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THE INFLUENCE OF KINDERGARTEN EXPERIENCE ON THE LANGUAGE ACQUISITION OF CHILDREN FROM DIFFERENT SOCIOECONOMIC BACKGROUNDS

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Abstract

The classroom language ability of Lower Class and Middle Class kindergarten children was evaluated at the beginning and end of the school year using various grammatical and communication tasks. Results indicated that grammatical and communication abilities are independent factors in the kindergarten child's classroom language. On grammatical tests, MC and LC children displayed the same understanding of classroom structures. Although LC children had more difficulty spontaneously producing these forms they were catching up with their MC peers by the end of the year. The results of the communication tasks showed that LC speech contains as many implicit features as MC speech, but fewer explicit features. Over the year, LC and MC children's speech became more effective, not because of a decrease in implicit features, but because of an increase in explicit features. Both groups of children, especially the LC, seem to require additional training in communication

abilities. The LC children's poorer performance on these tests suggests that LC children have problems on communication tasks not because they do not understand the material to be presented, but because they do not know the behavior that is appropriate to convey this knowledge.

THE INFLUENCE OF KINDERGARTEN EXPERIENCE ON THE LANGUAGE ACQUISITION OF CHILDREN FROM DIFFERENT SOCIOECONOMIC BACKGROUNDS

by

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INTRODUCTION

Lower class (LC) children do not perform so well in school as do middle class (MC) children. One explanation for this apparent discrepancy is that linguistic difficulties may be initially responsible for educational problems and LC children have not had the language training necessary for success in school. This explanation is based on the premise that linguistic difficulties do occur and that they do not disappear as a result of normal schooling. The purpose of this thesis is to examine the language used by a sample of white MC and LC children in Montreal to compare how their language changes during the first year of school.

Although researchers agree that the LC child does have a "language problem" they disagree about the nature of this problem. Two prominent, but conflicting, explanations have been suggested by so-called deficiency (or deprivation) theorists, on the one hand, and by difference theorists on the other. This controversy may be resolved by a sociolinguistic approach to the study of language.

Advocates of the deficiency hypothesis (e.g., M. Deutsch, 1967; J. McV. Hunt, 1964) suggest that the LC child's language is not so well developed as the MC child's. Because his language is not so complex and therefore, in some way, not adequate, he does poorly in school.

The difference theorists (e.g., Baratz, 1970; Stewart, 1970) maintain that the disparity between LC and MC speech is due to dialect differences which do not reflect underlying language abilities. They argue that the LC child speaks a complex and subtle form of English that may not be used or understood by his MC teacher who speaks a standard form of English. These discrepancies often result in a lack of mutual understanding between the LC child and his teacher. Because of this communication gap, the child does poorly in school.

The "sociolinguistic approach" to the study of class differences in speech represents a potential solution to the difference-deficit controversy. Sociolinguistics (e.g., Hymes, 1967; Labov, 1970a & b) believe that language development must be evaluated in the context of the communicative demands of the child's speech community. They suggest that the LC child does not react to the communicative demands of the classroom in the same way as the MC child, and thus their use of language in the classroom differs.

Deficiency Hypothesis

Many studies have shown that the MC child consistently performs better than the LC child on measures of standard phonology, syntax and vocabulary. The deficiency theorists believe these studies show that the LC child is linguistically retarded.

Differences begin to appear at very early ages. Irwin (1948a & b) collected phonological data from infants who ranged in age from one to thirty months. He found that MC children produced a greater variety and frequency of phonemes than did LC children. The differences became significant by the age of 18 months. In another study, Wachs, Uzgiris and Hunt (1971) compared a group of LC and MC infants on the basis of their vocal imitations and their ability to relate words to objects. During an observation period, MC infants, aged 15, 18 and 22 months, uttered more words than their LC agemates. They also produced more words in reference to objects in the environment than the LC infants. C. Deutsch (1964) hypothesized that poor auditory discrimination skills might explain the high incidence of reading retardation among LC children. Forty pairs of words were read to LC black children with reading problems and to a similar group without reading problems. Thirty of the pairs differed in initial or final sounds and 10 were similar. The child had to say whether the sounds were the same or different. The prediction that weak readers had poorer auditory discrimination than good readers was confirmed. In a similar experiment, it was found that first grade MC children performed better on an auditory discrimination task than their LC agemates (reported in M. Deutsch, 1967). On the basis of these studies

the deficiency theorists claim that MC children not only produce more phonemes at younger ages, but that they are also superior at recognizing and using these sounds at later ages.

Many studies have been done to compare the vocabulary development of LC and MC children. Lesser, Fifer and Clark (1965) for example examined the pattern of mental abilities among Chinese, Jewish, Negro and Puerto Rican first grade children from LC and MC homes. They measured verbal ability with a vocabulary test. Even though the four groups showed different levels of ability on this test, the LC pupils from each ethnic group performed consistently poorer than their MC counterparts. John and Goldstein (1964) found that LC children had more difficulty naming action words such as tying than content words such as coke. Wight, Glonziger and Keeve (1970) asked LC and MC five-year-olds to name a variety of vegetables. They found that MC children could name more than LC children although they did not differ in the range of vegetables which they actually had eaten. The data suggest to these theorists that the LC child does poorly on vocabulary tests, not because he has had less experience with the referents to be named, but because he has had less experience attaching labels to his nonlinguistic experiences.

Other studies have been done to compare the grammatical abilities of MC and LC children. Loban (1963) found that

LC children used fewer structural variations than MC children when speaking and writing. This was particularly marked for subordination (e.g., MC children used more adverbial dependent clauses). Several investigators have found that LC children do not imitate, comprehend or produce so wide a variety of syntactic structures as MC children (Nurss & Day, 1971; Osser, Wang & Zaid, 1969). The results of these studies have led deficiency theorists to infer that the LC child does not operate at the same level of grammatical complexity as the MC child. Thus, they view his language as retarded.

The deficiency theorists believe that the LC child cannot adequately express or understand many subtle and abstract thoughts because of the limitations of his language, He does poorly in school because his poor language reduces his capacity for logical thought.

According to the deficiency theorists, a proper environment is extremely important for language development. To acquire language a child must have a proper model to "imitate" and he must receive reinforcement or feedback for his utterances. These beliefs have been greatly influenced by the classical learning theorists (cf. Mowrer, 1960; Skinner, 1957). Furthermore the deficiency theorists believe that the child's language acquisition will be greatly influenced by the quality and quantity of stimulation and experience in his <u>early</u> environment. This belief is based on two kinds

of evidence (reviewed by J. McV. Hunt, 1961): (1) sensory deprivation in early life affects the learning ability of animals in later life, and (2) children raised in orphanages or other institutions who have limited opportunity to interact with adults and a minimum of stimulus variety seem retarded in many ways. The deficit theorists, attempting to explain why the LC child has poor language, draw a parallel between the circumstances of animal deprivation and orphanage studies.

All deprivation theorists agree that the stimulation which the LC child receives from his environment is, in some way, inadequate. Some (Ausubel, 1965; M. Deutsch, 1967) feel that the range of stimuli in the LC home is minimal, repetitious and unorganized. They view the quality of the environment as corresponding to the quality of the language that is developed in it. Therefore the LC child's language will be unorganized and restricted.

Other deficiency theorists (C. Deutsch, 1964; J. McV. Hunt, 1964) feel that the LC child's environment has excessive stimulation. They describe the LC home as noisy and overcrowded. Because so many people live in so small a space, there is a constant variety of confusing activities which usually occur to the accompaniment of a radio or TV blaring in the background. In her experiment (described on page 3), C. Deutsch hypothesized that the LC child who had become habituated to the constant noise in his environment

would have poor auditory discrimination and develop poor language. The recent study by Wachs, Uzgiris and Hunt (1971) lends support to her hypothesis. They found that the intensity of stimulation (e.g., noisiness of the home) and the variety of change in circumstances to which the infant was exposed (e.g., the number of times the mother and child went outside the neighborhood) were negatively correlated with his verbal ability. LC children were more often found in home circumstances where such conditions prevailed. These authors suggest that the LC child may suffer from an excess rather than a deprivation of stimulation. Thus, it may be that the LC child lives in a speech-filled environment; but he cannot take advantage of the little directed toward him because he has learned to tune it out.

The deprivation theorists also believe that the LC child's language is poor because parent-child interactions are inadequate (Jensen, 1967). This hypothesis is based upon very little data. Rather, the hypothesis is based on the notions that there is no father figure present in many LC homes and that the LC working mother is less involved in raising her children than the typical MC mother. Many argue that the LC mother does not spend so much time talking and reading to her child with the result that he is behind in language acquisition (cf. Jensen, 1967). They also suggest that she uses syntactically and semantically impoverished speech when she does talk to him (cf. M. Deutsch, 1967).

Thus, the child lacks a good model from whom he can learn standard speech.

John and Goldstein (1964) suggest that the child learns how linguistic labels can be applied to different situations through speaking with an adult who uses these labels. The LC child may not have the opportunity to engage in these kinds of interactions. The results of the study by Wachs, Uzgiris and Hunt (1971) offer empirical support for this hypothesis. They found that MC children had more opportunity to hear vocal signals for specific objects and actions from their parents than LC children, and that this correlated positively with language development.

In another study, Milner (1951) examined the relationship between reading readiness in first grade children and patterns of parent-child interaction. Two groups of children were studied: one high in reading readiness, and the other low in reading readiness. She found that all children in the high group except one were from the MC and that all children in the low group except one were from the LC. The children who were high in reading readiness and MC came from a verbally enriched environment where there were more books, where the children were read to more often by their parents, and where they spoke to their parents more often at meal time than did the children who were low on reading readiness and LC.

The results of a study by Irwin (1960) suggest that if LC mothers were to talk to their children more, then the children might be more advanced in language. He persuaded a group of LC mothers to read to their children for 20 minutes a day from the age of 12 months until 30 months. He found that these children increased in both the kinds and the frequency of speech sounds used.

These studies seem to suggest that the LC child's limited opportunity for verbal interaction with an adult results in a retardation of his ability to comprehend and use language. One last study by Hess and Shipman (1968) specifically points out differences in MC and LC mothers' language which affect the linguistic and cognitive development of their children. They interviewed LC and MC mothers of preschool children in their homes to obtain a sample of the mother's speech. The speech samples were analyzed on a number of linguistic parameters. The MC mother's use of abstract language was highly related to her child's cognitive performance. Using multiple and partial correlation techniques, Hess and Shipman found that language abstractness was a much more powerful predictor of the child's cognitive performance than either mother's IQ, child's IQ or social status. On the basis of these data, Hess and Shipman suggested that there is an abstraction factor in the MC mother's language which has far-reaching

effects on her child's intellectual development. This finding supports the notion that the LC child is exposed to a less sophisticated model of speech than the MC child.

These mothers were then asked to teach their children some simple tasks (e.g., a sorting task, and etch-a-sketch), and the children were retested by an examiner to determine how well they had been taught. MC mothers were more successful teachers than LC mothers. Hess and Shipman suggest that the language used to teach the child had a great influence on how well he learned the task. The successful MC mothers verbally oriented their children toward the task, verbally organized the concepts to be taught, used specific language, demanded a higher ratio of verbal to physical feedback, and verbally communicated praise and expectations to their children. The LC mothers, in general, did not use these strategies. They used coercion to get their child's attention and stressed performance of the nonverbal aspects of the situation. These mothers used a minimal amount of verbalization when teaching. Because the concepts to be taught were poorly organized, the child could not successfully imitate the task. This led to frustration and to attempts to avoid the task. Hess and Shipman's work not only supports the deficiency theorists' contentions that the LC mother does not adequately promote the cognitive and linguistic growth of her child, but it specifically points

out instances of how the LC mother fails to meet linguistically the needs of her child.

Even though the deficiency theorists believe that the LC child has a deficient language which results from his inadequate environment, they believe that he can be helped. They have proposed a number of specifically designed educational programs to provide a verbally enriched environment for the child. Even though programs differ in their specific details, all are based on the common assumption that the child can overcome the debilitating circumstances of his home environment. A child, placed in such a program at an early enough age, should achieve the same level of language development as his MC agemate by the time he reaches school.

One program which has received much attention is that developed by Bereiter and Englemann (1966). They claim that the LC child's speech is so underdeveloped that it does not consist of distinct words, but of whole phrases and sentences that function as giant words. Because he uses these "giant words" the child fails to learn that sentences can be taken apart and recombined. From their observations of LC speech, Bereiter and Englemann concluded that the LC child must be taught the following basic language skills before he will be able to communicate in a logical fashion: the use of articles, prepositions, conjunctions, short verbs (be, have, do) negatives, plurals, tenses and indefinite

pronouns. These are taught by a form of patterned drill similar to that used by second language teachers, and the children are actively forced to learn these basic language skills. Bereiter and Englemann imply that the child who learns the logic of English grammar will not only be able to communicate properly, but will also be able to think logically. The success of these programs remains to be determined.

Difference Hypothesis

A group of linguists (commonly referred to as difference theorists) have openly questioned the assumptions underlying the deprivation hypothesis. Their criticisms and suggestions for the understanding of social class differences in speech have been greatly influenced by many of the assumptions that linguists currently make about language in general.

