading proficiency mean increases in phonemic similarity. A final developmental trend to come forth from the investigation of the graphophonemic cueing system is the variation in dependency on sound/letter correspondence as a function of the difficulty of the material. For low proficiency readers, the use of graphic and phonemic information is always high, but it remains fairly stable despite differences in texts. As reading level increases, however, there is a sharp increase in the use of sound/letter cues as the text material becomes more difficult for the readers; the trend is towards a tapering off for high proficiency readers.

Syntactic and Semantic Cueing Systems: As with the study of the graphophonemic cueing system, the study of the syntactic and semantic cueing

systems reveals a number of general features as well as numerous developmental patterns in the reading of the subjects of the present investigation. First the general features: on the word-for-word level (grammatical function and semantic word relationship) and at the phrase and sentence levels (syntactic and semantic acceptability) readers at all levels show greater success in the use of syntactic than semantic information; for the transformation category, all readers have the largest percentage of miscues under those subcategories indicating some change in structure or meaning as a result of the miscue; finally, as a group, these foreign readers produce a fairly large percentage of miscues which result in lost or garbled structures.

The following list summarizes the developmental trends which emerge from the study of the syntactic and semantic cueing systems. For the readers of the present study, increased proficiency means:

- increases in syntactic and semantic similarity to the text word (as seen in grammatical function and semantic word relationship).
- a narrowing of the gap between successful use of syntactic information and semantic information.
- an increase in the percentage of acceptable structures (both syntactic and semantic) resulting from transformations of text material.
- a saltatory rise in the use of optional transformations.
- a decrease in the percentage of lost or garbled structures produced by the miscues.
- steady increases in the acceptability of the structures that result from the miscues (both syntactic and semantic).
- a corresponding decrease in structures with no acceptability.
- greater flexibility in handling syntactic information; ability to maintain syntactic acceptability even when meaning is lost.
- an increase in the syntactic acceptability of non-word miscues (and corresponding decrease in no acceptability for non-words).

--a movement towards less change for those miscues judged syntactically and semantically acceptable.

5.2 The Goodman Study

5.2.1 Intonation: For the young readers of the Goodman study, intonation appears to be no serious problem in oral reading, confirming results from other studies of beginning and intermediate readers. No reader has more than 12% of his total miscues affecting structure or meaning because of intonational shifts: 88-95-90-90% "No Involvement" for the four readers. Table 25 summarizes the intonation miscue data. It shows that misplaced stress within words accounts for a number of the intonational miscues, particularly when the beginning readers seem to be 'sounding out' new words. Terminal punctuation and direct quotation intonational patterns are also an occasional problem for these young readers, but it should be stressed that for none of the four readers did the observed intonation seem to disrupt either the language or the intended meaning of the text to any extent. No clear developmental pattern emerges from the study of intonation information in the Goodman research.

TABLE 25
PERCENT OF INTONATION MISCUES

	FAUST	TONY	ALTHA	FRANK
SHIFT WITHIN WORD	3.4	.5	0	.9
END OF PHRASE	5.4	1.5	6.7	4.5
DIRECT QUOTES	.9	1.7	2.6	2.7
OTHERS	3.2	4.4	.5	1.5
NO INVOLVEMENT	88	95	90	90

5.2.2 Graphophonemic (Grapho/Phonic) Cueing System: The miscues of all the young readers of the Goodman study show evidence of the use of graphic and phonemic information available in the text; that is, they both look and sound like the expected response. The mean scores for graphic and phonemic proximity for each of the sessions indicate that the readers make greater use of visual than sound information in their oral reading. The average means for the average proficiency readers (on a 9 point scale) are 5.9 and 6.1 for graphic proximity compared to 5.4 and 5.5 for phonemic proximity; the slow readers average means are lower, but demonstrate the same pattern: 4.6 and 5.0 for graphic compared to 3.9 and 4.7 phonemic. Although from session to session these readers do not show any developmental changes in their graphic and phonemic means, the above figures do indicate that higher proficiency level means greater graphophonemic proximity for word-for-word substitution miscues.

This developmental pattern of closer graphophonemic proximity as proficiency level increases emerges again from the data on the various subcategories for graphic and phonemic similarity, as seen in Table 26.

TABLE 26
PERCENT OF GRAPHIC AND PHONEMIC SIMILARITY

	FAUST		TONY		ALTHA		FRANK	
	gr	ph	gr	ph	gr	ph	gr	ph
NO SIMILARITY	9	16	8	16	10	26	9	16
LOW	10	8	9	7	9	3	18	15
MODERATE	26	27	25	29	56	51	39	35
HIGH	54	49	58	48	25	21	34	35

The average proficiency readers, Faust and Tony, most frequently produce miscues with high graphophonemic similarity whereas the low proficiency readers, Altha and Frank, most often produce miscues with moderate similarity. Goodman (p.p. 45-46) notes that over time the slow readers show a more continuous pattern of increasing graphophonemic similarity than do the average readers; she suggests that the average readers may be experiencing a 'tapering off' in the development of the use of this cueing system, while the slow readers' behavior may not have yet stabilized. Another developmental trend is for the use of cues from all parts of the text word as reading proficiency increases. The slow readers tend to focus on word beginnings and middles while the average readers make use of graphic and phonemic information from all parts of the text words.

Although she does not discuss developmental patterns, Goodman notes an important relationship between the acceptability of miscues and their graphophonemic similarity. For all subjects the trend is for miscues with no graphic similarity to have a greater percent of semantic acceptability than the average for all miscues; miscues with a single graphic difference, on the other hand, show a less than average percent of semantic acceptability. For these young readers, then, miscues with no graphic similarity tend to be more semantically acceptable than close proximity miscues. The same pattern holds for graphic similarity and syntactic acceptability but the relationship between phonemic similarity and the acceptability categories is not as strong. The data lead Goodman to conclude that for these readers, the more difficult the material (as seen through success in producing syntactically and semantically acceptable structures), the heavier the reliance on graphic and phonemic information in the text.

Non-word miscues provide the best illustration of the relationship between high graphophonemic similarity and semantic acceptability. These miscues, of course, are never semantically acceptable and, as Table 27 below shows, they have greater similarity to text words than miscues in general. Since very few non-words have no similarity to the text material, the table compares only moderate and high graphophonemic similarity. The data indicate that, in addition to the higher-than-average graphic and phonemic proximity of non-words, these miscues also typically have higher phonemic than graphic similarity, unlike the general inventory of all miscues; see Table 26. There is a developmental trend for increased graphophonemic proximity for non-words as a function of higher reading proficiency; this pattern may result from the average readers' willingness to 'sound out' unfamiliar words.

TABLE 27
COMPARISON OF GRAPHOPHONEMIC SIMILARITY FOR
GENERAL MISCUE DATA AND NON-WORDS ONLY¹⁷

	FAUST		TONY		FRANK	
	gr	ph	gr	ph	gr	ph
ALL MISCUES:						
moderate similarity	26	27	25	29	39	35
high similarity	54	49	58	48	34	35
NON WORDS ONLY:						
moderate similarity	29 (+3)	17 (-11)	33 (+8)	12 (-15)	50 (+11)	10 (-25)
high similarity	71 (+17)	82 (+33)	66 (+8)	85 (+37)	25 (-9)	60 (+25)

5.2.3 Syntactic and Semantic Cueing Systems: In her study of word-for-word miscues and their relationship to grammatical structure and meaning in the text (grammatical function and semantic word relationship) as well as with her investigation of transformations caused by miscues, Goodman broadly summarizes her findings. The following discussion is based on that summary. For the categories of syntactic and semantic acceptability and change, Goodman provides more detailed data which, in turn, allow for specific treatment of these categories.

Grammatical Function and Semantic Word Relationships

The word-for-word substitution miscues of the Goodman readers are more closely related syntactically than they are semantically; they tend to be variant forms of the text word such as happy for happily, broke for broken, or give for gave, or the substitution of one function word for another. Generally there is little or no semantic relationship between the miscues and the text items; when a semantic relationship is present, it usually involves the substitution of a similar name. The grammatical functions of the miscues, on the other hand, are most frequently similar to that of the expected response: 83% and 80% for the average readers and 61% and 54% for the slow readers for all word-for-word substitution miscues. The following example illustrates this disparity between successful matching of the semantic content and the grammatical structure of the text sentences.

TEXT: We have to buy feed for our horse.

READER: We have to buy rugs for our house. (Goodman 1972:47)
Obviously the substitutions radically change the meaning of the text sentence, nonetheless, they do preserve the grammatical form of the expected response.

Transformations

Like readers in other miscue studies reviewed, the Goodman readers most often produce miscues which result in some type of transformation of the text material. The most common type of transformation is that which causes a change in the deep structure of the expected response. Goodman does not report on the syntactic and semantic acceptability of the transformed structures produced by the miscues; it is not possible then to study any changes in acceptability as proficiency increases. She does, however, note a developmental trend in the readers' use of optional transformations, 5% and 4% for the average readers as compared to .5% and 2% for the slow readers.

Syntactic and Semantic Acceptability

Table 28 summarizes the data on how the readers of the Goodman study are answering the questions "Does what I am saying sound like language?" and "Does it make sense?" As with other miscue studies, the categories of syntactic and semantic acceptability are considered together to facilitate comparisons between the use of the two cueing systems.

In her investigation of syntactic and semantic acceptability of the subjects' miscues, Goodman finds a few general features of both the low and average readers as well as several developmental changes which accompany increased proficiency. These changes can be found for the individual readers over time and in comparisons between the low and average readers. The first general observation which emerges from the data is that all four readers are more successful with syntactic than with semantic information in their reading. A comparison of the percentages of syntactic and semantic acceptability of the miscues within the

TABLE 28

SYNTACTIC AND SEMANTIC ACCEPTABILITY IN %

	FAUST		TONY		ALTHA		FRANK	
	syn	sem	syn	sem	syn	sem	syn	sem
IN PASSAGE	63	36	69	46	50	36	44	26
IN SENTENCE	.4	7	.2	4	3	12	.6	15
WITH AFTER	2	2	2	2	4	3	5	6
WITH PRIOR	20	23	17	20	13	16	21	21
NO ACCEPTABILITY	15	32	12	29	30	34	29	32

total passage illustrates this observation: 63-36; 69-46; 50-36; 44-26 for the four readers. The other general feature that Goodman observes is with the rank order of percentages for the various subcategories; these orders are the same for each of the subjects, both for syntactic and semantic acceptability suggesting that the readers are fairly uniform in their response to syntactic and semantic cues available to them in the reading.

Goodman also notes a number of developmental trends in the subjects' reading behavior with respect to syntactic and semantic acceptability. First, increased proficiency means a larger percentage of syntactically acceptable structures in the whole passage; the average readers produced 63% and 69% fully acceptable structures compared to 50% and 44% for the slow readers. The same general trend is evident in the data for semantic acceptability within the entire passage, although Faust, with his 36% acceptability is equal in his success with reproducing the textual meaning to Altha, a slow reader. However, Goodman points out that Faust was reading material considerably more difficult than any of the other readers, a fact which might account for his somewhat low score for full semantic acceptability. In any case, the data indicate that for these readers, increased proficiency means equal, if not increased, success in dealing with semantic cues in the text: 36% and 46% for the average readers and 36% and 26% for the slow readers.

A second developmental pattern evident in the analysis of the Goodman subjects' readings concerns the subcategory "No Acceptability." For these young readers the percent of miscues with no syntactic acceptability decreases as a function of increased reading proficiency. This trend is clear both in an examination of the two proficiency

levels--average--15% and 12%; low--30% and 29%--and in the individual data for each subject from session to session. In each case, as proficiency increases, there is a corresponding decrease in miscues which are syntactically unacceptable. The pattern for semantic "No Acceptability" is not as clear. As with full acceptability, the difference between the average and slow readers points to, at most, a slight decrease in miscues that are semantically unacceptable as a function of increased proficiency: 32% and 29% for the average readers; 34% and 32% for the slow readers. The session-to-session data, while they do show the same slight tendency for the average readers to have fewer "No Acceptability" miscues than the low proficiency readers, do not present any clear pattern for the subcategory of semantic acceptability.

Goodman also reports that the average readers are generally more flexible in their ability to use syntactic information in the text than are the low proficiency readers. Specifically, the two average readers are more likely to maintain syntactic acceptability even when the miscues are not semantically acceptable. Non-word miscues, which always result in semantically unacceptable structures, provide the clearest example of this flexibility in preserving grammaticality in the face of a loss of meaning. As mentioned above, non-words can preserve the syntactic structure of a sentence through inflection and intonation; Table 29 clearly shows that the two average readers, Faust and Tony, are vastly more successful in producing syntactically acceptable structures containing non-words than is Frank, the one low proficiency reader who produced non-word miscues (Altha did not produce any non-words). The developmental trend for non-word miscues of these young readers is for an increase in

syntactic acceptability and a corresponding decrease in no syntactic acceptability. This pattern is especially interesting in light of the fact that there is an increase in the number of non-word miscues as a function of increased reading proficiency for the readers of this study. The total developmental picture for the non-words of the young readers, then, looks like this: with increasing proficiency there is a greater number of non-words and a simultaneous increase in the syntactic acceptability of structures resulting from these non-word miscues.

TABLE 29
PERCENT OF NON-WORDS IN RELATION
TO SYNTACTIC ACCEPTABILITY

	FAUST	TONY	FRANK
Syntactically Unacceptable	15	3	40
Syntactically Acceptable in Total Passage	83	97	60

Syntactic and Semantic Change

For those miscues judged to be fully syntactically and semantically acceptable for the Goodman readers, there is generally very little change to either the structure or the sense of the text; see Table 30. The data also illustrate the developmental trend for both syntactic and semantic change: with increased proficiency, movement towards still less change. In addition to this developmental pattern, the greater

stability of syntactic features is once again evident in the "Little or No Change" subcategory; the figures for little or no syntactic change are 80%--79%--70%--69% compared to 74%--77%--54%--49% for little or no semantic change.

TABLE 30
PERCENT OF SYNTACTIC AND SEMANTIC CHANGE

	FAUST		TONY		ALTHA		FRANK	
	syn	sem	syn	sem	syn	sem	syn	sem
Unrelated	0	.4	0	0	0	1	2	3
Major Change	5	5	3	3	9	7	6	21
Minor Change	15	21	18	20	21	39	23	27
Little or No	80	74	79	77	70	54	69	49

The following summary recapitulates the findings from the Goodman study on the use of the cueing system in language in the oral reading of the four subjects under study.

Intonation: The expected intonation pattern is found in at least 88% of the miscues of the readers in the Goodman study, indicating that intonation presents no serious problem. No clear developmental pattern related to intonation emerges from the data.

Graphophonemic Cueing System: The following general feature describes the use of the graphophonemic cueing system for the Goodman readers. First, all readers in all sessions produce miscues which both look like

and sound like the expected response. Second, graphic proximity proves to be higher than phonemic proximity for all readers. Another general observation emerging from the study of this cueing system is that for those miscues which have no graphic similarity, semantic and syntactic acceptability is higher than for all miscues taken as a group; on the other hand, the opposite relationship holds for miscues which show only a single graphic difference: lower than average acceptability. For each of these young readers, non-word miscues have greater similarity to text words than miscues in general. A final general feature of the oral reading of Goodman's subjects is the tendency for all readers to rely more heavily on graphophonemic information as the difficulty of text material increases.

The following developmental patterns also emerge from the study of the use of the graphophonemic cueing system by the readers in the Goodman study. With higher level reading proficiency, these readers produce miscues which have increasing similarity to the text words; this pattern holds both from low to average proficiency and for all readers over time, although Goodman notes that the slow readers' movement towards greater graphophonemic similarity is more consistent. Increased proficiency for the Goodman readers also means increased ability to make use of graphic and phonemic information from all parts of text words, not only the beginnings and middles, as is the case with the low proficiency readers.

The non-word data point to another developmental trend in the oral reading of these subjects: increased graphophonemic proximity as a function of higher reading proficiency. This pattern might well be part of a larger trend that Goodman notes; as the readers move toward greater

proficiency, they go through stages in their strategies for handling unfamiliar words encountered in the text. As the lowest level of proficiency, they tend to simply omit words they do not know (a strategy which frequently results in unacceptable structures); later the readers attempt to 'sound out' unfamiliar words, a technique leading to an increase in the number of non-word miscues. The 'sounding out' strategy continues with the readers getting progressively closer to the expected response as they become more proficient, hence the developmental pattern noted above--increased graphophonemic proximity of non-words as reading proficiency increases.

Syntactic and Semantic Cueing Systems: These general observations can be made about the Goodman subjects' use of syntactic and semantic information available in the text: both the slow and average readers are more successful in their use of syntactic cues than semantic cues. This can be seen on the word-for-word level, where the percentage of words with the same grammatical function is much higher than the percentage of words that have a semantic relationship to the expected response, and on the sentence level where structures which result from miscues are syntactically acceptable at least one and a half times as frequently as they are semantically acceptable. The other general feature of these readers' miscues is that they usually transform the structures of the text sentences.

The following developmental patterns also emerge from the study of syntactic and semantic cueing systems. For the Goodman readers, increased reading proficiency, as seen in the differences between slow and average readers and in the changes for any one of the readers over time, means:

--a rise in the use of optional transformations

- increases in the syntactic acceptability of structures that result from the miscues.
- stabilized or slightly increasing semantic acceptability that results from the miscues.
- steady decreases in the percent of structures with no syntactic acceptability.
- slight decreases in the percentage of structures with no semantic acceptability.
- greater flexibility in handling syntactic information; ability to maintain syntactic acceptability even when meaning is lost.
- an increase in the production of non-word miscues (and a corresponding drop in the overall number of omissions).
- an increase in the syntactic acceptability of non-word miscues (accompanied by a decrease in non-words with no syntactic acceptability):
- a movement towards less change for those miscues judged syntactically and semantically acceptable.

5.3 Comparison of the Studies

A comparison of the two groups of readers with respect to their use of the cueing systems in language shows that while there are a few differences in their behavior, for the most part, their oral reading is remarkably similar. This observation holds especially true for developmental changes that accompany increases in reading proficiency. The following summary directly compares the reading behavior of the two groups of subjects.

5.3.1 Intonation: A general statement can be made about the readers from both groups: no matter what the proficiency level, they generally produce acceptable intonation. Those intonation miscues that did appear did not, for the most part, seem to interfere with the reading process. The proficient use of intonation patterns by all readers (both studies) indicates that they are correctly anticipating the structures and

intended meaning of the author. The information in the text that allows them to do this comes via the graphophonemic, syntactic, and semantic cueing systems.

Constance Weaver (1980) explains how the various cues interact in proficient reading:

. . . we bring to bear our entire storehouse of personal knowledge and experience. We use not only the syntactic and semantic cues available in the text, but also our entire experience with language and with life . . . In order to identify a word [or, as in truly efficient reading, the meaning], proficient readers first use syntactic and semantic knowledge and cues to PREDICT what is coming next . . . we subconsciously narrow down the possibilities . . . We initially TEST our prediction(s) . . . by using grapho/ phonic cues . . . Finally we use syntactic and semantic cues to CONFIRM our tentative identification . . . or to CORRECT if we have made a miscue that doesn't fit with the following context. (p.p. 80-81; emphasis, hers; parenthesis, added).

As this psycholinguistic description of the reading process makes clear, the readers' use of the graphophonemic, as well as the syntactic and semantic cueing systems, in large measure determines the success of their reading.

5.3.2 Graphophonemic Cueing System: Both groups of readers consistently produce miscues which bear graphic and sound relationship to the expected response. A comparison of the graphic and phonemic similarity of the miscues and the text words indicates that both groups of readers are making use of graphic information to a greater extent than phonemic information. The two groups of readers share a number of other features in their oral reading: for miscues with no graphic similarity a higher than average (for all miscues) percent of semantic acceptability, and for miscues which differ only by one graphic feature, a lower than average percent of semantic acceptability (the same pattern holds for syntactic acceptability for the Goodman readers); Figures 18 and 27 above illustrate this point. The non-word data from both groups also show that

these miscues are, in both cases, very similar to the expected response.

A final observation which can be made about each of the groups of readers involves increasing reliance on graphophonemic cues as text material becomes more difficult, as with the second of the two readings in the present study. The young Goodman readers and their foreign counterparts in the current investigation produce miscues with greater graphic and phonemic similarity to the expected response when the reading becomes more difficult, suggesting that they share a strategy of relying more heavily on graphophonemic information when problems with the text arise. As noted above (in 5.2) the increased reliance on graphophonemic cues is more dramatic for average and high proficiency readers of the current investigation than for the low group.

In addition to these general features, the two groups of readers have a number of developmental patterns in common. First, for both increasing proficiency means greater graphophonemic similarity of the miscues to the expected response. A mark of higher reading proficiency in either study is the ability to use cues from all parts of the graphic display; the lower proficiency readers in both studies tend to produce miscues which reflect use of cues occurring only at the beginnings and in the middle of text words. The developmental pattern is towards this increased flexibility in using graphophonemic cues from all parts of words. Still another trend which accompanies heightened reading proficiency for both groups of readers involves non-words: increases in phonemic similarity. This trend might be indicative of the higher proficiency readers' willingness to guess at unfamiliar words, to 'sound out' those items in the text that are not recognized: the 'sounding out'

would account for the increases in phonemic similarity. The Goodman readers also show increases in graphic similarity of non-words to text words as a function of higher reading proficiency, confirming the trend for general increases in reliance on graphophonemic cues as material becomes more problematic.

The readers of the current investigation also demonstrate another developmental pattern in the use of graphic and phonemic information from the text. As proficiency increases for these readers, so does the percentage of semantic acceptability of miscues which differ from the expected response by one graphic unit. This pattern suggests that the readers are increasingly conscious of making sense out of what they are reading. Since the Goodman study does not analyze this particular pattern, no comparison can be drawn.

As overview of the use of the graphophonemic cueing system by the two groups of readers points to a pattern of increasingly finer graphic and phonemic discrimination in the miscues as reading proficiency increases for both groups of readers. However, these results should not be interpreted to mean that this pattern will continue until letter-perfect reading is realized. Miscue studies of highly proficient readers indicate that there is normally a leveling off of the trend. Goodman suggests that perhaps beyond a certain point of discrimination what characterizes a proficient reader is the ability to judge when use of these cues is appropriate.

Two examples illustrate the notion that continual refinement in the use of graphophonemic cues alone is not the mark of increased reading proficiency. First, in the present study, the data indicate that as reading material becomes more difficult for the readers, they tend to rely

more heavily on information from the visual display (see above, p.111 for discussion). The low group readers do not vary their use of graphic and phonemic information much, despite the fact that both an independent measure (graded difficulty) and their own comprehending scores suggest that the material is more difficult. On the other hand, the medium and high group readers show a steep increase in the use of graphic and phonemic cues (that is, their miscues more closely resemble and sound like the expected response). This increase points to a flexible strategy on the parts of these readers; Goodman calls this a 'judgment' strategy--the readers seem to use good judgment in deciding when the increased use of graphic and phonemic cues is appropriate.