Linguists regard language as an innate behavior that will develop naturally in all children who are exposed to even a small amount of language (cf. Chomsky, 1965; Lennenberg, 1967). They contend that there are no primitive or deficient languages and that all languages share the same underlying universal principles (Greenberg, 1963; Labov, 1971). Furthermore they have demonstrated that a speaker's overt language, his performance, is not always commensurate with his internal capacity to use or understand language, his competence (Chomsky, 1965).

These linguistic principles hold important implications for the study of social class differences in language. First, one cannot conclude that the LC child has been linguistically deprived since he has been exposed to some language. Second, one cannot explain the LC child's linguistic problems by the fact that he has been exposed to a deficient language for he has not. Third, any language differences found between LC and MC children may be attributable to differences in performance rather than in competence.

Difference theorists (cf. Baratz, 1970; Labov, 1970a) who have studied LC black children's language argue that these children speak one of the many nonstandard forms of English which differs structurally from the so-called standard form. These investigations have been restricted to the study of LC black speech and have not included studies of LC white speech. The difference theorists also attack the deficiency theorists for their general ignorance of linguistic principles.

Difference theorists have tried to demonstrate empirically that the ghetto child's language conforms to a set of phonological and syntactic rules different from those of Standard American English (SAE). In one study, Baratz (1969) asked third and fifth-grade white MC and black LC children to repeat sentences spoken in standard English (e.g., I asked Tom if he wanted to go to the picture that

was playing at the Howard) and in Negro Nonstandard English (NNE) (e.g., I aks Tom do he wanna go to the picture that be playin at the Howard). White children made fewer mistakes repeating the SAE sentences while black children made fewer mistakes repeating NNE sentences. However, the black children did not simply fail to repeat the standard sentences nor did they produce a jumble of words; quite to the contrary they "translated" many structural features of the standard sentences into NNE. For example, in response to the sentence "I asked Tom if he wanted to go to the picture that was playing at the Howard," 97% of the black children responded with "I aks Tom do he wanna go to the picture at the Howard." Similarly, the white MC children consistently translated the nonstandard sentences into SAE.

This study suggests that LC children do use a different set of well-organized phonological and syntactic rules than MC children. If LC children's language was really deficient, they would be expected to have had as much difficulty repeating correctly the NNE sentences as the MC children. Furthermore, one would have expected random linguistic patterns to appear when the black children attempted to repeat the standard sentences.

Baratz and Povich (1967) analyzed speech samples of black Head Start children. They found that these children operated at a sophisticated grammatical level comparable

to the MC children when their own language was evaluated within the context of NNE rules. Thus, certain difference theorists have shown that the LC child uses a form of English as highly structured as the MC child's. In fact, Entwistle (1970) has argued that the ghetto child would certainly be judged as more advanced than the MC child if one were to assess linguistic ability in two codes (SAE and NNE).

After examining the assumptions underlying the deficit hypothesis, the difference theorists have reached two conclusions: first, that the deficit theorists have misinterpreted the results of studies showing class differences on measures of standard speech; and second, that deficit theorists have no basis for concluding that stimulation in the LC environment is inadequate for linguistic development.

The difference theorists criticize the deficit theorists' belief that there is only one correct way to speak a language and that any deviation from the standard represents a deviation from logical thought. The belief that there is only one proper form of a language has led the deficiency theorists to compare the LC child's language to the norms of the standard dialect rather than to the norms of his own dialect. The difference theorists argue that looking at class differences within such a framework can lead to un-

warranted conclusions. For example, on the basis of a sound discrimination task, described previously, C. Deutsch concluded that LC children had poor auditory discrimination. Many of them judged pairs to be alike when, in fact, according to standard phonological distinctions they were different. Baratz (1970) criticized this interpretation by arguing that the phonological rules used by NNE speakers differ from those used by SAE speakers in ways which could bias Deusch's results. Many distinctions made in SAE (e.g., men-mend) are not made in NNE. Thus, a nonstandard speaker might well perceive as similar many standard minimal pairs, just as a native speaker of English might perceive no difference between the French words "thé" and "tes". The results of Deutsch's study may merely show that NNE speakers who are not so familiar with the phonology of SAE do not differentiate these contrasts out of context.

Linguists complain that those who believe that the LC child has an inadequate language do not understand the basic principles of the language that the child is using. Bereiter, a vocal spokesman for the deficiency theorists has maintained that the LC child is so underdeveloped that he is almost nonverbal. For example, after observing that LC children say "They mine," he concluded that the LC child cannot produce logical expressions. However, linguists have found that copula deletion follows very structured rules in

NNE. Thus "They mine" is not an illogical expression but one which the child has constructed according to the rules of his grammar (see Labov, 1970a, for a more detailed criticism).

The difference theorists also believe that LC children's performance on vocabulary tests reflects the fact that typically used items are oriented toward MC culture. Their poor performance does not reflect an inability to attach labels to nonlinguistic referents (cf. Moore, 1971).

The difference theorists also maintain that there is no basis to the claim that the LC child comes from a deprived environment. Rather, they believe that both the LC home and the culture itself are verbally stimulating (Labov, 1970a). Furthermore, they reject the claim that the LC mother does not adequately promote the linguistic development of her child (Baratz & Baratz, 1970).

Deutsch is criticized for her belief that the LC child lives in a "noisy" environment. As Schultz and Aurbach point out (1971), what is noise to the MC investigator may, in fact, be a very meaningful stimulus to the LC child. Also, the child who presumably is continually exposed to a TV set or a radio is exposed to language.

The deficiency theorists' belief that the LC mother does not use language efficiently when teaching her child new tasks or provide her child with adequate linguistic

feedback has been criticized by the difference theorists on four grounds.

1. Investigators have only examined the kinds of behavior used by MC, but not by LC mothers. This does not mean that the LC mother is inadequate; but merely that she acts differently toward her children than the MC mother.

2. Recent evidence (Brown, Cazden & Bellugi, 1969) indicates that parents in general do not frequently correct grammatical mistakes made by their children. Instead, they correct statements which are inconsistent with reality (e.g., No, that's not a truck that's a car). Thus, the LC mother may not provide her child with "appropriate" linguistic feedback; but then neither does the MC mother.

3. The difference theorists (Schultz & Aurbach, 1971) question whether verbal communication is the most efficient means for the child to learn and be taught certain skills. It may be that the behavior which Hess and Shipman interpreted as inefficient teaching was the LC mothers' attempt to foster independence and ability to cope with problems.

4. Stewart (1964) has observed many cases in which second and third generation Washington, D.C. families have parents who speak a form of SAE while their

children speak a form much closer to that spoken by recent southern immigrants. This implies that the child learns certain aspects about speech from others than his parents.

The difference theorists generally feel that the compensatory educational programs which assumed that the LC child had a language deficit and that he came from an inadequate environment have failed (cf. Cicirelli et al., 1969). The deficiency theorists attribute such failures to the fact that intervention did not begin early enough (Caldwell, 1967) or to the possibility that the participating children were genetically inferior (Jensen, 1969).

The difference theorists feel that such programs have failed because the LC child does not have a language deficit and does not come from an inadequate environment. Therefore he does not benefit from these programs any more than would a MC child.

The difference theorists agree that the LC child has problems in school which are due to language. However, while the deficiency theorists advocate changing the child to fit the demands of the system, the difference theorists would change the system to fit the needs of the child. They argue that the school must acknowledge the different patterns of language and behavior which the LC child brings to the classroom. The majority of these children do not have

learning deficits; but they are unfamiliar with the language used in the school room. New skills and patterns of behavior must be taught to the LC child within a familiar context (i.e., his language and his culture). A prime goal of the educational system should be to produce a bicultural and bidialectal child.

The difference theorists' main contribution to the understanding of LC and MC linguistic differences has been to force other experimenters to consider the possibility that the LC child's dialect is not structurally inferior to the standard form and that the child's language capacity must be evaluated with reference to his own dialect (cf. Nurss & Day, 1971; Osser, Wang & Zaid, 1969).

Sociolinguistic Approach

So far the deficit-difference controversy has focused on attempts to explain the grammatical and phonological difference between LC and MC speech. Sociolinguists (e.g., Hymes, 1967) believe that language acquisition also involves learning how to use language. Hymes (1967) has called this knowledge "communicative competence". The child must learn such things as when to speak, when to remain silent, which variety of language to use, what topic to speak about and to whom he should speak.

The sociolinguists believe that language differences may reflect individual's or group's diverse reactions to

situational variables. Thus, the LC child in addition to speaking a different dialect than the MC child may also react differently to certain situational variables. Sociolinguists have attempted to explain social class performance differences within this broader framework. They believe that language should only be studied within the context of the situation in which it was generated and not as an isolated behavior.

The theory of Basil Bernstein (1970) represents an early attempt to study languages in relation to the contextual demands of different situations. Bernstein has combined psychological, linguistic and sociological principles to describe differences between LC and MC speakers. He distinguishes two fundamental types of linguistic codes: one elaborate, the other restricted. Each code serves a different function. Restricted codes arise and are used when all members of a group share an extensive set of experiences, expectations and beliefs. The main aim of this kind of group is to promote group solidarity and to reduce the individuality of its members. The function of language in this situation is to increase communal bonds by minimizing the individual expression of experiences and to express authority and control. Language is redundant for the explicit expression of intentions and beliefs for these are commonly held by all members of the group. As a result

lexical and syntactic diversity is minimal and the meanings that are conveyed by a restricted code are implicit, particularistic and concrete.

Elaborate codes arise when the culture stresses the importance of the individual over the group and when the intentions of the speaker cannot be taken for granted by other group members. In such a situation, there is a wide diversity of experiences and intentions. The elaborate code allows speakers to make explicit their intentions, experiences and beliefs so that they may be shared by other members of the group. As a result, the elaborate code is an extremely flexible form of speech which has available a high degree of syntactic and lexical options. It can be used to convey meanings that are abstract, universalistic and explicit.

Bernstein (1970) cites an example which might clarify some of the distinctions he makes between an elaborate and restricted code. He describes an experiment done by Hawkins (1969) who gave five-year old children a series of pictures which portrayed a sequence of events and asked them to tell the story represented by these pictures. The first story typifies the speech of an elaborate code user; the second, a restricted code user.

1. Three boys are playing football and one boy kicks the ball and it goes through the window--the ball breaks the window--and the boys are looking for it--and a man comes out and shouts at them because they've

broken the window--so they run away and then that lady looks out of her window and she tells the boys off.

2. They're playing football and he kicks it and it goes through there--it breaks the window and they're looking for it and he comes out and shouts at them because they've broken it--so they run away and then she looks out and she tells them off.

In the first story, a listener would not have to see the pictures to understand what the child was talking about; the narrative is context-free. In the second story, this is not true. One would have to be familiar with the context to understand what the child was talking about. In the first case, the child does not take the experiences of the listener for granted. The second child, however, assumes, perhaps erroneously, that the listener shares the same experiences as himself; and thus makes his meanings implicit.

Bernstein believes that these codes represent idealized forms of speech that LC and MC speakers actually use. He believes that the LC speaker has access to a restricted code because he only interacts in situations which emphasize group solidarity. MC speakers, on the other hand, have access to both codes because they move from situations of high group solidarity to situations of individual solidarity.

Bernstein explicitly states that he does <u>not</u> wish to imply that LC children are linguistically retarded (1970).

He believes that they do not differ in the understanding of the rule systems of the language, but that the LC child and the MC child use language for different purposes because of differing demands from their respective social organizations. Because the MC child interacts in situations which encourage diversity, he has access to a more flexible form of language.

Although Bernstein's theory represents a "sociolinguistic" approach to the study of class differences in language, some researchers have criticized his belief that the LC child has access only to a restricted code (cf. Houston, 1970). Bernstein's conclusions may indeed be overgeneralizations since the source of his original data was relatively limited. His original theory was based on observations of LC and MC adolescent speech. The testing situation was always the same: the subjects were asked to talk about a specific topic under the guidance of an authority figure (an experimenter). The sociolinguists feel that such traditional experimental methods are inadequate for assessing linguistic abilities. They believe that an individual's linguistic performance does not represent his linguistic capacity, but rather a complex interaction of the characteristics of that specific testing situation and the social meaning that these have for the speaker. Thus, they believe that generalizations about an individual's linguistic abilities (either

grammatical or communicative) cannot be made across all situations, but must be limited to the context in which the observations were made. A fair estimate of the individual's capabilities can only be made after he has been observed in a variety of situations performing a wide number of linguistic tasks.