Another good example of a 'judgment' strategy in the use of grapho-phonemic information from the text occurs in both studies in relation to the semantic acceptability of those miscues which have no graphic similarity to the expected response. A proficient reader is able to reduce dependence on the visual display in proportion to his use of information from the other cueing systems (the syntactic and the semantic); for both groups of readers, a sign of increasing proficiency is the ability to make this type of judgment--to rely on the other cueing system rather than solely on the graphophonemic. The following examples from the current investigation illustrate this point. A low proficiency reader produced the miscue

They rose like windblown balls of ^{BLUEF} fluff.
which varies from the expected response by a single letter yet produces an utterance which makes no sense. A high group reader produced a miscue which although it has no graphic (or phonemic) similarity to the text word nonetheless preserves the sense of the author's sentence:

^{BUT}
Now let me think . . .

At this point in the story the shopkeeper is taken aback with his strange customer's demands for a pet; the readers use of but here captures, maybe better than the author's now, the shopkeeper's fumbling attempt to pacify the stranger. When readers make miscues of this type, it is clear that they have relied very little, if at all, on the visual information of the text. A sign of proficiency for both groups of readers is the ability to make this type of judgment about the use of graphophonemic cues in the text.

As the above examples indicate, those miscues which result from use of syntactic and semantic cueing systems in addition to the selective use of graphophonemic cueing system, are most likely to make sense. Paul Kolars takes this observation further: "reading", he concludes, "is only incidentally visual" (Kolars 1969). An indication of increased proficiency for the Goodman readers and the readers of the present study is the recognition of the importance of the syntactic and semantic cueing systems in their reading.

5.3.3 Syntactic and Semantic Cueing Systems: In their use of syntactic and semantic cues available in the text, the two groups of readers have a couple of common features: First they are more successful with their use of syntactic cues than with semantic cues; this translates roughly to mean that the miscues of both groups more frequently sound like language than they make sense. Second, they transform the language of the text more often than not when they produce miscues. In both of these aspects, they are like subjects of other miscue studies. The foreign readers differ from their native counterparts, both in the Goodman study and in other miscue studies reviewed, in that they tend to

produce more garbled structures in their miscues. It is quite possible that the frequency of lost or garbled structures in the foreign readers' miscues results from the subjects' unfamiliarity with the English language.

The following developmental patterns also emerge from the study of the use of the syntactic and semantic cueing systems by the two groups of readers. With increasing reading proficiency, the readers demonstrate these changes in their miscue behavior. First, they tend to use more optional transformations which suggests that they are interested in how the language sounds. Second, the readers produce a higher percentage of syntactically and semantically acceptable miscues. The pattern of increase of semantic acceptability is not as clearly defined for the Goodman readers, but nonetheless, the general trend is in the same direction as that for syntactic acceptability--towards increases as a function of increased proficiency. Third, they show more flexibility in handling syntactic structures; specifically they are able to maintain syntactic acceptability even when meaning is lost. The clearest example of this developmental trend is with the production of non-word miscues. For readers in both groups, these non-word substitutions, which are never semantically acceptable, show increasing syntactic acceptability as reading level increases. Finally, for those miscues which have been judged syntactically and semantically acceptable the developmental movement is towards increasingly smaller amounts of change to the grammatical structure and meaning of the text.

A few other developmental patterns come forth from the current investigation: an increase in syntactic and semantic similarity to the text (as seen through the analysis of grammatical functions and semantic

word relationships) accompanies greater reading proficiency, the gap between successful use of grammatical and meaning cues narrows as reading level increases, and the percentage of syntactically and semantically acceptable structures resulting from sentence-transforming miscues increases as a function of rising proficiency. These areas are not treated in the Goodman research and are of interest here primarily because they reinforce the developmental trend that consistently emerges from each of the areas of investigation discussed above; in each case, the evidence points to a clear pattern--higher proficiency means increases in the syntactic and semantic acceptability of the miscues. In a sense the results of the entire study of the syntactic and semantic cueing systems can be summarized in terms of the readers' success in answering the central question involved in reading: "does what I am saying sound like language?" and "does it make sense?" For the Goodman readers and for the readers of the present study, increasing reading proficiency can be traced directly to the readers' concern for producing language that both sounds like language and makes sense.

A final focus of a Taxonomy Analysis is the readers' correction strategy. The next chapter takes up the study of when the readers correct and what can be learned from these corrections.

CHAPTER VI

CORRECTION STRATEGY

6.0 Introduction

Perhaps one of the most revealing pieces of information provided by a Taxonomy Analysis is what readers do once they have produced miscues. In a psycholinguistic view of reading (see above, Chapter 2 for discussion) the reader, after sampling the text and predicting on the basis of that sampling, "leaps to the deep structure and meaning without using all the information available . . . " (Kenneth Goodman 1969:12). Sometimes, even for very proficient readers, the process breaks down; the reader fails to understand the author's message. In oral reading this breakdown in communication is often signalled by the production of miscues. Of course, not all miscues cause a disruption to the meaning of the text, and frequently readers are not even aware of these miscues. If the readers are aware of their miscues, they have two options: they can continue on in the text (perhaps silently correcting) or they can regress and attempt to correct. The readers' corrections of oral reading miscues provide evidence of their ability to supply their own feedback; in addition, these corrections offer valuable insight into how the readers are processing the language of the text. Observation of when a reader chooses to correct and the success of those attempts allows a researcher to glimpse the reading process in action.

When readers produce miscues they can continue on--the miscues are uncorrected--or they can regress and correct. At times the readers try

unsuccessfully to correct their miscues; in a few cases readers actually abandon a correct response and regress to produce a miscue. The following examples illustrate correction strategies.

0. Miscue not corrected.

"You mean some ^{WIND} kind of a pet?"

"WHAT DO YOU WANT?"

The scientist wished he had asked what the man wanted before he had let him in.

Notice that the observation that a miscue is not corrected says nothing about the syntactic or semantic acceptability of that miscue. The first uncorrected miscue is not grammatical nor does it make sense. On the other hand, the second both sounds like language and retains the author's meaning.

1. Miscue corrected.

He wasn't bitter like he had been years ago when ^Che first learned of his son's condition.

But then he remembered that he didn't want to talk with ^CNiemand about the arms he was working on . . .

In the first example the reader corrects a miscue which disrupts the flow of the sentence. In the second, however, no such disruption results from the miscue; the reader corrects the miscue despite the fact that with the miscue intact the sentence is grammatical and makes complete sense in the story.

2. Unsuccessful Attempt at Correction.

... some people might use these weapons to ^{UC}harm others.

^{UC}2. HERMAN
1. HERMAN

"But Dr. Graham, what will happen to humanity . . .?"

Neither of these attempts yields a successful correction; nevertheless they are different. In the first sentence, the reader finally captures

the sense of the author's meaning although not the exact word. The use of "Herman" for "Graham" in the second, however, causes a major change to the story, coming, as it does, late in the story when the characters have already been well-established.

3. Correct Response Abandoned.

He owned a ^{ac} ^{PIT} pet shop.

^{ac} ^{NO} "Now why," Mr. Purcell muttered, "did he do that?"

In both of the above cases, the readers initially produced a correct response; they then regressed to produce a miscue.

6.1 The Present Study

Tables 31 and 32 summarize the correction data from the present investigation. In the first (Table 31), the totals for each of the subcategories described above are presented; Table 32 illustrates the readers' correction behavior with respect to the subcategories of Syntactic and Semantic Acceptability.

TABLE 31
PERCENT OF MISCUES CORRECTED

	HIGH	MED	LOW
CORRECTED	23	15	11
UNSUCCESSFUL ATTEMPT	4.4	4.5	3.3
ABANDONED FORM	2.0	.4	1.2
NO CORRECTION	70	80	84

TABLE 32
 PERCENT OF CORRECTION FOR SUBCATEGORIES OF
 SEMANTIC ACCEPTABILITY*

	HIGH		MED		LOW	
	syn	sem	syn	sem	syn	sem
ACCEPTABLE IN WHOLE PASSAGE	23	15	14	11	8	5
ACCEPTABLE WITH PRIOR	28	26	19	18	16	16
UNACCEPTABLE	22	23	17	13	16	12

*The subcategories "Acceptable with Following" and "Acceptable in Sentence" do not appear because the actual number of cases for each is so small that percentages would be misleading.

Three general observations emerge from the data. First, all readers, at all levels, correct at some points; that is, readers at all proficiency levels have some type of correction strategy. Second, when the readers do correct, they are generally successful. As Table 31 indicates, only 3.3%--4.5%--4.4% (low to high) of all miscues fall under the subcategory of unsuccessful correction attempt; a full 71%--75%--79% (again low to high) of all attempted corrections are successful. The data also point to a third general feature of the correction behavior of the readers of the present study: they are selective. This selectivity is evident in both the overall correction figures and in the figures on syntactic and semantic acceptability and correction. As the low percentages (1.2%--.4%--2.0%) for abandoned forms indicate, these readers know when to correct, seldom regressing to change responses that are correct. In addition, readers at all levels most frequently correct those

miscues which result in structures that are syntactically and semantically acceptable only with the prior portion of the text. This type of selective correction behavior suggests that all readers are using some form of self-feedback in their corrections--when they find that their predictions about the grammar and meaning of the text are wrong, the readers regress and find additional language cues to aid them in producing more acceptable predictions.

Final evidence that these readers know when to correct comes from a comparison between percentages of corrections for those miscues which produce syntactically and semantically acceptable structures and those which result in unacceptable structures; see Table 32. The subjects of this investigation are more likely to regress and correct those miscues which cause unacceptable structures than those which make sense and sound like language. This tendency is especially apparent for the low group readers who correct unacceptable structures fully twice as often as acceptable structures; 8% compared to 16% for syntactic acceptability and 5% compared to 12% for semantic acceptability.

A number of developmental patterns also emerge from the study of correction behavior in the readers of the current investigation. Higher proficiency means an overall increase in the number of corrections for these readers--11%--15%--23%. Although other miscue studies point to an eventual levelling off of this trend as proficiency increases (perhaps as a result of a movement to silent reading [Kenneth Goodman and C. Burke 1969]) no such pattern can be found in the present study. It might well be the case that even the high proficiency readers have not yet reached the level at which this stabilizing trend is apparent; another possible explanation is that these readers have been conditioned

by their experience in the foreign language classroom to strive for letter-perfect oral reading. In either case, the pattern is clear--more frequent corrections with increased proficiency. An increase in the percentage of successful corrections--71%--75%--79%--accompanies the general increase in the volume of corrections which marks higher reading proficiency. The developmental pattern, then, is for both more frequent and more successful corrections as a function of increased proficiency.

As Table 32 shows, the general increase in overall corrections accompanying higher proficiency translates into increases for the three subcategories of syntactic and semantic acceptability. For each there is a clear pattern of a higher percentage of corrections as proficiency level increases. For example, in the subcategory "Acceptable in Whole Passage", the trend from low to high is 8%--14%--23% for syntactic acceptability and 5%--11%--15% for semantic acceptability. The subcategories "Acceptable with Prior" and "Unacceptable" illustrate the same pattern of increasing corrections with higher proficiency. For the readers under study, then, an obvious indicator of increasing proficiency is the more frequent appearance of corrections, no matter what the acceptability of the structures produced by the miscues.

One effect of this higher percentage of corrections of all miscues is the frequent appearance of over- or unnecessary corrections in the higher proficiency readers. The low group readers correct only 8% of those miscues which result in syntactically acceptable structures and a mere 5% of those producing semantically acceptable structures in the whole text. The high proficiency readers, on the other hand, correct 23% of their miscues which produce fully grammatical structures and 15% of those resulting in structures which preserve the meaning of the text.

The following examples illustrate overcorrections typical of the high group readers.

② 2. I will
1. I will
"I'll take them." He laid his five dollars on the counter.