Unfortunately, most conclusions about the nature of LC language have been based upon observations made in one structured situation in which the examiner asks the subject a series of questions or asks him to perform one linguistic task. Labov (1970a) provides an example of the kind of conclusions that could result from looking at language in only one situation. A black boy walked into a room where an interviewer asked him to talk spontaneously about "fighting". He did not. In the ensuing dialogue, the examiner asked the boy many questions about fighting. In response, the boy answered monosyllabically. If the boy's verbal performance was taken to be a valid measure of his competence, one would conclude that he was essentially non-verbal, with a limited vocabulary and an inflexible sentence structure. Labov argues that such a ghetto child perceives such situations as threatening. He says as little as possible so that nothing can be held against him. This same boy was later observed in a less threatening situation with a friend present. All three participants were sitting on the floor eating potato chips. The experimenter used

taboo words in his questions. The ensuing behavior was very different from that observed in the more structured situation. The boy now competed with the others to talk and used diverse grammatical structures to express his thoughts. From observations in this latter situation one might conclude that the subject demonstrated great control over language and that he communicated effectively.

A similar conclusion was reached by Houston (1969) who collected speech samples from a group of LC black elementary school children in a number of different situations. She concluded that these children had two distinct speech registers. They used a nonschool register with friends, parents, and other trusted people in an informal situation, and a school register with teachers and other adults in a formal setting. In the formal setting, the children's utterances were short, their rate of speech was slower, their pitch and stress different and the content was limited and not expressive of their emotions and feelings. In the nonschool setting, these children constantly engaged in creative verbal interaction. Houston concluded that most assumptions about the rigidity or inferiority of LC language have been based on observations of the school register.

Looking at speech in more than one context has also added information to the study of dialect usage. Labov

(1970b) has found that dialectical features will vary across situations. He found that NNE speakers will use some forms of standard English in certain situations but not in others.

Studies such as Labov's and Houston's show that the LC child's linguistic abilities are similar to the MC child's. Differences in performance in similar situations can be accounted for by differences in reactions to situational variables.

In a recent article, Cole and Bruner (1971) have reviewed the research on social class differences and have concluded, "While it is very proper to criticize the logic of assuming poor performance implies lack of competence, the contention that poor performance is of no relevance to a theory of cultural differences in cognitive development also seems an oversimplification" (p. 871). The fact is that LC children do perform poorly in school, and this failure is associated with linguistic difficulties. Although the LC child may have the same basic linguistic abilities as the MC child, he does not appear to apply these skills in as wide a variety of situations which demand appropriate language for successful adaptation. For the LC child to be successful in the classroom he must learn how to apply the skills that he has in his repertoire. As Cole and Bruner suggest, the LC child may be too involved

in his ghetto culture to learn the appropriate uses of language outside his culture.

A recent study by Philips (1970) supports this notion. She found that Indian children in Oregon were almost silent in the classroom even though they talked a lot outside the classroom. She suggested that the Indians didn't speak in the classroom because of differences between Indian culture and school culture. On the reservation, roles and skills are typically learned by passive observation. When the child thinks he has mastered a skill, he tries it out privately so that no one else will know if he fails. Learning conditions in the classroom, however, are usually not based on these principles. A child is often asked to display his skills publicly while he is still acquiring them. If he fails, his errors are made known to all. Thus the child remains silent in the classroom because he is not familiar with the conditions in which it is appropriate to speak (e.g., communicating to the teacher in front of a group about facts with which he is unfamiliar). LC children, in general, may have language difficulties in the classroom because they do not know what the communicative demands are and because they do not know how to behave appropriately to meet these demands.

The difference theorists and the sociolinguists have shown how dialect and situational variables may influence

language in the classroom. However, to date, there has been no formal attempt to characterize the classroom language of the LC child along the dimensions of use and grammar. Such a study might help us understand the original problem of the LC child's failure in school. Several possibilities must be considered and tested. Differences in phonology and syntax may influence the teacher's reactions to the child. If a child uses a nonprestigious dialect he may be treated in a way which is conducive to failure (Tucker, 1969; Williams, 1970). Dialect differences may also hamper the child's attempts to read or write the standard form of his language. It might be that the child does not know how to meet the communicative demands of the school. He may not know when to speak or to remain silent. He may not know what topics are appropriate in the classroom. He may not know what variety of language (standard vs. nonstandard; elaborate vs. restricted code) to use and so fail to communicate with the teacher. The teacher might conclude that the child does not know the information when all he lacks is the appropriate means for conveying it.

The development of satisfactory compensatory programs requires a knowledge of those aspects of language necessary for educational success which the LC child does not exhibit in the classroom. The present study is a step toward this goal. It involves a comparison of certain receptive and

productive language skills of white LC and MC Montreal kindergarten children. It has been designed to determine what differences exist in grammar, vocabulary and classroom language usage and to assess how these abilities change over the first year of formal schooling.

METHOD

In the classroom, speech is the primary means of communication between teacher and student. To be educationally successful, a child must learn what the communicative demands of the classroom are and how to behave appropriately to meet these demands. Typically this means that he must become familiar with the syntactic and phonological rules of standard English. He must also learn the proper behavioral patterns for language usage (e.g., when to speak, what to talk about, what code to use and to whom one should speak). In kindergarten, the child is given some opportunity to develop these abilities.

In this study, the child's understanding and usage of several grammatical and communication abilities was examined. Measures of the child's understanding and usage of the grammatical rules of standard English were obtained from a number of tasks which will subsequently be described in greater detail.

1. The child's comprehension of specific grammatical rules was tested by means of an object manipulation test (devised by Bellugi, 1969).
2. His production of specific grammatical forms was tested with a modified version of the Michigan Oral Language Production Test (1969).
3. His knowledge of one specific grammatical construction, the Wh-question, was tested by means of a

procedure devised by Bellugi (1967).

4. A further indication of his production of standard grammatical rules was provided by a syntactic analysis of a story which the child had heard and retold.

5. In addition, he was given an imitation test to assess his understanding of certain grammatical structures. This test was originally used by Fraser, Bellugi and Brown (1963) to examine the hypothesis that a child could imitate a certain sentence before he could comprehend or spontaneously produce it. Menyuk (1963) who used an imitation test with young children, concluded that their success in repeating these sentences depended on their understanding of the structure of the sentences.

For all the grammatical tests, an error was defined as a deviation from the standard form.

The following tasks were used to measure the child's use of language for effective communication. These are called communication tests and will be described later in greater detail.

1. The child's ability to use language for descriptive purposes was tested by having him describe a series of abstract designs. This technique was used

by Krauss and Rotter (1968), and later by Heider (1968), to measure communication abilities in children.

2. The child's ability to use language for narration was tested by having him retell a specific story that had just been read to him.

3. The child's knowledge of certain words was tested by having him name pictures of familiar objects encountered in his environment. The stimuli were previously used by Templin to test sound discrimination (1967).

4. To further measure vocabulary, the child was asked to name objects that fell in certain categories.

Not all aspects of classroom language were examined in this study (e.g., phonology). It should be clearly understood that when we talk about the child's knowledge of classroom language, we are referring only to those abilities which were tested. Classroom language, of course, represents a complex array of skills; but we believe that we have tapped some of the important ones.

Subjects

Twenty children were selected from a school in a LC area and twenty children were selected from a school in a MC area. All subjects were white and came from English-speaking homes. None had been to school previously. There

were 10 boys and 10 girls in each group. The mean age of the LC and MC children upon entering school was 5 years 5 months.

The children were selected on the basis of their father's occupation which served as an index of social class. The fathers' occupations were obtained from the school and verified through the census bureau at City Hall. All fathers were employed and their occupations were rated on the Blishen Scale (1958). The mean rating for the MC group on this 7 point scale was 2.3. The mean rating for the LC group was 6.1.

All children (except one in the LC group) came from homes where the mother and father lived together. All children also had equal opportunity for appropriate medical care. They came to school well-fed and properly dressed. None of them suffered from visible emotional, physical or speech problems. This information was obtained from the teachers, school nurses and principals.

Schools

Because it was impossible to find one school which satisfied all criteria for subject selection we selected two different schools within the same school board. It was hoped that the schools would have similar program goals and curricula.

The structure of the kindergarten classes was the same. In each school, there were two different classes: one that met in the morning for two and a half hours, and a second that met in the afternoon for two hours. Half way through the year, the schedules were reversed so that pupils who had attended the morning class now came in the afternoon for two hours and vice versa.

In the MC school, 6 children were in one class, 14 in the second. In the LC school, 9 were in one class, 11 in the second.

Teachers

There were two teachers in each school. Both were present for the morning and afternoon classes. The four teachers were told that the language development of their pupils was being examined and they were extremely cooperative. No mention was made of social class.

Tests

In the following section the construction, administration and method for scoring each test is described.

Imitation Test. The purpose of this test was to determine the child's ability to understand various standard grammatical structures such as contraction or negation. Thirty-four sentences were constructed. Each sentence contained seven words and represented a different

grammatical construction (see Appendix 1). These grammatical constructions had previously been used by Menyuk (1963) and by Osser, Wang and Zaid (1969).

The child was told by the experimenter (E), "I am going to say something and I want you to say what I say. Remember I want you to say exactly what I say." The child was given two practice sentences (Appendix 1), and then each of the 34 sentences was read to him. After each sentence, he repeated as best he could, the sentence that he had just heard. The sentences were always presented in the same order.

Scoring. A sentence was considered correct if the child retained both the original grammatical structure and the meaning of the sentence. Thus, if the child substituted articles, made deletions or contractions or pluralized the whole sentence in a grammatically acceptable way, it was considered correct.

Every error a child made within each sentence was classified as a transformational, phrase structure or a morphological error. Transformational errors occurred when the child failed to use the correct transformational rule required for successful repetition of the sentence. For example, when repeating the sentence "Sit down on the new chair," the child may respond "You sit down on the chair" failing to note the deletion of you with an imperative. Phrase structure errors occurred when the child made

errors at the phrase grammar level of the sentence. For example, he might substitute, add or omit prepositions or articles (e.g., a dogs). He could omit or add a noun phrase or a verb phrase (e.g., is flying a kite), or he might use the wrong auxiliary (e.g., I was been to the store). Morphological errors occurred when the child used standard English inflections incorrectly (e.g., pluralizing a noun--childrens; failing to add the correct ending to the third person singular--he go; giving the wrong past participle for an irregular verb--he seed).

The number of errors of each kind in each incorrect sentence was counted and summed across the 34 sentences.

Vocabulary Test. The purpose of this test was to determine how well the children could supply labels for objects that are commonly referred to in the classroom. Eighty-nine stimuli were used (see Appendix 2).

The child was shown a picture of each object drawn on an 8" x 10" card. He was asked to name the object. If he gave the correct name, he was shown the next picture and asked to name it. If the child said he didn't know the name or if he gave the wrong name, E would define the word. For example, E gave the following clue for the picture of a piece of pie: "Sometimes we eat this for desert. It's called lemon... or apple ..." If the child still could not give the correct name, E told him and continued to the next

picture. All children were shown the 89 pictures in the same order.

Scoring. The number of incorrectly named pictures was counted. A synonym was considered correct (see Appendix 2 for acceptable synonyms). In no case did any child give a superordinate name for the object (e.g., "color" for the picture red).

Naming. The purpose of this task was to obtain another measure of the child's knowledge of common words. The naming task, interspersed throughout the vocabulary test, first appeared after item number two (see Appendix 2). The child was shown the picture of blocks and was asked to name it. After he had named the picture or had been supplied with the correct answer, E said, "Now I want you to name as many things that we play with as you can." The child was stopped after 30 seconds, and E continued with the next item of the vocabulary test until the next naming task occurred. The naming procedure was then repeated.

Nine categories were used for the naming task: toys, parts of the body, colors, furniture, things to ride, things to wear, things to eat with, animals and deserts. These naming tasks occurred after the first vocabulary word that could be subsumed under that category. For example, in the vocabulary test, block was the first picture of "things to play with" that the child saw.

Scoring. The following scoring procedure was used for each of the nine naming tasks.

1. The total number of items named within the thirty second time limit was counted.

2. The number of repetitions was counted. For example in naming colors, the following might occur: black, red, orange, black; or, black...black. In both instances, the second "black" was counted as a repetition.

3. The number of inappropriate responses made within each category was counted. For example, when naming furniture the child might give the name "ceiling". This would be scored as an inappropriate response.

4. A final score called Appropriate Names was computed for each category by subtracting the number of repetitions and inappropriate responses from the total number of items named. The number of Appropriate Names was summed across the nine different categories.

Object Manipulation Test. The purpose of this task was to see how well the child could comprehend a variety of commonly used standard structures. Sixteen different grammatical constructions were tested: active voice, singular and plural nouns, possessives, negative and affirmative statements, negative and affirmative questions, subject-verb agreement, negative statements with contractions, negative affix, reflexive verbs, comparatives, passives, conjunctions, double comparatives, reflexive vs. reciprocal

verbs, imperatives and if conjunctions. Comprehension was measured by the child's ability to manipulate objects in response to a command. The child had to comprehend the grammatical construction used in the command to understand how to manipulate the objects correctly. Objects for each problem were placed on the table before the child. E made sure that the child could identify all objects to be used in the command. For example, on the active voice subtest the child was shown a dog and a cat, and was asked to name both objects. E said, "Show me: the dog is chasing the cat." No cues to ordering of the action were given by the placement of the objects or by the way the child was asked to identify the objects.

Most items were taken from the "Grammatical Comprehension Test" (Bellugi, 1969). Each grammatical construction formed a separate unit of the test (Appendix 3). Depending on the subtest, there were from two to eight different commands. Every child received all subtests in the same order. Eight subtests were given on one day, the remaining eight were given on the following day.