"That noise . . . ③ doesn't it get ④ to you?"

I understand your argument against the arms ⑤ I ⑥ am^{work} working on . . .
In each case, the structures which result from the miscues are both grammatically and semantically acceptable, but it seems that the increased tendency to correct extends equally to these miscues as to those which cause a disruption to the language and sense of text sentences. It is quite possible that these overcorrections can be traced to reading instruction; certainly readers who have had reading instruction which focuses on 'letter-perfect' oral production could be expected to overcorrect. Another likely explanation is that increased reading proficiency results in a number of corrections of all types (including unnecessary corrections of acceptable structures). A later change in correction behavior might be heightened selectivity in corrections of these miscues. The high group readers may simply not have reached the point where this type of selectivity is a feature of their reading. If these changes do in fact occur, low and medium proficiency readers would show increases in unnecessary corrections, and high group readers, a gradual tapering off in this kind of correction behavior. A comparison of low and medium readers' overcorrections (see Table 32) indicates that increased proficiency for these readers does not result in more overcorrection: low group readers correct syntactically acceptable structures 8% of the time and semantically acceptable structures 5% compared to 14%

(syntactic) and 11% (semantic) for the medium group readers. The high proficiency readers' tendency to correct structures that are already syntactically and semantically acceptable must also be considered in light of the groups' pattern of more frequent corrections as the degree of change to text structures increases (see discussion below). Many of the overcorrections may represent the readers' reaction to the degree of change to text material rather than the acceptability of structures produced.

A final pattern to emerge from the study of correction strategy involves syntactic and semantic change. Table 33 summarizes the figures for syntactic and semantic change for those miscues judged acceptable

TABLE 33
PERCENT OF CORRECTION FOR SUBCATEGORIES OF
SYNTACTIC AND SEMANTIC CHANGE

	HIGH		MED		LOW	
	syn	sem	syn	sem	syn	sem
UNRELATED	0	0	0	0	0	0
MAJOR CHANGE	56	58	26	22	0	14
MINOR CHANGE	21	35	14	14	17	20
LITTLE OR NO CHANGE	6	11	10	10	9	8

either within the sentence or the whole text. It should be remembered that very few miscues coded under this category cause major changes or could be judged as unrelated to the text grammar or meaning (see above, Table 24). Consideration of only "Minor Change" and "Little or No

Change" shows that all readers tend to correct more frequently when the degree of change to the expected response increases. This selective use of correction strategy also reveals a developmental pattern: as proficiency increases, there is more likelihood of correction as change to the structure or meaning of the text becomes greater. For example, the low group readers, whose acceptable miscues produce a minor syntactic change 23% of the time and a minor semantic change 20% of the time, correct 17% and 20%, respectively, of those miscues. The high group readers' acceptable miscues result in minor syntactic change 25% and minor semantic change 23% of the time. The percent of correction of these miscues is higher for the more proficient readers (21% syntactic and 35% semantic) suggesting that increased proficiency means greater sensitivity to changes in grammatical structure and meaning in the text.

To summarize: study of the correction strategies of the three proficiency groups in the current investigation suggests both general features of correction behavior for all groups and several developmental changes that appear to be related to the increasing proficiency levels of the readers. The first general observation about the correction behavior of the readers is that they all correct at some point; they all appear to have some type of correction strategy. Second, the readers are usually successful in their corrections (at least 71% for all readers). Finally, readers at all proficiency levels are selective in their use of correction: they seldom correct what is already acceptable; they most consistently correct those miscues which result in structures which are syntactically and semantically acceptable only with the prior portion of the text; and, these readers are more likely to correct those miscues

which are unacceptable than those which are fully acceptable.

A number of developmental patterns also emerge from this investigation. For subjects of the current study, increases in reading proficiency mean a larger number of correction of all types; the readers increase their overall rate of correction--11%--15%--23%--low to high. This increased volume of corrections is also evident in each of the subcategories for syntactic and semantic acceptability where the higher proficiency readers consistently show a larger percentage of corrections. Increased overall success in corrections accompanies the greater volume of corrections for high proficiency readers. Not all of the high group's corrections are necessary, however, since many of the structures resulting from their miscues are fully acceptable (see above discussion); another feature, then, of increased proficiency is the overuse of corrections. A final developmental trend involves corrections of miscues judged syntactically and semantically acceptable. For these miscues, increased proficiency means greater likelihood of correction as the degree of change increases.

6.2 The Goodman Study

The correction behavior of the Goodman readers, summarized in Tables 34 and 35, points to the general correction strategies of the four young readers and the developmental patterns characterizing increased reading proficiency. The data show that each of these readers attempts corrections at some point; each has some type of correction strategy at work. Both the average readers (Faust and Tony) and the slow readers (Altha and Frank) are usually successful in their corrections as witnessed by the low figures for unsuccessful corrections--3% and 5% for the average

readers; 4% and 5% for the slow readers--and by the percentages of successful attempts--a full 85% successful corrections for the average readers and 73% and 76% for the slow readers.

TABLE 34
PERCENT OF MISCUES CORRECTED

	FAUST	TONY	ALTHA	FRANK
CORRECTED	24	41	14	19
UNSUCCESSFUL ATTEMPT	3	5	4	5
ABANDONED FORM	1	2	1	1
NO CORRECTION	72	52	81	75

TABLE 35
PERCENT OF CORRECTION FOR SUBCATEGORIES OF
SYNTACTIC AND SEMANTIC ACCEPTABILITY*

	FAUST		TONY		ALTHA		FRANK	
	syn	sem	syn	sem	syn	sem	syn	sem
ACCEPTABLE IN WHOLE PASSAGE	15	13	30	31	7	8	12	14
ACCEPTABLE WITH PRIOR	42	39	73	65	33	30	32	31
UNACCEPTABLE	37	25	60	42	15	15	20	19

*The subcategories "Acceptable with Following" and "Acceptable in Sentence" do not appear because the actual number of cases for each is so small that percentages would be misleading.

A final general feature to emerge from the Goodman correction data is the selectivity of the readers in their use of correction strategy. These young readers very rarely abandon those responses which are already correct (1% and 2% average; 1% for the slow readers) suggesting that they are confirming their predictions and providing their own feedback. Moreover, by a fairly overwhelming percentage, the readers most frequently correct those miscues which are acceptable only with prior portions of the text; this type of correction lends further credence to the notion of the readers' providing their own feedback. A third indication of the selectivity of the Goodman readers' use of correction strategy is evident in a comparison of corrections for the subcategories of syntactic and semantic acceptability. As Table 35 illustrates, both the average and the slow readers correct syntactically and semantically acceptable miscues far less often than they do unacceptable or partially acceptable miscues.

The Goodman readers also demonstrate several developmental trends in their correction behavior. First, higher proficiency means an increase in the overall number of corrections. The slow readers, Altha and Frank, correct 14% and 19% respectively of their total miscues compared to 24% and 41% for the average readers, Faust and Tony. Goodman relates these figures to earlier data on the same subjects and concludes that the slow readers are developmentally moving towards a greater number of corrections; Faust's correction behavior is stabilizing; and, Tony appears to attempt an exact rendition of the text. Increasing success with corrections--85% for the average readers compared to 73% and 76% for the slow readers--accompanies the greater number of corrections

for the average readers. The complete developmental picture is this: more frequent and more successful corrections as a function of higher reading proficiency for the four young readers of the Goodman study.

Table 35 shows this tendency of the average readers to correct more frequently than the slow level readers; for each of the subcategories of syntactic and semantic acceptability, Faust and Tony regress and correct more regularly than Altha and Frank. For the subcategory of unacceptable structures, Goodman notes a further developmental pattern. Not only does the overall percentage of corrections increase as a function of higher proficiency, but the concern for preserving syntactic acceptability increases as well. Notice that the slow readers correct syntactically and semantically unacceptable structures almost equally; the average readers, while they correct semantically unacceptable miscues more frequently than the slow readers, seem more interested in maintaining syntactic acceptability in the face of possible meaning loss. This trend corresponds to those noted earlier (see above, Chapter 5) which indicate that a sign of increasing proficiency is the ability to preserve syntactic acceptability even when semantic acceptability is lost.

The pattern for overcorrection is unclear for the Goodman readers. Faust, an average reader corrects acceptable structures about as often as Frank, a slow reader; the other slow reader, Altha regresses and corrects less frequently, and Tony corrects both syntactically and semantically acceptable miscues at least twice as often as all other readers. This extensive overcorrection reinforces Goodman's conclusion that Tony attempts to reproduce the text exactly. It is quite possible that Tony's intense concern for letter-perfect reading results from

reading instruction which places great emphasis on this type of oral behavior.

Table 36 represents a final developmental pattern emerging from the Goodman correction data: for those miscues judged syntactically and semantically acceptable, a trend towards more frequent corrections as the degree of change increases. As Table 30 above indicates, most of the changes for syntactically and semantically acceptable miscues are relatively minor. Nonetheless there is a pattern of higher proficiency readers correcting more frequently when the amount of change to the grammar or meaning of the text increases.

TABLE 36
PERCENT OF CORRECTION FOR SUBCATEGORIES OF
SYNTACTIC AND SEMANTIC CHANGE*

	FAUST		TONY		ALTHA		FRANK	
	syn	sem	syn	sem	syn	sem	syn	sem
MINOR CHANGE IN PHRASE	20	28	22	38	13	0	13	0
PERSON, TENSE CHANGE	23	12	41	31	7	8	30	15
FUNCTION WORD CHANGE	21	13	32	22	18	9	13	21
NO CHANGE	12	13	30	32	5	14	9	11

*Only the subcategories for minor change and no change are represented here because none of the other subcategories has more than five miscues total for any one of the readers.

An overview of the correction behavior of the Goodman subjects points to at least three general features. First, all readers, no

matter what the proficiency level, have some correction strategy. In addition, the readers are usually successful when they attempt to correct their miscues--at least 73% for all readers. Finally, each of the readers shows selectivity in the use of correction strategies. They almost never regress and abandon correct responses and they most often correct miscues which are syntactically and semantically acceptable only with the prior portion of the sentence. Another measure of this selectivity in correction behavior is the comparative frequency of the readers' corrections of unacceptable and wholly acceptable structures--all readers are more likely to regress and correct miscues which disrupt the syntax and meaning of the text.

Several developmental patterns also come forth from the correction data. Higher reading proficiency for the Goodman readers means: more frequent corrections of all types (for all subcategories of syntactic and semantic acceptability), increasing success in these corrections, greater concern for preserving or restoring syntactic acceptability when miscues destroy both the grammar and the sense of the text and finally, given an acceptable structure, more likelihood of correction of the miscue as the amount of change increases.

6.3 Comparison of the Studies

A comparison of the correction behavior of the Goodman subjects and the readers of the current study reveals that the two groups are quite similar in their use of correction strategies. First, all readers correct at some points and second, they are usually successful in their corrections. But perhaps the most interesting shared feature of these readers' correction behavior is selectivity--readers in both groups

demonstrate that they know when to correct. Evidence of this selectivity emerges both from the study of the overall correction figures and from the investigation of the readers' correction strategies with respect to the subcategories of syntactic and semantic acceptability. These data clearly indicate that there is nothing random about the readers' corrections. The scarcity of abandoned correct responses (for all miscues, averaging only 1.2% for readers of the current investigation and 1.25% for readers of the Goodman study), for example, suggests that the readers are confirming their predictions about the grammar and sense of the text material.

Another measure of this selectivity is the readers' choice of which miscues to correct. As Tables 32 and 35 show, both groups most frequently correct those miscues that are judged acceptable with only the prior portion of the text. This indicates that the readers are sensitive to the sound and sense of what they are reading and are willing to regress and correct when there is a breakdown in either. As Goodman puts it: "If the prediction of the reader is demonstrated to be wrong, as he continues to read, by subsequent clues, he will then reject this prediction and regress for additional language cues in order to produce a more acceptable prediction" (Goodman 1971:65). The following example illustrates this point.

Graham said, "Harry, ^{MY}this is Mr. Niemand."
My is a good guess (prediction) in a number of ways. First, it looks like the text word, with its initial 'm' and in having two letters, and the initial sound is the same. In addition, the miscues makes perfect sense and is grammatical with the part of the sentence which precedes

it; the sentence could be completed from that point--"This is my friend." However, when the reader reaches "Niemand" it becomes obvious that the prediction has been wrong and at that point the reader regresses to find the clues needed to make a more acceptable prediction.

Additional evidence of the selective use of correction strategy is the readers' preference for correcting syntactically and semantically unacceptable rather than acceptable miscues. Both groups are more likely to correct if their miscues disrupt the grammar or meaning of the material, as the following examples illustrate.

He ^{WENT} ~~waddled~~ to the window and stared out.
The miscue preserves the syntax of the text sentence (past tense) and the author's intended meaning. The reader's predictions are confirmed and no correction is attempted. The situation is different in another miscue:

(C) "You mean some ^{THING} kind of pet?"

Here the syntax has been changed--some, an adjective, replaced by some-thing, a noun--and the meaning breaks down. In this case, with the predictions seemingly wrong, the reader regresses and makes the appropriate correction.

One exception to this tendency to correct when the miscues produce syntactically and semantically unacceptable sentences comes with garbled structures (see discussion, p. 117). The readers in both studies usually do not correct when there is a total breakdown in the syntax and meaning of the expected response. The production of garbled passages indicates that the actual process of predicting/confirming fails to function at some points; when this happens, these readers seem

incapable of employing their usual correction strategy of regressing for additional language cues to allow for a better prediction. It is as if the normal process of reading has been altered to such an extent that the readers cannot take advantage of the wealth of cues available to them. The readers seem sensitive to these breakdowns in syntax and meaning, often lowering their voices, rushing through parts of the text, or using question intonation to express their bewilderment. With their usual correction strategy failing them, the readers generally choose to 'plow forward' through these troublesome passages. The following examples, both uncorrected, illustrate the breakdown of structure and meaning.

TO \$DEFOND
But he heard himself dutifully saying "Why--why, how long did it take?"

This reader's voice dropped after himself and grew louder only after the second why.

\$ SWRUNG THE \$STALKEL
The sallow man swung around, and stalked abruptly from the store. Beginning with the non-word swrung, the reader used question intonation in the sentence. In a limited sense, the readers' failures to correct these garbled structures point to a type of selectivity in their correction behavior: the readers appear to know that they have lost the rhythm and the sense of the sentence to an extent where their normal correction strategy might not be fruitful.

As well as providing clear evidence of the systematic nature of the correction behavior of both groups of readers, the data also show that the groups share a number of developmental patterns. Briefly, for both groups of readers increased reading proficiency means more frequent corrections, both in the total inventory of miscues and in each of the

subcategories for syntactic and semantic acceptability (even when the corrections are not really necessary, as with the overcorrections of the high group readers in both studies); more successful corrections; and, given acceptable structures, increased likelihood of correction as the degree of divergence from the expected response increases.

The only real developmental difference to emerge from the study of the correction behavior of the two groups involves the relative concern for restoring syntactic and semantic acceptability for unacceptable miscues. For the readers of the present study, no developmental pattern accompanying increased proficiency is present. The low and medium group readers seem slightly more interested in syntactic acceptability (16% and 17% of syntactically unacceptable structures corrected) than in semantic acceptability (12% and 13% corrected). The high group readers, whose figures for both are somewhat higher, seem equally interested in preserving syntactic and semantic acceptability; they correct 22% of their syntactically unacceptable miscues compared to 23% for semantically unacceptable miscues. The Goodman readers, on the other hand, evidence a clear developmental trend towards greater concern for syntactic acceptability as proficiency increases. The slow readers correct equally for syntactically and semantically unacceptable miscues whereas the average readers show a clear preference for restoring syntactic acceptability--37% and 60% for syntactic compared to 25% and 42% for semantic.

These results should not be interpreted to mean a lack of concern for semantic acceptability on the part of the average readers or as a sign that these readers are willing to sacrifice meaning for form. As

Table 35 (p. 157) illustrates, Faust and Tony are more successful in preserving syntactic and semantic acceptability than either of the slow readers. The average readers' concern for restoring syntactic acceptability, rather than being considered a preference for form over meaning, might more appropriately be seen as an attempt by these readers to use grammar to get to meaning. When the reading process breaks down, readers can regress and search for cues (graphophonemic, syntactic, and semantic) that will aid them making better predictions about the meaning of the text. It has often been noted that graphophonemic information in the text is the least helpful to readers as they attempt to restore lost meaning (see Weaver 1980 for discussion). The readers are essentially left with two choices: use syntactic information or use semantic information. Truly proficient readers undoubtedly use both types of information, but for these younger readers, it might be the case that semantic cues are more difficult to use than syntactic cues. Syntax is, after all, more obviously structured than meaning and even the very youngest readers have almost fully developed grammatical systems. In addition, syntactic structure often reveals meaning or least, limits possible forms of meaning. With their concern for producing oral reading that sounds like real language, that is, that conforms to acceptable grammatical patterns, these average readers are perhaps employing a correction strategy of using form to get to meaning. Their greater success at producing semantically acceptable structures could be taken as evidence that these readers have, in addition to other correction strategies, a strategy for using syntactic information to uncover meaning. This type of correction behavior--preserving grammar even when

(or maybe because) meaning is lost--might not be possible for lower proficiency readers, who demonstrate less flexibility in handling textual cues as a way to comprehend meaning.

The developmental data on corrections for the two groups of readers might best be summarized as follows: more proficient readers get better and better (more successful, more selective) at correcting their miscues. More frequent silent reading will be expected to reduce the overall number of overt corrections as the readers move towards increased silent correction; for the readers of the current investigation, and to a lesser extent for the Goodman readers, this reduction is not yet apparent.

The final chapter summarizes the developmental patterns discussed in each of the earlier chapters and returns to the research questions posed in the introduction.

CHAPTER VII

CONCLUSION

This study was designed to test two hypotheses about the reading behavior of adults attempting to master reading in a second language. Two recurring themes in the literature on language acquisition--that language learning is a developmental process and that there are striking similarities between first and second language development--underlie the hypotheses.

1. Adult non-native readers at various proficiency levels will show different reading strategy behavior as a function of those proficiency levels.
2. The patterns of change which accompany increased reading proficiency for the adult non-native readers will be similar to those reported for young readers learning to read in their native language.

The instrument of measurement was the Goodman Taxonomy of Reading Miscues which provides detailed information on the subjects' reading behavior, especially with respect to their use of graphophonic cues and their concern for preserving the grammatical structure and the meaning of the text material. The analysis of the oral reading miscues in English of the Spanish-speaking adults (at three proficiency levels) in the current investigation confirms the first hypothesis: there are differences in the reading behavior of the subjects at the different proficiency levels and these differences are attributable to changes in reading level. A further comparison of the specific patterns of change noted for the adult second language reader with data from the Goodman study

of four young readers learning to read in their native language, English, confirms the second hypothesis: the patterns of development accompanying increases in reading proficiency for these adults are very similar to those Goodman observed in young children as they became more proficient readers.

Hypothesis One

According to a psycholinguistic model of reading upon which the Taxonomy Analysis is based (see Kenneth Goodman 1973a for discussion) a fluent reader is "one who is successful in constructing meaning while reading" (Goodman, in Allen 1976:113). In order to construct meaning successfully from a text, the reader begins with certain guesses about meaning, from what he knows about the subject and from the graphic, syntactic and semantic cues available in the text and, as . . . he progresses into the material, he confirms or revises these expectations and builds still more on the basis of what he has read . . . This confirming of expectancy is done through the extraction of minimal samples from the page. Orthographic, syntactic and semantic clues in the material are used in the reconstruction of the text. If there is an obvious flaw in the reader's interpretations, he may check back for the source of the miscue (Coady 1979:6).

'More proficient' reading means getting better at constructing the textual meaning in a fashion similar to that described above. Changes in miscues reflect an enhanced ability to construct meaning from the text (Goodman, in Allen 1976). More proficient readers might be expected to show increases in the syntactic and semantic acceptability of their miscues and an increase in selectivity of use of graphophonic cues as a means of understanding what they read. In addition, the correction behavior of readers with increasing proficiency would indicate a heightened concern for preserving both the structure and

the meaning of the material (and perhaps an increasing ability to use structure to get to meaning; see discussion, p.p. 165-66). These readers would be increasingly attentive to making corrections when the sense or the structure of the text was altered.

In the current study, a comparison of the reading behavior of those subjects judged as high level readers and those designated as low level readers indicates that the changes in patterns of miscues which might be expected to occur as reading proficiency increases, according to a psycholinguistic model of reading, do in fact occur for these readers. In other words, the miscue behavior of high group readers and that of low group readers differs. Furthermore, the differences in the patterns of miscues correspond to those predicted for increased reading proficiency. Specifically, the reading behavior of the high and low group readers¹⁸ demonstrates the following important differences.

1. High group readers' miscues resulted in syntactically acceptable structures at least a third again as frequently as those of the low group; high proficiency readers also produced semantically acceptable structures almost twice as often as the low proficiency readers. (See Figure 7.) The comparison of the relative success of the two groups in producing structures that sound like language (syntactic acceptability) suggests that one important change accompanying increased proficiency for the readers of the current study is increasing ability to deal with grammatical and semantic cues in the text.

2. High group readers show both finer graphophonemic discriminations in their miscues (see Table 16, p.193) and greater flexibility in their reliance on the visual display as a means of reconstructing the meaning of the text material. A sign of increasing reading proficiency is the