Scoring. A score on a subtest was simply the number of incorrect items.

Abstract Design Test. The purpose of this test was to determine how well a child could describe a series of unfamiliar abstract designs to a listener.

Two practice sets of six cartoon objects, two practice abstract designs, and two sets of 12 abstract designs comprised the stimuli (Appendix 4). Four copies of each design were individually pasted onto the sides of 3-inch square wooden blocks. The blocks had holes drilled in them so that they could be stacked on wooden pegs. Three of the abstract designs were taken from those used by Krauss and Rotter (1968) while the remainder were taken from those used in a study by Samuels, Reynolds and Lambert (1969).

The child was seated at a table next to E and given six blocks stacked on a peg. The child was told that this was his stack of blocks. E then said "You see how my stack is just like your stack. The bottom picture on yours is the same as the bottom picture on mine." E pointed to each picture showing the similarity between the child's stack and her stack. Then she said, "Now look at what I'm going to do. I'm going to mess up all my blocks." E took the blocks off the peg and scattered them onto the table. Then she said "But now I want to put the blocks together to look like yours again. I'm going to tell you how you can help me. I'm going to turn my back so that I can't see your blocks and you can't see mine." E turned her back to the child so that the blocks were hidden from the child's view. Then she continued, "Now the way you can help me is

by telling me what you see on your blocks. Then I'll be able to find it on my blocks. So tell me about the bottom block...O.K., now tell me about the one on top of that one." She kept peeking to make sure that the child was describing each block separately and in order. When the child had named all six blocks, E said "Now let's see if our two poles look alike." The child was shown E's blocks which were always rearranged in the correct order. This was the practice trial and the pictures used were: boy, fish, hand, chair, car and dog. To insure that the responses on the practice trial did not bias his later responses, the child was then shown two different abstract figures one at a time and asked to tell about them. These blocks were not stacked. E added to each response, "Yes, and we can also say that it looks like a star, or it can be three circles or a potato chip with some circles linked together." These responses were added to explain to the child that he could give more than one name to each figure; and also that the figure could be described metaphorically, geometrically or both. This was the end of the practice trials.

For the abstract figures trials, the child was given a stack of six blocks. Each had a different abstract figure. E had an identical stack which she showed to the child. She then turned her back, took the blocks off her peg and scattered them on the table, and again explained

that her blocks were all messed up; but if they were put together properly they would resemble the child's. E started by telling the child, "Tell me about your bottom block." There was never any problem in getting the child to describe his block. After each of his responses, E said "Why do you think it looks like that? Could you tell me more about it?" This inquiry continued until the child said that was all he could do. E would then pick up one of her blocks and say to the child, without letting him see which one she had selected, "I think I have the right one." After he had described the six blocks, E showed her arrangement to the child. This arrangement was always in the correct order. The task was repeated with another six abstract designs. Each child received the same set of abstract designs in the same order.

Scoring. For each abstract design, every child gave at least one description. In addition he may also have given other descriptions as well as some explanations for these descriptions. The scoring procedure consisted of two parts: (1) the analysis of the descriptions and, (2) the analysis of the explanations.

1. Description Analysis. The child's descriptions were analyzed with regard to fluency, amount of information conveyed and clarity and explicitness. Some of the classifications used in this section were modifications of those used by Heider (1968).

a. Fluency. Fluency was measured by the number of different images that the child gave for each design. An image is defined as a piece of information about the figure. For example, "There's a circle and another circle" and "it looks like a man climbing the stairs" are images. If a child gave the same image twice for one design it was counted only once.

b. Amount of Information. Each image was then examined for the amount of information it conveyed. We were only interested in those images which gave no information. These were called "Poor Responses" (e.g., some lines; a design; it goes in and out up and around and down). These responses provided no information. They could be readily applied to any of the designs of the set.

c. Clarity and Explicitness of Images. The clarity and explicitness of the descriptions was assessed in two ways: (1) by an elaboration index which measured the frequency with which the child used certain features of speech to make his images easier to understand and (2) by an ambiguity index which measured the frequency of occurrence of certain features of speech that made his images more difficult to understand.

i. Elaboration Index. An elaboration index was computed for each child by counting the number of times he used any of the following strategies in

his descriptions:

--qualification (e.g., If it had another line it would be a cane);

--adjective (e.g., It looks like a skinny man);

--direction (e.g., On top there's a triangle);

--phrase or clause (e.g., It looks like a man climbing the stairs).

ii. Ambiguity Index. An ambiguity index was computed for each child by counting the number of times he used the following strategies in his descriptions:

--The child used words such as "thing" "here" "that" (e.g., There's a cat over here);

--The child didn't know the name of the object he was describing (e.g., It looks like, you know, a thing that a man puts his book on);

--The child used the same image to describe more than one design in the set of six abstract designs;

--The child used other vague terms to elaborate his responses (e.g., It's a carriage that goes around up and down).

2. Explanation Analysis. The explanations were analyzed for fluency and amount of information conveyed.

a. Fluency. Explanations could occur either in response to the question "What makes you think it

looks like that?" or they could naturally follow a response (e.g., It looks like a carriage because it has wheels). The number of explanations that each child gave was counted.

b. Amount of Information. The child could convey varying amounts of information to the listener about the image by means of his explanation. The following three measures represent varying amounts of information that were expressed in the explanations:

i. Egocentric Explanations. This explanation provided the listener with no information (e.g., It looks like a carriage because it has to be one).

ii. One Concept Explanation. This explanation provided the listener with information about one dimension of the image. The child might explain an image by its inferred parts (e.g., A carriage because it has a wheel and a handle), or he might refer to the shape of the design (e.g., It's a carriage because there's a square and a triangle). But he would only use one of these strategies.

iii. Multiple Concept Explanations. The child would refer to two or more dimensions of the image to explain his responses. In the explanation, "It looks like a carriage because the

circle at the bottom looks like a wheel," the child is using three different strategies to explain his image: shape, direction and part of the inferred object. This type of explanation was thought to convey most information of all.

Each explanation was classified into one of these three categories.

Scoring procedure. After E had refined the scoring method, she taught it to another scorer. The two evaluated the protocols independently, and whenever there was a discrepancy, the problems were discussed and resolved.

Production Test. Many of these test items were taken from the Michigan Oral Language Production Test (1969). The child was shown a series of four pictures: three were part of the Michigan Oral Language Production Test, the fourth was unrelated (Appendix 5). The child was asked a number of questions about each picture. The questions were structured so that the answers could provide information about the child's ability to produce the following grammatical structures: comparative, double negative, plural nouns, possessives, subject-verb agreement, past tense, past participle of irregular verbs, negative contraction, questions, imperatives, and the verbs be, have and do. For example, to test the child's knowledge of the possessives he was shown a picture in which a man is holding a fishing

rod. He was asked, "Whose fishing rod is this? This is the ..." If the child did not reply, the question was repeated. The child's knowledge of each construction was tested several times throughout the test (Appendix 6). There were 15 questions for the first picture, 10 questions for the second picture, 11 for the third and 11 for the fourth. All children were shown the pictures and asked the questions in the same order.

Scoring. The number of incorrect responses for each construction was counted. A total production score was obtained by summing all incorrect items on the test.

Wh-Questions. The purpose of this task was to investigate intensively the child's grasp of one grammatical construction: the Wh-question transformation.

The child was shown a doll and told to ask it 14 specific questions. These were introduced by E who said "Ask the doll..." (Appendix 7). Every child asked the doll the 14 questions in the same order. The questions were taken from a test by Bellugi (1967).

Scoring. The number of questions that were incorrectly asked was counted. A question could be incorrectly asked for one or more of the following reasons:

a. No inversion (e.g., When you will do it?);

b. Auxiliary or modal substitution (e.g., When would [vs. will] you do it?);

c. Wrong use of auxiliary; wrong use of auxiliary (e.g., What have you want?); Double auxiliary (e.g., What have you will want?); No auxiliary (e.g., What you want?);

d. Use of got with the do transformation (e.g., How did you got it?);

e. Repeating the command rather than asking the question (e.g., Ask the doll what she wants);

f. Use of the wrong pronoun (e.g., What does she vs. you want?);

g. Other.

The number of each type of error made within each incorrect sentence was counted and summed over the 14 sentences.

Story Telling. This technique, originally devised by John and Berney (undated) served two purposes in this study: (1) it provided a sample of speech suitable for grammatical error analysis, and (2) it provided data about the child's ability to narrate logically and explicitly a sequence of events that had just been read to him.

The story selected for this study, "Sylvester and the Magic Pebble" by William Steig (1969) had just arrived in Canada at the time of testing. None of the children had previously read it. At the time of retesting, all four teachers were asked if they had seen this book or heard about it from the children. None of them had. The children had also indicated that their parents had not bought

them this book; thus it seemed highly likely that they had only been read the story twice: once during the pretest period and once during the post test period.

The text of the story was rewritten to make it shorter and easier for the children to understand (Appendix 8). However, the pictures were left untouched and the text followed the pictures very well.

E read the story to each child. Immediately after the story was read, she gave the child the book and told him to retell the story as best he could, using the pictures as a guide. After this the only comment made by E was "Turn the page" or once the page was turned, "What happened here?" The child's retelling of the story was tape recorded and later transcribed.

Scoring. The stories were transcribed from the tapes. Pauses in the narrative were noted and false starts were ignored. The protocols were examined for: grammatical errors and explicitness and clarity with which the child retold the story.

1. Grammatical Analysis. All grammatical errors were counted and classified as either transformational, phrase structure or morphological errors. The kinds of errors represented by each category was previously described for the imitation scoring.
2. Explicitness and Clarity of the Narrative. The explicitness and clarity with which the story was retold

was measured by how much of the story the child retold and how explicit he made his references.

a. Amount of Story Retold. This was assessed by measuring fluency and narrative detail. The following were used to measure fluency.

i. Grammatical units. The number of grammatical units that the child used to retell the story was counted. A unit was defined as a group of words preceded and followed by a pause that expressed a complete thought. This measure was originally devised by Loban (1963). A unit may vary in length and in complexity. Each of the following exemplifies one unit:

--The donkey was scared because he saw a lion.

--He was scared.

--No.

ii. Conjunctions. Since clauses (subordinate and coordinate) were included in grammatical units and not counted separately the number of conjunctions used by each child within a grammatical unit was counted. This was thought to give an additional measure of fluency as it could account for the length of the grammatical

unit. A child who used conjunctions would have longer grammatical units and thus more output than a child who did not.

iii. Nominal Groups. The number of nominal groups that the child used in his narrative was counted. The nominal group is a feature of Halliday's "Scale and Category Grammar" (1969). The nominal group usually acts as a subject or complement within a clause. It is made up of three parts, only one of which is relevant to this study, the head. The head is an obligatory part of the nominal group and consists of either a noun or a pronoun. The following exemplify heads within nominal groups:

--It started to rain.

--The donkey with the stone in his hand

--They asked the dogs and cats and mice.

In this study, if a subject was deleted before a verb, this deletion was also counted as a nominal group (e.g., "The donkey saw the lion and was scared." Here there are three nominal groups: donkey, lion and "deleted he").

The number of nominal groups was used as an additional measure of fluency because it

was thought to be more sensitive to grammatical complexity than the measure of "grammatical units." Grammatical complexity may be an important factor in determining how much of the story is retold. For example, the statements: "Because he saw the lion, he got scared and turned into a rock" and "He turned into a rock" each contains one grammatical unit. However, it is clear that in terms of fluency, the first statement contains more output and is grammatically more complex. This difference is accounted for by using nominal groups as a measure of fluency. In the first statement there are five nominal groups; in the second there are only two.

iv. Narrative details. The following were used to measure narrative details:

--A list of the 48 most relevant details in the original story was prepared (Appendix 10). The number of these details retold by each child was counted.

--The number of irrelevant details that the child told was also counted. An irrelevant detail is either: a detail that is not important to the meaning of the story; a

detail that repeats one previously mentioned; a detail that expresses a thought that is inconsistent with the meaning of the story.

b. Referential clarity. The degree to which the child made his references explicit and clear to the listener was measured by examining pronoun usage.

i. The number of Pronouns. The number of pronouns used as heads in nominal groups was counted.

ii. Pronoun Reference. The pronouns were examined to determine whether the child had previously mentioned the noun to which the pronoun referred, and if he used a referent how clear the connection was. As a result a pronoun could fall into one of the following three categories:

--The pronoun is clearly referenced. Usually the noun is used immediately preceding the transition from noun to pronoun (e.g., "The donkey was scared and he wanted to go home.").

--The pronoun does not refer to any previously used noun. Hawkins calls these exophoric pronouns (1969).

--The pronoun has a noun referent but it is unclear for either of two reasons: the child has used two nouns in the previous sentence and then switches to two pronouns which are the same gender or number (e.g., The donkey saw the lion. He was scared. He walked away); or the noun to which the pronoun

refers appears several ideas back in the story. Between the noun reference and pronoun other nominal groups have appeared. The total number of exophoric and unclear pronouns was counted for each child. These are called ambiguous pronouns.

iii. Wrong Pronouns. The number of wrong pronouns was counted. These kinds of errors included number and gender changes (e.g., The donkey went outside. She found a stone.).