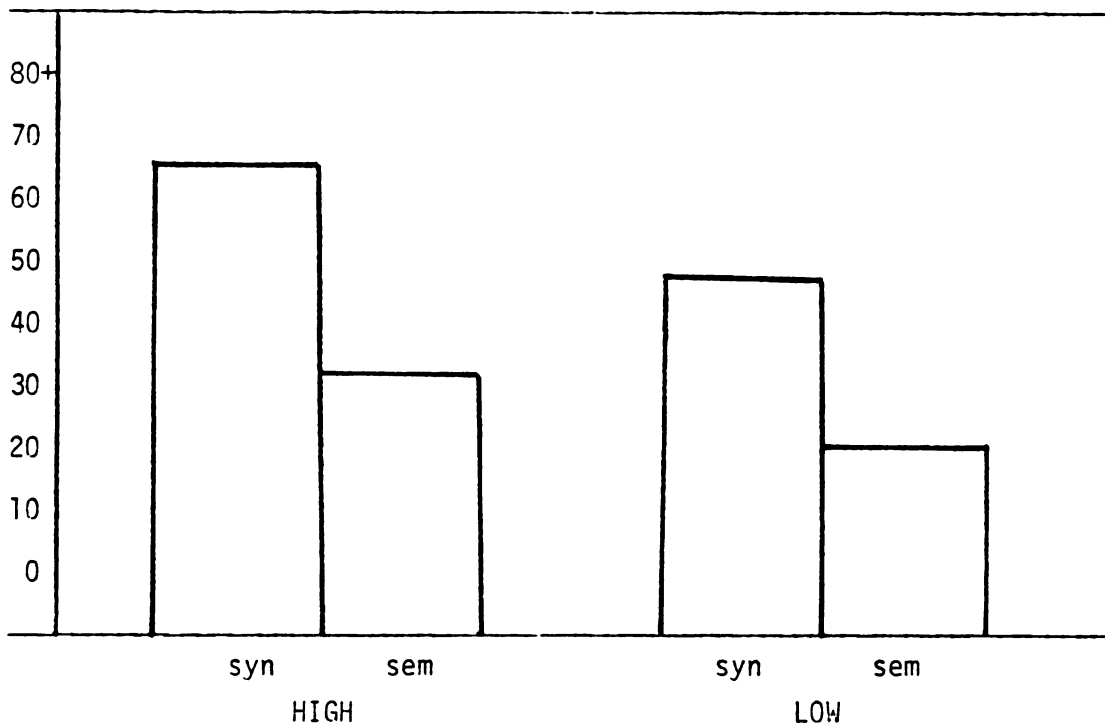
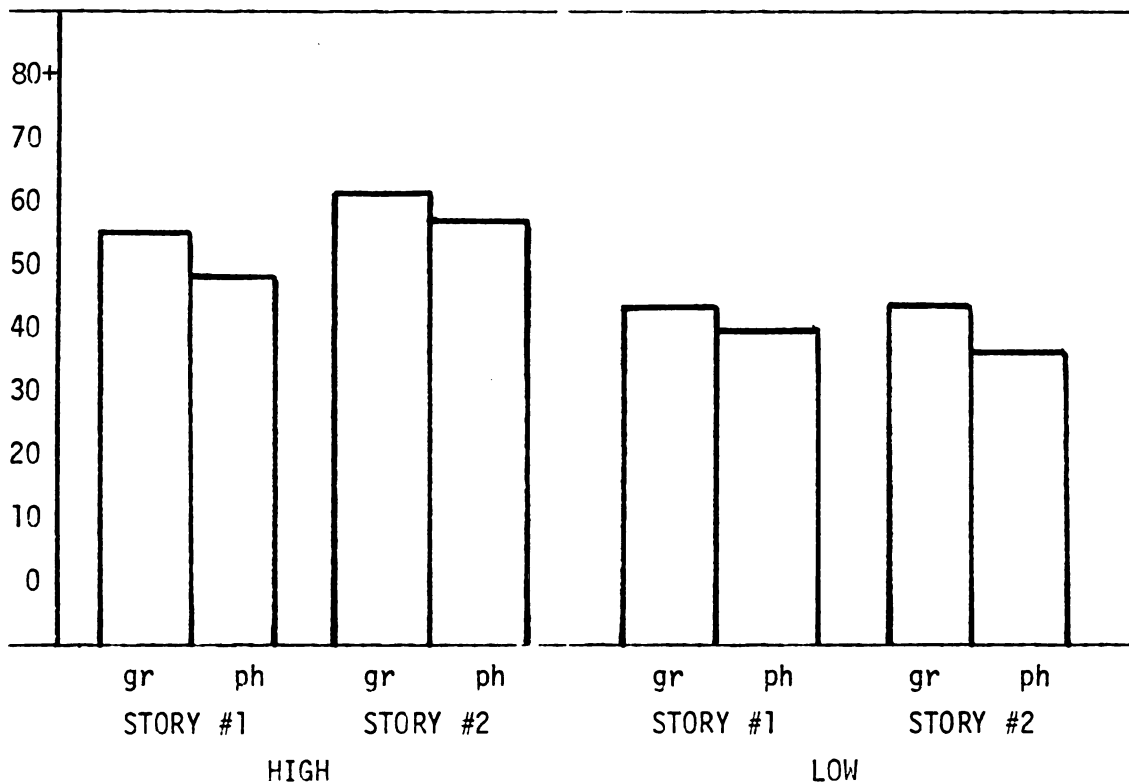


Figure 7. Percent of Syntactic and Semantic Acceptability for High and Low Proficiency Readers

ability to vary (either increase or decrease) the amount of graphophonic information used, depending on the difficulty of the text. Fluent readers would generally be expected to minimize the use of graphophonic cues in favor of syntactic and semantic information in the text, but also to be able to adapt this reading strategy should a loss of meaning occur. Figure 8 illustrates the relative flexibility of the high and low proficiency readers of the current investigation in their use of graphophonic information. It should be remembered that "Caged" was determined to be the more difficult of the two stories (see Chapter 2 for discussion); as the figure shows, the high group readers adjusted their use of graphophonic information accordingly, that is, they attended to the details of the text and the increase in graphophonic

similarity reflects this. The low group readers, on the other hand, did not vary use of graphic information and show a slight decrease in phonemic similarity despite the fact that measures of comprehension (especially their retellings) indicate that "Caged" was much more difficult for them.



STORY #1 = "The Weapon"
STORY #2 = "Caged"

Figure 8. Percent of graphic and phonemic 'high similarity' for High and Low Group Readers, Stories #1 and #2.

3. The correction behavior of the high group readers demonstrates that these readers not only correct more often and more successfully than the low group readers (see Table 31 and p. 149) but that in their corrections they are more sensitive to disruptions to the structure and

the sense of the text material. Figure 9 illustrates this difference in preserving the syntactic and semantic structures encountered in the text for the two groups. It shows the frequency of correction of syntactically and semantically acceptable miscues causing varying degrees of change to the text structure and sense. The concern for maintaining the author's grammar and meaning (especially meaning) which marks the high group's reading proficiency means increased use of corrections as the amount of change produced by the miscues increases.

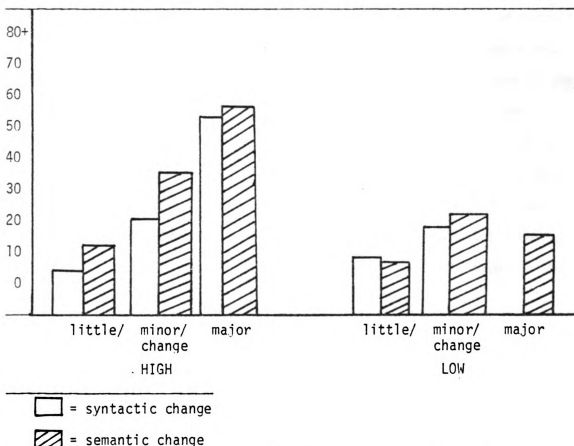


Figure 9. Percent of Correction for Subcategories of Syntactic and Semantic Change (Present Study)

There are of course many other differences between the reading behavior of the low and high proficiency groups of the current study;

a summary of these differences appears in each of the chapters detailing the findings of the present work. However, the comparisons offered above present a general picture of the most significant differences: varying success in producing miscues with syntactic and semantic acceptability; differences in graphic and phonemic similarity of miscues and in the selectivity of use of cues from the visual display; and, changes in correction behavior.

Hypothesis Two

The discussion above indicates that for the readers of the present study, changes in proficiency level mean changes in reading behavior, specifically a movement towards preserving meaning and structure in the text. A comparison of the particular changes accompanying higher proficiency for these non-native subjects with those changes noted by Goodman for young native children as their reading proficiency levels increase confirms the second hypothesis of this investigation: the patterns of development will be similar for the two groups of readers. The following list summarizes the developmental patterns common to the readers of both studies.

1. Decrease in Miscues per Hundred Words with increased proficiency.
2. Increase in processing of larger units of language (more phrase and clause level miscues) with increased proficiency.
3. Higher frequency of acceptable syntactic and semantic structures with higher proficiency.
4. Finer graphic and phonemic discrimination (to a point) as a function of more proficient reading.
5. A change in the amount of graphophonemic information used by the readers. From low to high proficiency, more information from the whole word used (not just information from beginning to end).

6. Increase in semantic and syntactic acceptability for miscues with no grapho-phonemic similarity as proficiency gets higher.
7. Movement towards greater and more stable semantic and syntactic acceptability of miscues as a reader improves his proficiency.
8. Once a miscue is judged acceptable movement towards little or no change in the intended structure or sense of the text with increased proficiency.
9. More frequent corrections as a function of higher proficiency.
10. More successful corrections as proficiency increases.
11. With increased proficiency, more likelihood that unacceptable or partially acceptable miscues will be corrected.
12. As a function of higher proficiency, increased tendency to correct already acceptable miscues as the degree of change to the text structure or sense increases.

Along with these similarities, the data reveal a few differences between the reading behavior of the two groups.

1. The overall frequency of the miscues of the readers of the present study is lower than for the subjects of the Goodman investigation.

It has earlier been speculated that this difference might be due to any or all of the following factors: the greater maturity of the adult readers; the type of reading instruction these readers encountered when learning to read in their native language, Spanish; or, the effects of foreign language instruction upon their reading performance. Further study is needed before firm conclusions can be offered, but it is important to remember that miscue frequency taken in isolation is not particularly revealing of reading strategies.

2. Readers of the present study appear more sensitive to changes in graded difficulty of material than the young Goodman readers.

It is not clear why there should be a difference here; but possibly the circumstances of the recording session affected the results. The Goodman subjects read only one story in each of the taping sessions during the

two year duration of the study. The subjects of the current investigation were asked to read two stories and give retellings in a forty-five minute period. Perhaps reader fatigue rather than story difficulty caused these subjects to miscue more frequently in the second of the two stories, "Caged", which also happened to have a higher graded difficulty. More research, using selections with a wide range of graded difficulty, could shed further light on this finding.

3. The developmental pattern for the correction of syntactically and semantically unacceptable miscues varies for the two groups of readers.

For both groups of readers, increased reading proficiency means a higher percentage of corrections for syntactically and semantically unacceptable structures. The difference between the two groups is in the young readers' tendency to preserve syntactic acceptability more frequently; the non-native readers seem equally interested in preserving both syntactic and semantic acceptability. The discussion of correction behavior (see p. 166) suggests that the proficient native readers have a strategy of using syntactic information as a way of comprehending the meaning of the text; hence, in their corrections they often show a preference for preserving syntactic acceptability in the face of meaning loss. The higher proficiency readers' larger percentage of corrections for syntactically unacceptable miscues indicates that they may be more sensitive than lower proficiency and foreign readers to the ways structural information can provide clues to meaning in the language. These readers, owing to their greater flexibility in using syntactic cues to get to meaning, may be able to develop a successful correction strategy--a large percentage of structures corrected to by syntactically acceptable are also semantically acceptable--not available to less

proficient and foreign readers. Further study of the grammatical proficiency of readers (both foreign and native), as Yorio (1971) suggests, might clarify the relationship between knowledge of grammar and reading proficiency.

Limitations and Suggestions for Further Study

While generally confirming the hypotheses set forth about the reading behavior of non-native readers attempting to learn to read in a foreign language, the present investigation has a number of limitations. First, while every attempt was made to include subjects whose overall English language proficiency was within a narrowly defined range, it is not possible to fully separate reading proficiency from overall language proficiency (see Yorio 1971). The differences in reading performance noted in the study might be related to general language proficiency or perhaps can be attributed to both overall proficiency and reading level. Further study into the relationship between the degree of proficiency in the target language and level of reading proficiency is called for.

Another problem area for the study (and one which has been referred to in other miscue analyses) is the relationship between oral and silent reading. The general assumption in studies of oral reading is that while there are slight differences between oral and silent reading, the basic processes are the same. However, Clarke's warning should be heeded: "all conclusions must be tempered by the possibility that the elicitation instruments have produced behaviors which are peculiar to those tools, and not in fact representative of the subject's reading behaviors" (1979:137).