Scoring Procedure. E taught this scoring system to an independent observer. Both independently scored the protocols and later compared their results. Discrepancies were discussed and resolved.

Testing Procedure

There were three E's: myself and two female assistants. All had previously tested children. One of the assistants and myself did all the pretesting. The other assistant and myself did the post testing.

Before the formal testing began, the two pretest E's visited each of the four classes for three days to become familiar with the children. We were introduced as "Two ladies who are going to play some games with you." The time was spent playing and talking with the children, observing in-

struction that occurred, and helping the teachers if they needed assistance. We hoped that when the more formal testing began, the children would feel at ease. The pre-test began at the end of October, and lasted four weeks. The post test began at the beginning of June and lasted three weeks.

Pretest. We were assigned two separate quiet rooms in each school that were not used by any one else during the testing session. All 40 children were tested individually. Each was given the complete battery of tests. Some of the tests were administered to all children by the principal investigator: Vocabulary, Naming, Abstract Designs, Production and Wh-Questions. Others were given by the assistant E: Sentence Imitation, Object Manipulation, and Story Telling. Each child received the tests in the following order: Imitation, Vocabulary, Naming, Object Manipulation, Abstract Designs, Production, Wh-Questions and Story Telling. All children were given one test before the next test was begun. Each child was seen for approximately 15 to 20 minutes every other day for a total of approximately two hours. All children appeared to enjoy the testing sessions. There were never any problems in getting them to cooperate.

Test Interval. During the six month interval between the pre and post testing, the principal investigator visited each of the four classes three times to maintain contact with the children and to talk to the teachers about any problems that

might have arisen. The first testing assistant was replaced by the third E for the post test. She visited the classes once before the post test began. The children remembered the "two ladies who had played games" and did not mention that the original assistant had been replaced.

Post Test. The procedure was identical to that for the pretest.

RESULTS

This research was designed to provide data relevant to three general problems: (1) the relationship between grammatical and communication abilities; (2) the effects associated with social class upon school language when language abilities are tested in various contexts using a number of different measures; and (3) the effects associated with a year's schooling on these measured language abilities. Two types of statistical analyses were performed on the data: factor analysis and analysis of variance.

Factor Analysis

A factor analysis was performed on the data to provide a convenient framework for organizing a large number of dependent variables into meaningful units and to indicate the nature of the relationship that may exist between grammatical and communication abilities. This kind of information might shed further light on the sociolinguists' contention that language involves the acquisition of communication abilities as well as grammatical abilities.

Post test scores for 26 variables were selected for a factor analysis (Biomedical Computer Programs, 1970). These variables were:

1. Object Manipulation Test Errors
2. Production Test Errors
3. Wh-Question Test Errors
4. Abstract Designs Test Images

5. Abstract Designs Test Poor Images
6. Abstract Designs Test Elaboration Index
7. Abstract Designs Test Ambiguity Index
8. Abstract Designs Test Egocentric Explanations
9. Abstract Designs Test Multiple Concept Explanations
10. Imitation Test Transformational Errors
11. Imitation Test Phrase Structure Errors
12. Imitation Test Morphological Errors
13. Imitation Test Total Errors
14. Story Retelling Nominal Groups
15. Story Retelling Pronouns
16. Story Retelling Ambiguous Pronouns
17. Story Retelling Wrong Pronouns
18. Story Retelling Relevant Details
19. Story Retelling Irrelevant Details
20. Story Retelling Grammatical Units
21. Story Retelling Conjunctions
22. Story Retelling Transformational Errors
23. Story Retelling Phrase Structure Errors
24. Story Retelling Morphological Errors
25. Story Retelling Total Grammatical Errors
26. Naming Test Appropriate Names.

Because the number of variables used in a factor analysis should be somewhat less than the sample size, we selected those 26 variables which we felt to be the most inclusive.

The variables described in the Method section but not included in the factor analysis will be discussed in the next section when relevant.

Results of the Factor Analysis

Six factors were obtained from the factor analysis. These six factors accounted for 66% of the total variance. Only those scales with a loading greater than .55 are considered in the interpretation which follows (Appendix 10 shows the factor loadings). The six factors have been given the following interpretations.

Factor I (18% of the variance) is interpreted as "Productive Knowledge of Classroom Grammar."

Factor II (16% of the variance) seems best described as "Speech Output." The "Story Retelling Relevant Details" test was ignored for purposes of interpretation even though it loaded on this factor since it was discrepant with the other tests that loaded on this factor.

Factor III (12% of the variance) is interpreted as "Elaborated and Ambiguous Speech."

Factor IV (7% of the variance) is interpreted as "Egocentric Information."

Factor V (7% of the variance) is interpreted as "Grammatical Comprehension of Classroom English."

Factor VI (7% of the variance) is interpreted as "Communication of Relevant Content."

The results of the factor analysis suggest strongly that several dimensions are needed to describe classroom language ability, in particular that the mastery of classroom language depends on a knowledge of grammatical as well as communication abilities.

Analyses of Variance

To determine the effects associated with social class and schooling upon the various measures, separate 2 x 2 analyses of variance, with repeated measures, were performed on all the dependent variables, unless otherwise stated. The independent variables were social class (MC vs. LC), and time of testing (pre vs. post).

Because of the large number of dependent variables, the results of these analyses will be discussed in three different sections.

(1) The results for one selected variable from each of the six factors will be discussed in detail to examine the effects associated with social class and schooling on that measure in particular and the factor in general. Each variable was selected on the basis of its loading and consistency with the definition given to that factor.

(2) The results for the other variables which loaded on each of the six factors will be discussed briefly to provide further information about the effects associated with social class and schooling upon the children's language abilities.

(3) The results for the variables which did not load appreciably on any of the six factors will be discussed.

The results for the variables not included in the factor analysis will be discussed when relevant.

1. Effects associated with Social Class and Schooling on Language Abilities.

Factor I: Productive Knowledge of Classroom Grammar--Story Telling Grammatical Errors

Because this score represented the sum of morphological, phrase structure and transformational errors, the data were analyzed using a 3 x 2 x 2 analysis of variance. The independent variables were type of error, social class and time of testing. Table 1 presents the means for the various types of errors made by the MC and LC children on the pre and post tests.

Table 1

Story Telling Grammatical Errors

	Transformational	Phrase Structure	Morphological	Total
MC Pre	1.75	1.70	2.10	5.55
LC Pre	1.90	3.05	3.65	8.60
MC Post	2.70	1.70	1.20	5.60
LC Post	2.80	2.75	2.85	8.40

MC children made significantly fewer errors overall than did LC children ($F = 7.94$, $p < .01$, $df = 1,38$). There was no significant improvement over the year, nor was there a significant effect for type of error. There were, however, two significant interactions [time of texting x type of error ($F = 5.28$, $p < .01$, $df = 2,76$) and social class x type of

error ($F = 3.73$, $p < .05$, $df = 2,76$)]. An inspection of Figure 1 shows that the number of transformational errors increased from the pre to the post test, while the number of morphological errors decreased and the number of phrase structure errors remained constant. Figure 2 shows that LC children made more morphological and phrase structure errors than MC children, although both groups made an equal number of transformational errors.

Most of the phrase structure errors which were made involved an incorrect use of the auxiliary or an incorrect use of prepositions. There was a clear trend for LC children to make more of these types of errors. Seventy-five percent of the prepositional errors were due to the substitution of a wrong preposition for a correct one (e.g., He put the food in the rock). Most of the morphological errors resulted from the incorrect usage of irregular verbs (e.g., He seed). There was a tendency for the number of these types of errors to decrease from pre to post tests and for LC children to make more of these errors than MC children.

Even though there was no significant main effect associated with schooling, one might conclude that over the year there was an increase in the children's knowledge of productive classroom grammar on the basis of the following evidence. First, the number of errors made in relation to the amount of speech output decreased over the year

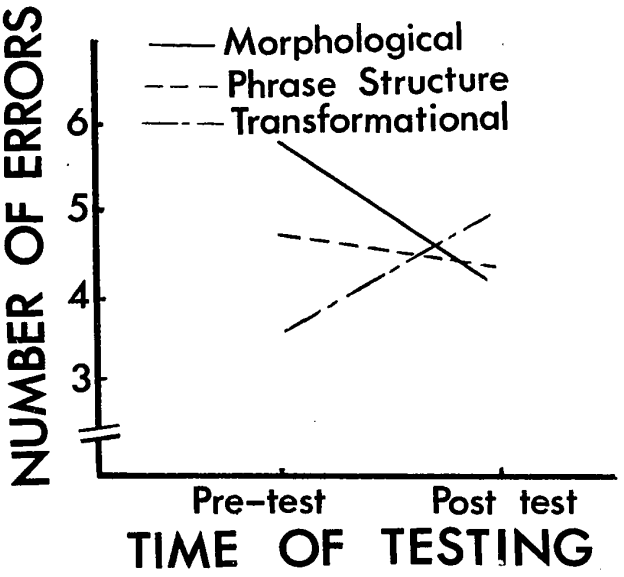

Figure 1: The relationship between type of error and time of testing for number of story telling grammatical errors.

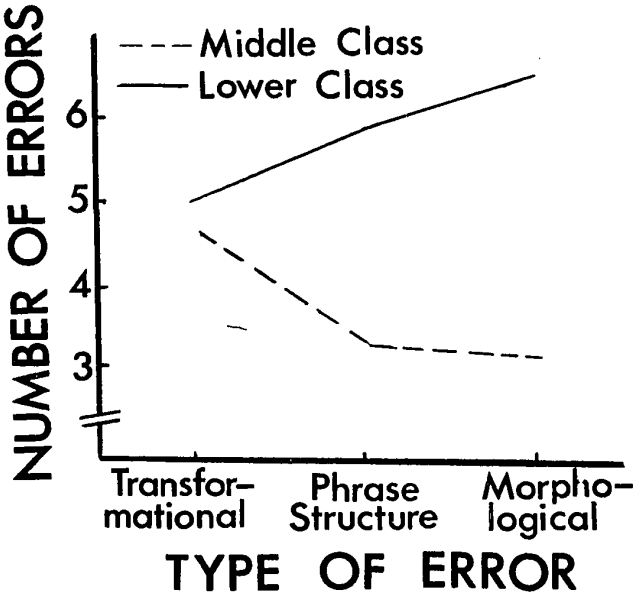

Figure 2: The relationship between type of error and social class for the number of story telling grammatical errors.

(i.e., the number of errors remained constant while speech output increased [see Table 3]); and second the increase in transformational errors on the post test probably inflated the final score, as morphological errors decreased while phrase structure errors remained constant. Furthermore, transformational errors did not load on this factor and should not be represented in the total score of grammatical errors. Only the sum of morphological and phrase structure errors should be considered as a valid measure of Productive Knowledge of Classroom Grammar. Table 2 shows the mean number of morphological and phrase structure errors made in relation to the amount of speech output calculated by using the number of nominal groups produced by MC and LC subjects on pre and post tests.

Table 2

Story Retelling Grammatical Errors in Relation to Output

	MC	LC
Pretest	.06	.11
Post test	.04	.08

When output is considered, MC children still made significantly fewer errors than LC children ($F = 17.99$, $p < .01$, $df = 1,38$); however, there was a significant decrease in the number of errors made relative to speech output for

both groups from pre to post test ($F = 6.99$, $p < .05$, $df = 1,38$).

MC children demonstrated a better productive knowledge of the morphological and phrase structure rules of classroom English, but both groups seemed to improve in this ability over the course of the year when their errors were examined in relation to their total output.

Factor II: Speech Output--Story Retelling Nominal Groups

Table 3 shows the mean number of nominal groups produced by MC and LC children on the pre and post tests.

Table 3

Nominal Groups

	MC	LC
Pretest	60.50	56.30
Post test	73.70	62.30

MC children produced more nominal groups than did LC children ($F = 5.17$, $p < .05$, $df = 1,38$). Pupils generally produced more nominal groups at the end of the year than at the beginning ($F = 15.25$, $p < .01$, $df = 1,38$). There was no significant interaction. This test, sensitive to grammatical complexity, may be a good measure of output.

Factor III: Elaborated and Ambiguous Speech--Abstract Designs Test Images

Table 4 presents the mean number of different images produced by MC and LC children on the pre and post tests.

Table 4

Images on Abstract Designs Test

	MC	LC
Pretest	20.80	19.00
Post test	28.65	20.90

Although the analysis revealed that MC children produced significantly more responses than the LC children ($F = 7.74$, $p < .01$, $df = 1,38$) and that there was an increase in the number of responses from the pre to post tests ($F = 14.81$, $p < .01$, $df = 1,38$), the significant interaction, shown in Figure 3 indicated that the MC children had increased their response production more rapidly by the end of the year than had the LC children ($F = 5.90$, $p < .05$, $df = 1,38$).