A third limitation is in the study's scope. No systematic study of the subjects' reading behavior in their native language (Spanish) was undertaken. Hence no comparison between reading behavior in the first and second language is possible. It is reasonable to speculate from their educational backgrounds that each of the readers is fairly proficient at reading in Spanish, but clearly a further study, one which investigates the readers' miscues in the foreign language (as in the present study) and the miscues in the native language is necessary before definitive statements can be offered about the changes in reading behavior of adults learning to read in a foreign language. Clarke (1978) compares subjects' reading in English and Spanish and finds that there are differences in strategies--Spanish speakers reading in English seem to revert to less efficient reading strategies than those used while reading in Spanish. A study which combines the focuses of the current work and the Clarke study holds exciting promise for a clearer picture of the development of reading in a foreign language.

Other areas of research suggested by the current study include: a longitudinal study of adult readers as they attempt to master reading in a foreign language; a study of developmental trends in the reading of subjects from various languages; and, an investigation which compares any changes in reading behavior of foreign students enrolled in a reading program with those changes that might be found in the reading of subjects not engaged in formal reading instruction.

Final Summary

The present study supports the existence of developmental trends in the reading of adults attempting to master reading in a foreign language.

As a function of increased proficiency, these readers move towards miscues which could be labelled "high quality", that is, miscues which show increasing syntactic and semantic acceptability. Other aspects of the reading behavior of the higher proficiency readers (use of grapho-phonemic information, correction strategies) reinforce a central assertion inherent in a psycholinguistic model of reading: reading, by definition, means getting meaning from the material. The increasing concern for producing oral reading that both sounds like language and makes sense is the mark of a proficient reader. This observation is clearly true for the readers of the present study who, in their miscues, increasingly demonstrate this concern for preserving the form and the meaning of the text material.

The current study also establishes a relationship between changes in reading behavior, as a function of increased reading proficiency, for children learning to read in their native language and non-native adults learning to read in a foreign language. Increased proficiency in each case means movement towards more efficient reading strategies, that is, enhanced ability to reconstruct meaning from the text. These results would seem to point to some form of "reading universals hypothesis" (Clarke 1979), a hypothesis which asserts that " . . . the reading process will be much the same for all languages" (Kenneth Goodman 1973:27). The present study also suggests that it might be possible to add to this statement: AND LEARNING TO READ IS ESSENTIALLY THE SAME FOR CHILDREN AND ADULTS, FOR NATIVE AND NON-NATIVE READERS.

FOOTNOTES

¹The Multiple Choice Cloze Test appears in Appendix B. The comprehending score is calculated by taking the percentage of miscues which result in semantically acceptable structures and adding this figure to the percentage of miscues corrected to be semantically acceptable.

²Unless otherwise noted, all miscues cited in this report are taken from the current study. The use of miscues from other sources indicates that no miscues of that type were produced in the present study.

³Typically the agreement among trained listeners is very high; in the Goodman Study there was 90% agreement between two listeners and in the present study the figure was approximately 86%.

⁴Filler and Function apply only to nouns, verbs, adjectives and adverbs.

⁵For full treatment of the Taxonomy subcategories, see below, Chapters 4-6 and Appendix E.

⁶The idea that any reading test which offers no context or continuity can offer significant information about a reader is, of course, questionable.

⁷For a complete discussion of the sound patterns of Spanish and English (including a comparison and contrast), see The Sounds of English and Spanish, Stockwell and Bowen (1965).

⁸Numbers 1 and 2 should be regarded cautiously since recent research (see Jenson 1972) has indicated that miscues of these types might well be phonological, the result of reductions or deletions governed by the readers' phonological rules. Recent revision of the Taxonomy (Allen 1976) reflects this broader definition of phonological miscues.

⁹All miscues are from the present study unless otherwise noted.

¹⁰For a full discussion and description of miscue level and type see Allen (1976:191-207).

¹¹Some of these codings are problematic, especially subcategories 2 & 3. There is some question whether the readers who produced miscues of the type included above have actually inserted or deleted deep structure clauses. In any case, every effort was made to keep the coding decisions of the present study consistent with those of the Goodman Study.

¹²The marking here indicates that the reader placed stress on the second syllable (-ing) rather than the first, as might be expected.

¹³See Appendix E for codings for each of the subcategories for graphic and phonemic similarity.

¹⁴See Appendix E for a full list of the subcategories for syntactic (and semantic) change.

¹⁵Even for the low group readers the overall number of miscues with no graphic similarity is very small; the developmental pattern here is for even fewer miscues of this type.

¹⁶There are no obligatory transformations in the data; it is impossible to determine which rules might be mandatory from the small existing language sample.

¹⁷Altha, a slow reader, produced no non-word miscues in any of the six reading sessions she participated in.

¹⁸The high and low groups (but not the medium group) are here considered because it is between these two extremes that genuine differences of reading behavior might be expected to emerge from the data. See discussion (p. 38) on the nature of developmental patterns in language learning.

APPENDIX A
INFORMATION SHEET

APPENDIX A
INFORMATION SHEET

Name _____	Address (in Mexico) _____
Age _____	_____
Sex _____	_____
Birthplace _____	_____
Education Level _____	_____
Field of Study _____	_____
Average Grade for University Coursework _____	_____
Career Plans _____	_____
Languages Spoken (other than Spanish and English) _____	_____
Years of Study for each Language _____	_____
Years of Study of English--	
in high school : _____	
in the university: _____	
other: _____	
Time Spent in the U.S. (Including Traveling) _____	_____
Do you enjoy studying languages? _____	
Do you have much opportunity to speak English? _____	

Have you ever had a special course in reading (is yes, please specify)?

Have you ever had special instruction in reading in English?

How did you learn to read in English?

IN SPANISH-- how much do you read (not schoolwork)?

what type of reading do you enjoy most?

do you enjoy reading?

IN ENGLISH-- how much do you read (not schoolwork)?

what type of reading do you enjoy most?

do you enjoy reading?

Compared to other students at your university, how good a reader are you?

What are the most difficult things about reading in English?

APPENDIX B
CLOZE TEST

APPENDIX B
CLOZE TEST

THE INDIAN WHO SPOKE ENGLISH
Produced by the English Language Center
Michigan State University

The Pilgrims were a religious group who wished to separate from the official Church of England and practice religion in their own way. They were

simple workers and farmers of 1 kinds.

They got 2 from the English government

and 3 England on the famous ship,

The Mayflower, in June 1619 and 4

at Plymouth, Massachusetts 5 September of the 6 year.

They had a very 7 time at

first 8 they were not used to this

new way of life. Winter set in, 9

food 10 and many became sick

and 11.

In 12 spring an Indian

- | A | B | C | D |
|---------------|-----------|-----------|-----------|
| 1. famous | lovely | various | any |
| 2. permission | comission | completed | advice |
| 3. gave | came | saw | left |
| 4. arrived | went | looked | applauded |
| 5. for | in | with | on |
| 6. some | any | same | intended |
| 7. difficult | different | likeable | merry |
| 8. before | likely | quietly | because |
| 9. our | much | their | precious |
| 10. gave to | gave up | got by | gave out |
| 11. tried | better | died | lost |
| 12. early | very | beautiful | frequent |

	A	B	C	D
appeared and <u>13</u> the English	13. visited	scared	attacked	surprised
by <u>14</u> , "Welcome." The Indian knew	14. said	saying	praying	praising
a few more words of English and said <u>15</u>	15. which	that	what	where
he had a friend named Squanto <u>16</u>	16. whom	whose	who	whether
spoke English <u>17</u> . In a few days	17. well	better	always	in time
Squanto arrived at the <u>18</u> . Squanto	18. felony	campground	lake	colony
had an <u>19</u> history. Fifteen years	19. famous	extinct	interesting	likely
<u>20</u> he and four other Indians had	20. because	although	except	before
been picked up and <u>21</u> as prisoners	21. arrived	taken	put	raised
to England <u>22</u> an English ship. Squanto	22. by	with	for	before
<u>23</u> in England for nine years	23. qualified	joined	named	remained
before John Smith <u>24</u> him back	24. tossed	let	sought	brought
to America in 1614. <u>25</u> Smith returned	25. As to	After	Although	Almost
to England, Thomas Hunt <u>26</u> Squanto	26. Captivated	rerouted	recaptured	sought
<u>27</u> fifteen other Indians and took	27. with	by	any	which
them to Spain where they <u>28</u> as	28. came back	would sell	managed	were sold
slaves. <u>29</u> by Spanish priests	29. Left	Helped	Chased	Kept
Squanto made his way <u>30</u> to England	30. across	toward	back	forward

and worked 31 as a servant for four
32 five years.

In 1619 he was 33 brought
back to America. Squanto proved 34
of great help to the Pilgrims in 35
to the new land. Squanto 36 the
Pilgrims 37 and how to fish. He acted
as their 38 through the forests and
was their 39 with the different
Indian tribes. 40 important, he taught
the Pilgrims 41 corn which was to
become their main 42 of food.
He settled down 43 and
lived with them for the 44 of his life.
The Pilgrims 45 him by
burying him 46 their own people.

- | A | B | C | D |
|---------------|-----------|--------------|-------------|
| 31. there | here | about | around |
| 32. with | and | as | or |
| 33. yet | about | again | often |
| 34. although | to be | always | that |
| 35. removing | landing | adjusting | finding |
| 36. taught | missed | sought | made |
| 37. here | in time | about | where |
| 38. guard | guide | friend | help |
| 39. caller | interests | interference | interpreter |
| 40. Best | At times | In fact | Most |
| 41. to plant | eating | liking | maintaining |
| 42. use | source | cost | enjoyment |
| 43. suddenly | lastly | friendly | immediately |
| 44. best | at times | rest | in spite |
| 45. respected | expected | rejected | honored |
| 46. among | without | besides | within |

APPENDIX C
READING TEXTS

APPENDIX C
READING TEXTS

The Weapon

adapted from the story by
Fredric Brown

It was early evening and the room was very quiet. Dr. James Graham, head scientist for an important government project, sat in his favorite chair thinking. It was so quiet that he could hear his son in the next room turning the pages of his picture book.

Often Graham did his best work, his most creative thinking, under these conditions--sitting alone in his dark apartment after the regular day's work. But tonight he couldn't think clearly. Mostly his thoughts were about his mentally retarded son in the next room. His thoughts were loving thoughts. He wasn't bitter like he had been years ago when he first learned of his son's condition. He thought, "At least the boy's happy, isn't he? Isn't that the most important thing? Many people would be happy to have a child who would never leave them. Certainly that is a rationalization, but..." The doorbell rang.

Graham rose and turned on the light. Then he went to answer the door. He welcomed the interruption to his thoughts. He opened the door. A stranger stood there; he said, "Dr. Graham? My name is Niemand; I'd like to talk to you. May I come in for a moment?"

Graham looked at him. He was a small man, obviously not dangerous. Graham heard himself saying, "Of course. Come in, Mr. Niemand." He thought that a few minutes of conversation would relax him.

"Sit down," he said as they entered the living room. "Care for a drink?"

"No thanks," answered Niemand, settling into the chair opposite Graham who was on the sofa. The small man did not look directly at Graham as he leaned forward and said, "Dr. Graham, you must know that your scientific work could cause the destruction of the world."

"Oh no, a fanatic," thought Graham. He really didn't want to talk to this man, but it was too late. The scientist wished he had asked what the man wanted before he had let him in. Now he felt embarrassed; he would have to be rude. He didn't want to be, but with fanatics, only rudeness was effective.

"Dr. Graham, the arms on which you are working--"

The visitor stopped talking and turned his head towards the door to the bedroom as a boy of fifteen came in. The boy laughed like a happy child of four. Graham put his arm around the boy. He wondered if Niemand knew about his son. The visitor did not seem surprised; Graham supposed he had known.

"Harry," Graham said with affection, "Daddy's busy now. Go back to your room; I'll come and read with you soon."

The boy saw the visitor and smiled timidly. Graham said, "Harry, this is Mr. Niemand." Niemand smiled at the boy and held out his hand in a friendly gesture. He took Niemand's hand; it was obvious that the boy liked Niemand. Graham gently pulled his son closer to himself and softly said, "Go back to your room now, Harry. I'll come soon." The boy skipped back to his bedroom, not closing the door.

Niemand looked directly into Graham's eyes and said, "I like him." Graham was now certain that Niemand had known about his son before. The scientist suddenly liked Niemand because he had been so kind to the boy. But then he remembered that he didn't want to talk with Niemand about the arms he was working on for the government. He wanted Niemand to leave.

Graham said, "Mr. Niemand, you are wasting your time and mine. I understand your arguments against the arms I am working on, but that is not my concern. I am a scientist. My only concern is with my work. I am not responsible for the actions of other people; I am not to blame if some people might use these weapons to harm others."

"But Dr. Graham, what will happen to humanity if these weapons are used? Won't you be responsible?" asked Niemand.

Graham frowned, "I will not continue this discussion," he said, rising.

Niemand also rose and said, "I'll say no more now. I'll leave, but before I go could I have that drink you offered me earlier?"

Graham felt relieved that the unpleasant conversation had ended. "Of course," he said, "Is whisky and water okay?" Niemand nodded yes.

Graham went to the kitchen to mix the drinks. When he returned, Niemand was leaving Harry's bedroom. Graham heard him saying goodnight to his son.

The men drank the drinks in silence. As Niemand prepared to leave, he said to Graham, "I brought a small gift for your son. I gave it to him before when I went into his room to say goodnight. I hope it's okay."

The scientist was pleased. "Certainly. Thank you and goodnight," he answered.

Graham closed the door and then walked to Harry's room to read as he had promised earlier. Suddenly he began to sweat. He forced himself to be calm as he reached for the gift that Niemand had left.

"Please let Daddy have that for a minute, Harry," he said in a steady voice. He took it and quickly left the room.

When he was safely out of the room, Graham began to tremble. He thought, "Only a madman would give a loaded revolver to an idiot."

Caged

by Eric Lloyd Reeve

Emphatically, Mr. Purcell did not believe in ghosts. Nevertheless, the man who bought the two doves, and his strange act immediately thereafter, left him with a distinct sense of the eerie.

Purcell was a small, fussy man; red cheeks and a tight melon stomach. He owned a pet shop. He sold cats and dogs and monkeys; he dealt in fish food and bird seed, and prescribed remedies for ailing canaries. He considered himself something of a professional man.

There was a bell over the door that jangled whenever a customer entered. This morning, however, for the first time Mr. Purcell could recall, it failed to ring. Simply he glanced up, and there was the stranger, standing just inside the door, as if he had materialized out of thin air.

The storekeeper slid off his stool. From the first instant he knew instinctively, unreasonably, that the man hated him; but out of habit he rubbed his hands together briskly, smiled and nodded.

"Good morning," he beamed. "What can I do for you?"

The man's shiny shoes squeaked forward. His suit was cheap, ill-fitting, but obviously new. A gray pallor deadened his pinched features. He had a shuttling glance and close-cropped hair. He stared closely at Purcell and said, "I want something in a cage."

"Something in a cage?" Mr. Purcell was a bit confused. "You mean--some kind of a pet?"

"I mean what I said!" snapped the man. "Something alive that's in a cage."

"I see," hastened the storekeeper, not at all certain that he did. "Now let me think. A white rat perhaps."

"No!" said the man. "Not rats. Something with wings. Something that flies."

"A bird!" exclaimed Mr. Purcell

"A bird's all right." The customer pointed suddenly to a suspended cage which contained two snowy birds. "Doves? How much for those?"

"Five-fifty. And a very reasonable price."

"Five-fifty?" The sallow man was obviously crest-fallen. He hesitantly produced a five-dollar bill. "I'd like those birds. But this is all I got. Just five dollars."

Mentally Mr. Purcell made a quick calculation which told him that at a fifty-cent reduction he could still reap a tidy profit. He smiled magnanimously. "My dear man, if you want them that badly, you can certainly have them for five dollars."

"I'll take them." He laid his five dollars on the counter. Mr. Purcell teetered on tiptoe, unhooked the cage, and handed it to his customer. The man cocked his head to one side, listening to the constant chittering, the rushing scurry of the shop. "That noise!" he blurted. "Doesn't it get to you? I mean all this caged stuff. Drives you crazy, doesn't it?"

Purcell drew back. Either the man was insane or drunk.

"Listen." The staring eyes came close. "How long d'you think it took me to make that five dollars?"

The merchant wanted to order him out of the shop. But he heard himself dutifully saying "Why--why, how long did it take you?"

The other laughed. "Ten years!" At hard labor. Ten years to earn five dollars. Fifty cents a year."

It was best, Purcell decided, to humor him. "My, my! Ten years--"

"They give you five dollars," laughed the man, "and a cheap suit, and tell you not to get caught again."

Mr. Purcell mopped his sweating brow. "Now, about the care and feeding of--"

"Bah!" The sallow man swung around, and stalked abruptly from the store.

Purcell sighed with sudden relief. He waddled to the window and stared out. Just outside his peculiar customer had halted. He was holding the cage shoulder-high, staring at his purchase. Then, opening the cage, he reached inside and drew out one of the doves. He tossed it into the air. He drew out the second and tossed it after the first. They rose like windblown balls of fluff and were lost in the smoky gray of the wintry sky. For an instant the liberator's silent and lifted gaze watched after them. Then he dropped the cage. A futile, suddenly forlorn figure, he shoved both hands deep into his trouser pockets, hunched his head and shuffled away...

The merchant's brow was puckered with perplexity. "Now why," Mr. Purcell muttered, "did he do that?" He felt vaguely insulted.

APPENDIX D
THE MARKING SYSTEM

APPENDIX D THE MARKING SYSTEM

SUBSTITUTION: . . . left him with a distinct sense of the eerie. ^{THIS}
^{WENT}
 He waddled to the window and stared out.

OMISSION: He was leaving Harry's bedroom.
 I gave it to him before when I went into his room.

INSERTION: Mr. Purcell didn't ^{NOT} believe in ghosts.
 . . . when he had learned of his son's condition. ^S
[^]

REVERSAL: "I see what the trouble is," Mr. Porter said.
 Where can I go, Father?

CORRECTION
 successful: . . . and his strange ^C act immediately ^{2. the}
 thereafter . . .
 unsuccessful: . . . as if he had materialized out of thin air. ^{UC} ^{1. an}
[^]
 abandoned correct:

^{ac} "I mean what I said."

NON-WORD: ^{\$ BASKLY}
 He rubbed his hands briskly together.
^{\$ PRODUCEN}
 He hesitantly produced a five dollar bill.

REPETITIONS:

Simply he glanced up . . .

. . . not at all certain that he did.

PARTIAL WORDS:

MEN-

Mentally, Mr. Purcell made a quick calculation.

S-S-S

He signed with sudden relief.

APPENDIX E
THE GOODMAN TAXONOMY OF READING MISCUES

APPENDIX E

THE GOODMAN TAXONOMY OF READING MISCUES*

LEVELS OF LANGUAGE

Submorphemic Level

- 0 no involvement
- 1 substitution
- 2 insertion
- 3 omission
- 4 reversal

Bound Morpheme Level

- 0 no involvement
- 1 substitution
- 2 insertion
- 3 omission
- 4 reversal

- 0 no involvement
- 1 inflectional suffix
- 2 non-inflectional form
- 3 contractional suffix
- 4 derivational suffix
- 5 prefix
- 6 miscue across affix types
- 7 miscue involving the base

Word or Free Morpheme Level

- 0 no involvement
- 1 substitution
- 2 insertion
- 3 omission
- 4 reversal

- 0 no involvement
- 1 multiple morpheme word for multiple morpheme word
- 2 single morpheme word for single morpheme word
- 3 multiple morpheme word for single morpheme word
- 4 single morpheme word for multiple morpheme word
- 5 word or free morpheme in longer word
- 6 word in compound
- 7 non-word

* For additional information on the subcategories of the Taxonomy, see Allen and Watson 1976.

Phrase Level

- 0 no involvement
- 1 substitution
- 2 insertion
- 3 omission
- 4 reversal

Clause Level

- 0 no involvement
- 1 substitution
- 2 insertion
- 3 omission
- 4 clause dependency altered within sentence
- 5 clause dependency altered across sentences

CUEING SYSTEMS

Intonation

- 0 no involvement
- 1 within words
- 2 within the phrase structure
- 3 relative to end of phrase and/or end of sentence
- 4 involves substitution of a conjunction for terminal or vice versa
- 5 involves direct quotes

Graphic Similarity

- 0 no similarity
- | | |
|----------|--|
| LOW | <ul style="list-style-type: none"> 1 letters in common 2 any key letter in common or the middle portions similar 3 ends common |
| MODERATE | <ul style="list-style-type: none"> 4 beginnings common 5 beginnings, middle common 6 beginnings, ends/ middles, ends common |
| HIGH | <ul style="list-style-type: none"> 7 beginnings, middles, ends common or reversal of three or more letters 8 single graphic difference or reversal of two letters or all but punctuation 9 homographs |

Phonemic Similarity

- 0 no similarity
- LOW
 - 1 some common sounds
 - 2 single key element in common
 - 3 final sounds common
- MODERATE
 - 4 beginnings common
 - 5 beginnings, middles common
 - 6 beginnings, ends/ middles, ends common
- HIGH
 - 7 beginnings, middles, ends similar
 - 8 differ in single vowel or consonant or morphophonemic or intonation shift
 - 9 homophones

Grammatical Function

- 0 different
- 1 same
- 2 indeterminate

Transformation

- 0 no transformation
- 1 different deep structures
- 2 same deep structures, different compulsory rules
- 3 same deep structures, different optional rules
- 4 deep structure lost or garbled

Syntactic Acceptability

- 0 not acceptable
- 1 acceptable only with prior portion of the sentence
- 2 acceptable only with following portion of the sentence
- 3 fully acceptable in sentence
- 4 fully acceptable in total passage

Syntactic Change

- 0 unrelated
- MAJOR
 - 1 single key element
 - 2 key element in common
 - 3 major change in sentence pattern
- MINOR
 - 4 minor change in sentence pattern
 - 5 a major change within the structure of the phrase
 - 6 a minor change within the structure of the phrase

- LITTLE 7 change in person, tense, or number
 8 change in choice of function word or other minor shift
 9 unchanged

Semantic Word Relationships

- 0 unrelated
- 1 syntactic relationship with only minor semantic relation
- 2 strong sequential relationship
- 3 association to homophone or homograph
- 4 shift to generic from specific
- 5 shift to specific from generic
- 6 common attribute between characters
- 7 antonym
- 8 other in pair
- 9 variant of same word
- 10 slight difference in connotation
- 11 similar name
- 12 synonym in text
- 13 synonym in other contexts
- 14 some semantic relationship

Semantic Acceptability

- 0 not acceptable
- 1 acceptable only with prior portion of the text
- 2 acceptable only with following portion of the text
- 3 fully acceptable in sentence
- 4 fully acceptable in total passage

Semantic Change

- 0 unrelated
- MAJOR 1 change or loss affecting basic plot line
 2 change or loss affecting key aspect of story
 3 change or loss involving major incidents, major characters
- MINOR 4 change or loss involving minor incident, minor character
 5 change or loss of aspect that is significant but that does
 not create inconsistencies
 6 change or loss of an unimportant detail
- LITTLE 7 change in person, tense, number, etc.-- noncritical
 8 slight change in connotation or similar name
 9 no change

CORRECTION STRATEGY

Corrections

- 0 no correction
- 1 correction
- 2 unsuccessful attempt
- 3 correct form abandoned

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