After each response the child was asked by E "Why do you think it looks like that? Could you tell me more about it?" This gave the child an additional opportunity to produce another image. An analysis of variance of the number of these questions asked by E revealed no significant main effects and no interaction (Appendix 11 shows these means). Both the MC and LC children were asked the

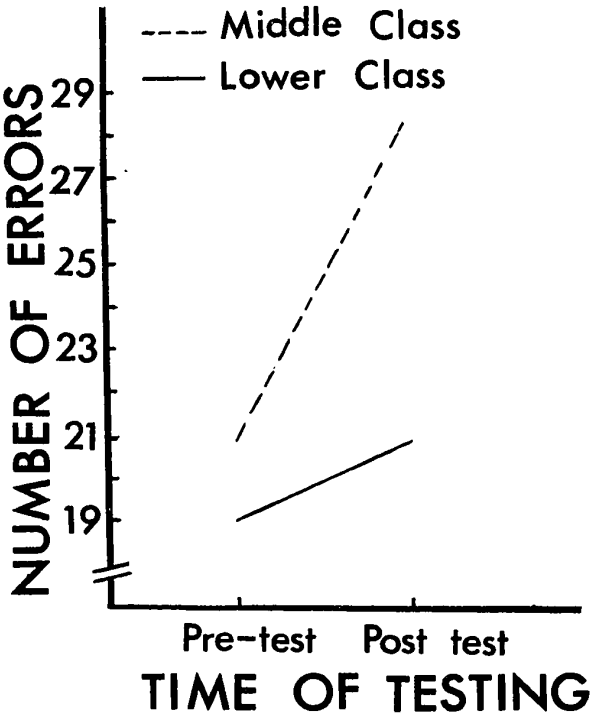

Figure 3: The relationship between time of testing and social class for the number of images produced on the Abstract Designs Test.

same number of questions by E and there was no increase for the post test. Therefore, one cannot explain the MC child's ability to give more images by the fact that E asked him more questions than the LC child. Nor can one explain the increase in the number of responses given by both groups by the fact that the children were asked more questions on the post test by E. Neither of these contentions is correct.

Thus, MC children apparently elaborate on the description of one design by giving more verbal images for it than LC children. Even though both groups gave more images on the post test, the LC children have not acquired this ability at the same rate as their MC agemates.

Factor IV: Egocentric Information--Abstract Designs Test

Egocentric Explanations

Both the total number and the percentage of egocentric explanations were considered. Although there were no significant class differences for the total number of explanations given (see Appendix 12 for the means), there was an increase in the number given over the year ($F = 14.73$, $p < .01$, $df = 1,38$). Therefore the percentage of egocentric explanations was computed to hold constant the number of explanations and to see whether egocentric explanations increased as explanations in general increased. Table 5 presents the means for the number of egocentric explanations produced by the children.

Table 5

Egocentric Explanations (Raw Score)

	MC	LC
Pretest	2.40	4.35
Post test	4.10	5.05

LC children gave more egocentric explanations than MC children ($F = 7.17$, $p < .05$, $df = 1,38$). There was no significant time of testing effect nor was there a significant interaction.

A similar pattern occurs when the percentage of egocentric explanations are considered. Table 6 shows the means for the percentage of egocentric explanations produced.

Table 6

Percentage of Egocentric Explanations

	MC	LC
Pretest	.26	.47
Post test	.35	.45

LC children gave significantly more egocentric explanations in relation to the total number of explanations than the MC children ($F = 5.83$, $p < .05$, $df = 1,38$). Again, there was no significant change in the percentage of egocentric explanations from the pre to post tests, and there was no significant interaction.

Although LC children produced more egocentric explanations than MC children, the number was quite large for both groups of children.

Factor V: Comprehension of Classroom English--Imitation Test Errors

The total number of grammatical errors represents the sum of the transformational, phrase structure and morphological errors made on the Imitation Test. Table 7 shows the means for the various types of errors made.

Table 7

Imitation Errors

	Transformational	Phrase Structure	Morphological	Total
MC Pretest	3.80	1.50	.30	5.60
LC Pretest	3.85	2.75	.90	7.50
MC Post test	3.20	1.20	.15	4.55
LC Post test	3.45	1.60	.60	5.65

The data were anlayzed using a 3 x 2 x 2 analysis of variance. The independent variables were type of error, social class and time of testing. Fewer errors were made on the post test than on the pretest ($F = 5.11$, $p < .05$, $df = 1,38$). There was a significant effect for type of error ($F = 48.48$, $p < .01$, $df = 1,38$) with transformational errors occurring more frequently followed by phrase structure

errors and then by morphological errors. There were no significant social class or interaction effects.

It is particularly interesting that there were no significant class differences on this measure of grammatical comprehension of classroom English, although both groups did improve during the course of the year.

Factor VI: Communication of Relevant Content--Relevant Details Retold in Story Telling

Table 8 shows the mean number of relevant details retold.

Table 8

Relevant Details

	MC	LC
Pretest	27.05	23.55
Post test	30.10	26.60

MC children retold more relevant details than LC children ($F = 10.27$, $p < .01$, $df = 1,38$). Although both groups related more relevant details on the post test than on the pretest ($F = 16.52$, $p < .01$, $df = 1,38$), there was no significant interaction. Thus, MC children communicated more relevant content than LC children although both groups improved over the year.

In summary, while there were no social class differences found for comprehension of classroom English, MC

children demonstrated a better productive knowledge of grammatical rules of classroom English, spoke more, used more elaborate and less egocentric speech and included more relevant content in their narratives than did the LC children. By the end of the year, however, both groups had improved significantly in their grammatical comprehension of classroom structures, and in their productive knowledge of these structures. Both groups spoke more, added more relevant content to their speech and used more elaborations. There was no decrease, however, in the amount of egocentric information given over the year.

2. Further Effects Associated with Social Class and Schooling on Language Abilities.

To lend further support to the above conclusions, the analyses of other complementary variables which had high factor loadings will now be discussed.

Factor 1: Productive Knowledge of Classroom Grammar

Production Tests. Table 9 shows the mean number of errors made on the Production Test.

Table 9

Production Test Errors

	MC	LC
Pretest	10.95	17.05
Post test	6.90	10.60

MC children made significantly fewer errors than the LC children ($F = 13.50$, $p < .01$, $df = 1,38$), but both groups made significantly fewer errors on the post test than on the pre test ($F = 80.90$, $p < .01$, $df = 1,38$). There was also a significant interaction ($F = 4.23$, $p < .05$, $df = 1,38$) which indicated that the LC group performed more similarly to the MC group at the end of the year than at the beginning (see Figure 4).

Table 10 summarizes the significance levels for social class, time of testing and interaction effects on the subtests of the production task. (Appendix 13 contains the subtest means.)

Table 10

F-Values for Significance of Production Subtests

	Social Class	Time of Testing	Interaction
Double negative	22.95**	5.37*	N.S.
Negative contraction	9.70**	7.33**	7.33**
Imperative	5.96*	N.S.	N.S.
Do, be, have	8.16**	28.04**	N.S.
Question	7.47**	N.S.	N.S.
Plural	N.S.	19.97**	N.S.
Subject-verb	N.S.	17.29**	N.S.
Comparative	N.S.	31.56**	N.S.
Past Tense	N.S.	24.72**	N.S.
Possessive	N.S.	N.S.	N.S.
Past participle	N.S.	N.S.	N.S.

** $p < .01$

* $p < .05$

for all subtests $df = 1,38$

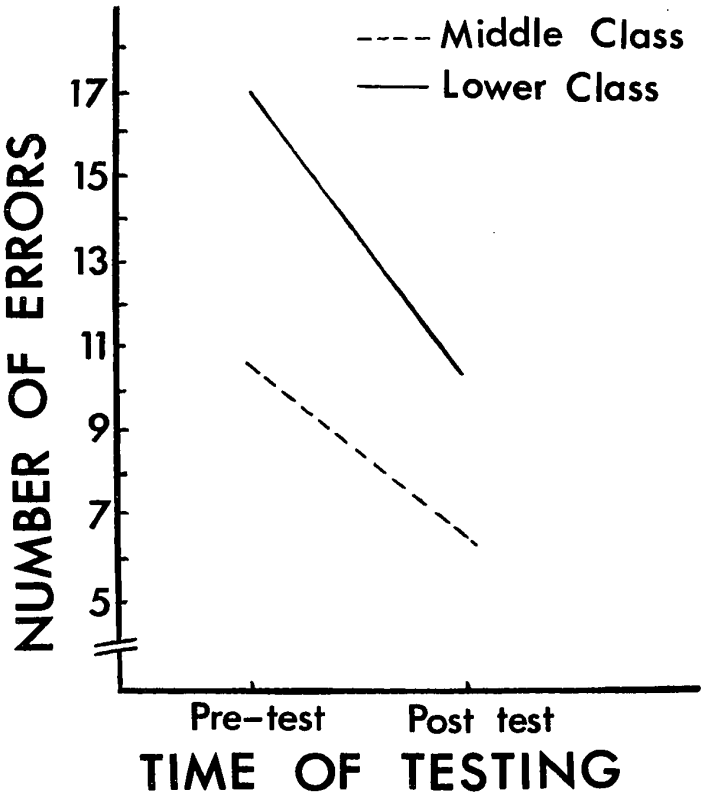

Figure 4: The relationship between time of testing and social class for the number of production errors.

The results of these subtests identify some grammatical constructions that LC children do not use so well as MC children: double negative, negative contraction, imperative, irregular verbs and question transformation. There was a significant interaction for negative contractions. By the end of the year, LC children made relatively few mistakes using this construction. The MC and LC children improved on all grammatical constructions during the year, except for imperatives, questions, past participles of irregular verbs and possessives (there were few possessive errors made on the pretest to begin with). These subtest results provide specific information about the types of grammatical constructions with which LC and MC children may have difficulty.

Wh-Questions. Table 11 shows the means for the total number of errors made on the Wh-questions test.

Table 11

Wh-Questions Errors

	MC	LC
Pretest	9.05	12.95
Post test	6.70	9.40

MC children made significantly fewer errors asking questions than did LC children ($F = 13.30$, $p < .01$, $df = 1,38$). Fewer errors were made on the post test than on the pretest ($F = 33.96$, $p < .01$, $df = 1,38$). There was no significant interaction.

An analysis of variance for the number of questions incorrectly asked (this measure was not included in the factor analysis, see Appendix 14 for means and F-ratios) revealed significant class and time of testing effects consistent with the results reported above. There was also a significant interaction showing LC children to be more similar to the MC children at the end of the year than at the beginning (Figure 5).

When the kinds of errors made in producing questions are examined separately, only repetitions revealed a significant class difference ($F = 6.66$, $p < .05$, $df = 1,38$). LC children tended to repeat the command rather than to ask the appropriate question more often than MC children. There was no significant time of testing or interaction effects. Table 12 shows the mean number of repetitions.

Table 12

Repetitions

	MC	LC
Pretest	.20	2.50
Post test	.15	2.15

The LC children may have used this strategy to mask the difficulty they had in performing this task. It was easier for them to repeat the command than to ask the question. The use of this strategy could also reveal a greater lack

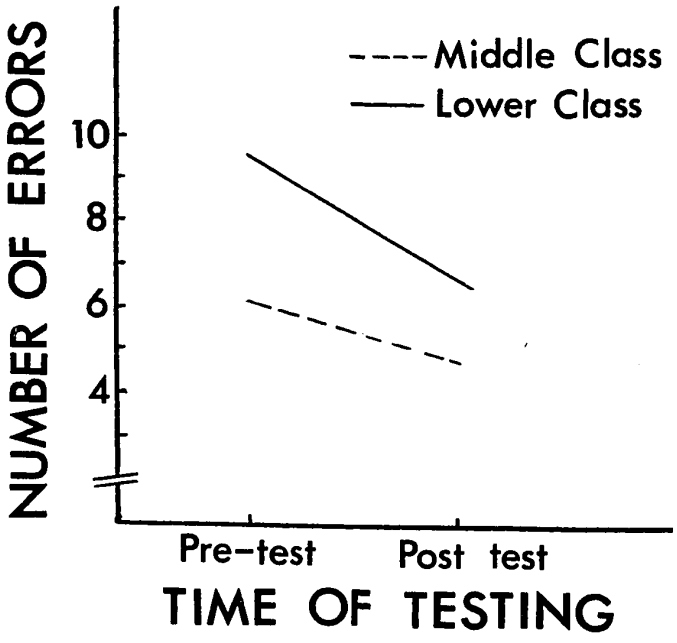

Figure 5: The relationship between time of testing and social class for the number of incorrect Wh-Questions.

of attention on the part of the LC child who may have forgotten the purpose of the task. Rather than asking the question he may simply have repeated the sentence. It is unlikely that the repetitions indicated a lack of understanding of the task for only one child repeated all the sentences.

There were no significant social class differences for any other type of error. Differences associated with time of testing were found for the following types of errors: pronouns, no inversion, wrong use of the auxiliary and the use of got. The children made fewer of these errors on the post test. (Appendix 15 contains the means and F-ratios for these types of errors.)

In summary, significant class differences were obtained on all grammatical measures that loaded on the factor, Productive Knowledge of Classroom Grammar. Both groups of children showed improvement from pre to post tests for all measures. There were significant interactions on two measures (production errors and incorrect wh-questions) which indicated that at the end of the year the LC children were performing more similarly to their MC peers than at the beginning of the year. The Production subtests indicated specific areas in which LC and MC children may be experiencing difficulty, while the kinds of errors made on the Wh-Questions indicated the kinds of problems MC and LC children have in constructing questions.

Factor II: Speech Output

Story Retelling Pronouns. This is a measure of the number of nominal groups whose heads were filled by pronouns in the Story Retelling. Table 13 shows the mean number of pronouns used in the Story Retelling.

Table 13

Story Retelling Pronouns

	MC	LC
Pretest	31.10	29.55
Post test	37.40	30.40

MC children used significantly more pronouns than did LC children ($F = 4.93$, $p < .05$, $df = 1,38$). There was no significant effect for time of testing nor was there a significant interaction.

Story Retelling Grammatical Units. Table 14 shows the mean number of grammatical units.

Table 14

Story Retelling Grammatical Units

	MC	LC
Pretest	30.75	30.70
Post test	35.25	31.75

Although there was an increase in the number of units from pre to post tests ($F = 4.63$, $p < .05$, $df = 1,38$), there were no significant social class or interaction effects.

Depending upon what variable is used to measure speech output, social class and schooling effects change. Because MC children related more relevant details (Table 8) and as many irrelevant details (Appendix 17) as LC children, the MC children's speech output should be greater. Similarly both groups' speech output should be greater on the post test than on the pretest. Nominal groups was the only measure to show this greater output for MC children and for both groups on the post test. It seems to be a more sensitive measure which accounts for aspects of complexity which pronouns and grammatical units do not.

Factor III: Elaborated and Ambiguous Speech

Abstract Designs Test Elaboration Index. Table 15 shows the means for the elaboration index.

Table 15

Elaboration Index

	MC	LC
Pretest	6.60	2.35
Post test	14.55	5.85

MC children gave significantly more elaborations for their images than did LC children ($F = 8.61$, $p < .01$, $df = 1,38$). Both groups gave more elaborations on the post test ($F = 13.52$, $p < .01$, $df = 1,38$). There was no significant interaction.

Abstract Designs Test Ambiguity Index. There were no significant main effects or interaction for this measure (see Appendix 16 for means).

Story Retelling Ambiguous Pronouns. Table 16 presents the means for the number of ambiguous pronouns used in the Story Retelling task.

Table 16

Story Retelling Ambiguous Pronouns

	MC	LC
Pretest	11.85	15.40
Post test	7.90	9.40

Although there was a significant decrease in the number of these pronouns used over the year ($F = 9.58$, $p < .01$, $df = 1,38$), there were no significant social class or interaction effects.

Nevertheless, intuitively, it seemed as though the MC children were using fewer ambiguous pronouns than the LC children. Therefore, we decided to look at the number of ambiguous pronouns used in relation to the total number of pronouns. Table 17 shows the means for the ambiguous pronouns expressed as percentages.

Table 17

Percentage of Ambiguous Pronouns

	MC	LC
Pretest	.38	.54
Post test	.22	.31

MC children used fewer ambiguous pronouns relative to the total number of pronouns than LC children ($F = 5.38$, $p < .05$, $df = 1,38$). Both groups used significantly fewer ambiguous pronouns in relation to the total number of pronouns at the end of the year than at the beginning ($F = 26.64$, $p < .01$, $df = 1,38$). There was no significant interaction.

On measures of Elaborated and Ambiguous Speech, MC children gave more images for each abstract design, gave more elaborations for each of these images, and percentagewise used fewer ambiguous pronouns in the Story Retelling than the LC children. Both groups used the same number of ambiguous references (ambiguity index) to describe the abstract designs. There was an increase in the number of images and elaborations produced on the Abstract Designs Test over the year for both groups, while there was a decrease in the absolute and relative number of ambiguous pronouns used on the Story Retelling. There was no decrease for the number of ambiguous references used on the Abstract Designs Test.

Factor IV: Egocentric Information

Abstract Designs Test Multiple Concept Explanations. Table 18 shows the mean number of multiple concept explanations given on the Abstract Designs Test.

Table 18

Multiple Concept Explanations

	MC	LC
Pretest	1.85	1.25
Post test	3.10	1.80

There was in increase in the use of these concepts from the pre to the post tests ($F = 4.76$, $p < .01$, $df = 1,38$). There were no significant social class or interaction effects.

When the number of these explanations are examined in relation to the total number of explanations given, there was a significant class difference ($F = 6.61$, $p < .05$, $df = 1,38$) with MC children giving relatively more of these explanations than LC children. However, there was no significant time of testing effect nor was there an interaction. Table 19 shows the means for the percentage of multiple concept explanations produced on the Abstract Designs Test.

Table 19

Percentage of Multiple Concept Explanations

	MC	LC
Pretest	.21	.10
Post Test	.25	.15

Abstract Designs Test Poor Images. Table 20 shows the mean number of poor images given for the abstract designs. More of these images were given at the end of the year than at the beginning ($F = 4.68$, $p < .05$, $df = 1,38$). There was no significant social class effect nor was there a significant interaction.

Table 20

Poor Images

	MC	LC
Pretest	1.75	1.60
Post test	3.15	2.45

When the number of poor images, expressed as a percentage of the total number of images, was analyzed there were no significant main effects. Table 21 shows the means for the percentage of poor images produced.

Table 21

Percentage of Poor Images

	MC	LC
Pretest	.07	.08
Post test	.12	.11

The number of poor images rose proportionately with the number of images produced on the post test.

On tests of Egocentric Information, MC children gave relatively more multiple concept explanations and fewer egocentric explanations. Both groups gave the same number of poor images. When all three measures are considered in relation to total output (total number of responses and total number of explanations) there were no changes from pre to post tests.

Factor V: Grammatical Comprehension of Classroom English

Although there were no significant effects for the number of phrase structure or transformational errors made on the Imitation Test (see Table 7 for means), there was a significant decrease in the total number of errors made on the post test.

Factor VI: Communication of Relevant Content

Story Retelling Irrelevant Details. There were no significant main effects for the number of irrelevant details recounted in the Story Retelling (Appendix 17 shows the means). MC children however, recounted significantly more relevant details than did LC children.

In summary of the results so far reported, the effects associated with social class and schooling vary with the ability being examined and the test used to measure that ability. On all tests that load on Productive Knowledge of Classroom Grammar, there was an improvement for both

groups over the year. The LC children made more morphological and phrase structure errors than did their MC agemates. The LC children seemed to have specific problems with the double negative, imperative and question transformations as well as with irregular verbs and prepositions. Nonetheless, these children appear to be quickly catching up with their MC agemates.

No consistent social class or time of testing differences were obtained for the three measures of speech output (nominal groups, grammatical units, pronouns). However, when nominal groups, the most sensitive of these measures is considered, then the MC children produced more speech than LC children and both groups increased their speech output from pretest to post test.

The MC children's speech was more elaborated than the LC children's. To describe a design, not only did they give more verbal images but they also used more elaborations to describe these images (e.g., adjectives, phrases and clauses). At the same time, their speech was less ambiguous in that they used relatively fewer ambiguous pronouns. However, LC children as well as MC children, improved on these abilities over the year. It is interesting that MC children used as many ambiguous references (as measured by the ambiguity index) for the images on the Abstract Designs Test as the LC children and that there was no improvement for either group in this ability.

MC children appear to use less egocentric speech than LC children. They gave relatively fewer egocentric explanations and more multiple concept explanations. However, both groups gave the same number of poor responses on the Abstract Designs Test. There was no improvement over the year on any of these measures.

MC and LC children both improved on measures of grammatical Comprehension of Classroom structures although there were no significant social class differences.

Finally, while MC children included more relevant content in their speech than LC children, they included as much irrelevant content as their LC peers. Both groups increased the amount of relevant content on the post test but did not decrease the amount of irrelevant content.

3. Effects Associated with Social Class and Schooling on Variables with Low Factor Loadings.

Some of the 26 dependent variables did not load appreciably on any factor. Thus there may be other aspects of classroom language which were measured in this study but which were not described by the six factors.

Object Manipulation Test

Even though this test was meant to measure comprehension of standard grammatical rules, it did not load on either of the two grammatical factors. The mean number of errors made on the object manipulation test are shown in Table 22.

Table 22

Object Manipulation Test Errors

	MC	LC
Pretest	16.40	20.90
Post test	11.15	15.05

MC children made fewer errors than did LC children ($F = 6.12$, $p < .05$, $df = 1,38$). Significantly fewer errors were made at the end of the year ($F = 32.55$, $p < .01$, $df = 1,38$). There was no significant interaction. Even though the MC children performed better on the test as a whole, there were significant social class differences for only four subtests (Appendix 18 shows the means and F-ratios for all 16 subtests). The Object Manipulation Test might measure the child's attention or interest in a task.

Morphological Errors on the Imitation Test

This is the only imitation measure which did not load on Factor V (Grammatical Comprehension of Classroom Structures). Table 23 shows the mean number of morphological errors made on the Imitation Test.

Table 23

Imitation Test Morphological Errors

	MC	LC
Pretest	.30	.90
Post Test	.15	.60

LC children made more morphological errors than the MC children ($F = 5.82$, $p < .05$, $df = 1,38$). There was no significant time of testing effect and no interaction. This is the only imitation measure which showed a social class difference. It may be that the children imposed their own inflections upon the structures to be repeated, and that this measure reflects dialect differences between the groups.

Story Retelling Wrong Pronouns

The means for the number of wrong pronouns given on the Story Retelling are shown in Table 24.

Table 24

Wrong Pronouns

	MC	LC
Pretest	1.60	3.75
Post test	.75	2.35

LC children used significantly more wrong pronouns than MC children ($F = 7.34$, $p < .05$, $df = 1,38$). There was no significant time of testing effect and no significant interaction. This variable might measure ambiguity in communication: The child does not make his pronoun references clear; as well as productive grammatical ability: The child does not observe the transformational rule,"Pronoun in Conjunction."

Story Retelling Transformational Errors

This is the only grammatical Story Retelling measure which did not load on Factor I. Table 25 shows the mean number of transformational errors made on the Story Retelling Test.

Table 25

Transformational Errors

	MC	LC
Pretest	1.75	1.90
Post test	2.70	2.80

There was a significant increase in the number of transformational errors from the pre to post tests ($F = 8.98$, $p < .01$, $df = 1,38$). There was no significant social class difference and no interaction.

The increase in these errors may not reflect a regression in grammatical ability, but rather a progression. The children may make more transformational errors on the post test because they are in the process of acquiring and using new grammatical forms (not used on the pretest) for which they have not yet perfected the rules for correct usage. On the post test, many children had difficulty using the correct sequence of tenses in sentences with more than one verb (i.e., in relatively complex sentences). This kind of error is known as "Tense in Conjunction" (e.g., He wished

that it is [vs. was] raining again"). Table 26 shows the means for the number of such errors.

Table 26

Tense in Conjunction Errors

	MC	LC
Pretest	.40	.35
Post test	1.00	1.45

The rise in this type of transformational error on the post test accounts for the general increase in transformational errors on the post test. Thus, the increase in transformational errors on the post test probably indicates that the child is beginning to use more complex forms which he has not yet completely mastered. Transformational errors, then may reflect grammatical sophistication or development.

Story Retelling Conjunctions

There were no significant effects for the number of conjunctions used (Appendix 19 shows the means). This may measure output (the more conjunctions used, the more output there is within each grammatical unit) as well as grammatical complexity (the number of conjunctions is an indication of the number of clauses within each sentence).

Appropriate Naming

MC children gave more appropriate responses than did LC children on the naming task ($F = 8.70$, $p < .01$, $df = 1,38$).

Both groups gave more appropriate responses on the post test ($F = 68.60$, $p < .01$, $df = 1,38$). There was no significant interaction. Table 27 shows the means for the total number of appropriate responses.

Table 27

Appropriate Responses

	MC	LC
Pretest	41.15	33.70
Post test	52.40	44.10

To determine whether LC children performed poorly on this test because they did not possess the same range of vocabulary as the MC children, the number of errors made on the vocabulary test was analyzed. Table 28 shows the mean number of vocabulary errors made by LC and MC children.

Table 28

Vocabulary Errors

	MC	LC
Pretest	8.05	13.90
Post test	3.00	4.95

MC children gave more correct names than did LC children ($F = 12.22$, $p < .01$, $df = 1,38$), and more correct names were given on the post test ($F = 115.67$, $p < .01$, $df = 1,38$).

More important, however, there was a significant interaction ($F = 8.98$, $p < .01$, $df = 1,38$) which showed that the LC children were relatively closer to the MC children at the end of the year than at the beginning (see Figure 6).

These results indicate that by the time of the post test the LC children knew almost as many names as the MC children. Thus, their poor performance on the Appropriate Naming post test probably should not be attributed to a poorer vocabulary.

The number of inappropriate responses given on the naming task was analyzed to determine whether LC children did give as many names but gave more incorrect ones. It may be that they knew as many words but did not have as many semantic markers for these concepts as the MC children and thus might make more errors of inclusion. Table 29 presents the mean number of inappropriate responses.

Table 29

Inappropriate Responses

	MC	LC
Pretest	2.95	2.85
Post test	1.95	2.10

There was no significant social class difference on this measure, although both groups improved during the course of the year ($F = 10.98$, $p < .01$, $df = 1,38$). There was no

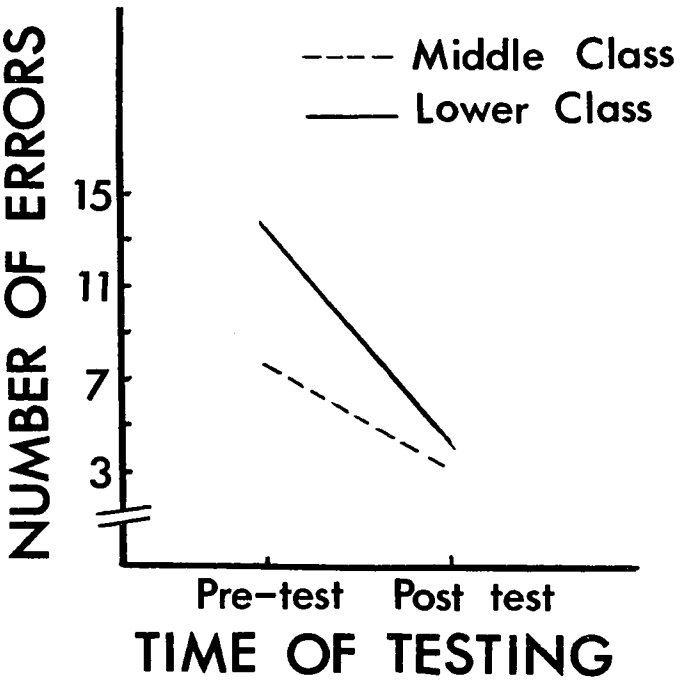

Figure 6: The relationship between time of testing and social class for the number of vocabulary errors.

significant interaction. LC children's poor performance on the Appropriate Naming task cannot be explained by their having less vocabulary or poorer classification ability. On the other hand they may do poorly because they do not understand the communication demands of the situation: "to give as many words as you can." This measure is probably a reflection of both vocabulary ability and communication ability.

More than six aspects of language ability were tapped by the variables used in this study. Some of those measures may not be suitable for assessing classroom language abilities (e.g., Object Manipulation Test). Other tests may be measures of classroom language ability which were just not accounted for by the original factors.

In general, the dependent variables used in this study provided valuable information about the structure of classroom language abilities, and what the effects associated with school and social class are on some aspects of classroom language behavior in kindergarten children.

DISCUSSION

This study was designed to answer three basic questions.

1. What is the relationship between grammatical and communication abilities?
2. Do LC children perform consistently poorer than MC children on a variety of measures of classroom language?
3. How does classroom language change over the first year of formal schooling?

The results of the factor analysis and of the analyses of variance suggest the following conclusions about classroom language ability in white MC and LC kindergarten children.

Factor Structure of Classroom Language

The results of the factor analysis offer a very reasonable interpretation of the data, although it must be remembered that had different variables been included in the analysis, the results probably would not be the same.

The results of the factor analysis indicated that classroom language ability is characterized by more than one factor. In this study, six different factors accounted for 66% of the total variance. The six factors can be divided into two distinct groups, grammatical abilities and communication abilities. There was no problem differentiating the communication factors from the grammatical factors since no grammatical measures had high loadings on

the communication factors and vice versa. Thus, in this study, these two areas of language ability appear to be independent.

Two factors contribute to grammatical abilities: 1) comprehension of the grammatical structures used in the classroom, and 2) production of the grammatical forms which are used in the classroom. Several researchers (e.g., Baratz, 1969; Manyuk, 1963; Slobin & Welsh, 1968) have shown that the child's imitation of a sentence reflects his grammatical understanding of that structure. Because three out of four imitation measures loaded on one factor, it was decided that this might measure the child's grammatical understanding of classroom structures.

The second aspect of grammatical ability, production of these structures, involved the correct use of various morphological, phrase structure and transformational forms which all loaded on one factor.

The remaining four factors which define communication abilities coincided with definitions that other researchers have given to communicative competence (e.g., Hymes, 1967). The four factors in the present study were defined as speech output (cf. Hymes, knowing when to speak); relevant content (cf. Hymes, knowing what to say); ambiguous and elaborated speech, and egocentric information (cf. Hymes, knowing how to say it).

Three of these communication factors--relevant content, elaborated and ambiguous speech, and egocentric information --seem to represent aspects of speech that Bernstein (1970) uses to differentiate restricted and elaborate code users. For example, maybe those who use an elaborate code make their speech explicit by communicating relevant content that is elaborated and not tied to the immediate context (i.e., is not egocentric information).

Some researchers have characterized the young child's speech as egocentric (Flavell, 1968; Piaget, 1926). They claim that the young child's speech indicates that he is not sensitive to the informational requirements of his listener. In fact, he behaves as though the listener shares with him the same background information about any situation. The child's speech becomes easier to understand because he learns to attend to the requirements of his listener. Three of the communication factors identified in this study (relevant content, ambiguous and elaborated speech, and egocentric information) seem consistent with the notion that some aspects of the young child's speech are egocentric. These factors also indicate some non-egocentric aspects of the young child's speech which make his communications decipherable to a naive listener (i.e., one who is not familiar with the characteristics of the situation about which the child is communicating). One factor, elaborated and ambiguous speech, specifically

indicates how the child makes himself understood. At this age (6 years) the child's messages contain many explicit as well as ambiguous features. The child may well have learned what aspects of speech make his communication more effective without learning what aspects make his speech more difficult to understand. This would explain why all variables have positive loadings on this factor.

The results of the present study suggest the relative importance of grammatical and communication abilities for effective language use. Communication and grammatical abilities appear to represent statistically independent skills in kindergarten children. Furthermore, each of these components of language seems to comprise a number of subskills. Thus, it seems clear that to evaluate or describe the language of the kindergarten child properly, one must assess his behavior in diverse contexts using many different measures.

The Effects Associated with Social Class on Classroom Language Abilities

The results of the analyses of variance have indicated how social class may affect different aspects of classroom language. Social class differences were found for many, but not all, measures of communication and grammatical abilities. The findings suggest three main conclusions: 1) LC children have the same ability to comprehend gram-

matical structures, but have more difficulty spontaneously producing them than MC children; 2) LC children's speech contains fewer explicit features which make communication more effective; but as many implicit features which make communication less effective than MC children's speech; and 3) LC children have more difficulty evaluating the communicative demands of the classroom than MC children. Each of these conclusions will now be discussed in greater detail.

First, on the Imitation Test, there were no significant social class differences. However, differences were found for all tests of Productive Knowledge of Classroom Grammar. An examination of the specific grammatical structures which proved especially difficult for the LC child to produce spontaneously, suggests why he did not perform so well as his MC peer. On the Wh-Question Test, LC children repeated the commands more often than the MC children. This suggests that the differences on some of these production tests may reflect the LC child's difficulty remembering the purpose of the task or in paying attention. Many of the production errors may also be attributable to dialect differences (e.g., double negative, irregular verbs, preposition errors). This hypothesis is simply conjecture because we do not have detailed information about English dialect variation in Montreal. Furthermore, the production differences probably do not reflect the MC child's ability to use more complex

or sophisticated forms of language since both groups made as many errors on a measure of grammatical complexity (transformation story retelling errors). This supports the difference theorists position that the LC child's language is not less complex than the MC child's. The LC child appears to have the same ability to understand the basic structures of classroom English as the MC child; but he has more difficulty spontaneously producing these structures in the testing situation.

The second main conclusion is that while MC children's speech contained more explicit features than that of LC children, it still had as many implicit features. MC children gave more descriptions for each abstract design and elaborated these images by using more adjectives, spatial directions, qualifications, phrases and clauses than the LC children. Their descriptions for these responses contained more than one concept so that if the listener didn't understand one, he had another to rely on. In addition, he related more relevant content in his stories than the LC child. The use of these explicit features makes it easier for a listener to understand what the child is trying to communicate. Furthermore, the wider use of these features by the MC child may reflect his greater sensitivity during testing to his listener's informational needs. The LC child may have assumed that the listener shared all the relevant information (i.e., he

knows the story, and knows the correct abstract design) and for this reason did not use explicit features to the same degree as the MC child.

This picture of the MC child's speech as more explicit and context-free, and of the MC child himself as being more attuned to the point of view of his listener, is consistent with results from previous studies. Hawkins (1969) found that LC children's speech was more context-bound because they used more unreferenced pronouns when describing a picture. Thus, their narrative could only be understood in the context of the picture. Osser (1971) has reported that MC children make more grammatical self-corrections than LC children. This, he concludes, may indicate the child's greater awareness of how he must make himself understood to a listener and of the communicative functions of language.

Although the MC child's speech contained more explicit features, both groups performed similarly on many measures of ambiguity and egocentricity. The MC and LC children gave the same number of poor images for the designs; they used as many ambiguous references for their images; and they retold as many irrelevant details from the stories. Although MC children used relatively fewer ambiguous pronouns in the Story Telling and gave fewer egocentric explanations in the Abstract Designs Test than LC children, they still used a great many of these responses.

The factor which differentiates the speech of LC and MC children may not be the amount of implicit speech used but the greater amount of explicitness in the MC child's speech. Thus the MC child, relative to the LC child, gave more images in the Abstract Designs Test which compensated in some way for the number of poor images he had given. Likewise, he gave more elaborations for these responses which made up for the ambiguous references. And similarly, he retold more relevant details which compensated for the irrelevant details. These findings seem consistent with Osser's results concerning self-corrections. Just as the MC child corrects his faulty speech more often than the LC child, he may also elaborate those ambiguous features of his speech more than the LC child for the purpose of making himself better understood.

The third conclusion, that LC children have difficulty evaluating the communicative demands of the classroom, is supported by the results of the Appropriate Naming Test and the Vocabulary Test. On the Appropriate Naming Test, LC children did not perform so well as MC children. LC children may have given as many names as the MC children, but many of these may have been inappropriate. However, because both groups gave as many inappropriate responses, this hypothesis must be discarded. Furthermore, the LC children's performance on the Appropriate Naming post test cannot be explained by the fact that they did not know as many

names, for the vocabulary test results showed that by the end of the year they did. LC children may have performed poorly because they did not know the rules of the game (i.e., the communicative demands of the situation): "to give as many names as you can."

This failure on the part of the LC child to provide sufficient information when asked for it also occurred on other tasks in this study (e.g., abstract designs images, relevant details), and has been reported by other investigators. Williams and Naremore (1969) found that LC children who were questioned gave a minimum amount of information in reply compared to their MC peers who answered elaborately. However, LC children, after sufficient prodding, eventually gave the same amount of information as the MC children. Heider, Cazden and Brown (1968) found similar results using an abstract designs technique.

However, one should not conclude that the LC children were completely silent in the various testing situations in this study, for they were not. Even though there were class differences on two speech output measures (nominal groups and pronouns), there were none on grammatical units. Also the LC children <u>did</u> give images and explanations on the Abstract Designs Test and <u>did</u> give relevant details on the Story Retelling; they just did not give so many as the MC children.

The following example (reported in Ervin-Tripp, 1971) may provide some insight as to why LC children did not willingly give information in the same way as MC children. A woman asked a LC subject where he lived. The child pointed and said, "Over there." The same day the same subject was asked by another person where he lived. This time the child replied, "Go down the stairs, turn right and go three blocks, etc." What explains this fantastic change in speech? Earlier in the day, the first person had picked up the child at his home. Therefore, the child was aware that she must know where he lived. On the other hand, the second person had never been to the child's home. This child demonstrated a sensitivity to the information level of each of his questioners. He supplied them with appropriate information according to their needs.

Failure to give the expected information on demand may initially contribute to the LC child's failure in school. The results of this study and others like it strongly suggest that the child knows the relevant information, but does not communicate it. This may occur because he views the classroom as threatening and says nothing (cf. Labov, 1970a; Philips, 1970); or because he assumes (as did the child who was asked where he lived) that the teacher already knows the answer and it would be redundant for him to tell her what she already knows. The teacher, however,

assumes from the child's behavior that he does not possess the relevant information and treats him in a very different way from a child whom she thinks does know the information. The communicative demands of the classroom may so conflict with the LC child's extraclassroom experiences, that he cannot successfully adapt to school. The results of this study suggest that the teacher of LC children should spend more time trying to show them how to use language in the classroom to effectively communicate about information that others seek from them.

The original hypothesis that social class differences in school language do occur has been confirmed. However, the LC children did not perform consistently lower on all measures of classroom language abilities. This study has identified several possible aspects of language ability which do distinguish MC from LC children. None of these results seem to suggest that the LC child's use of classroom language reflects a deficient language system; rather some of the results suggest that he operates with a different set of rules which are not consistent with those used in the classroom by teachers.

The Effects Associated with Formal Schooling on the Acquisition of Classroom Language

In the present study, the children improved on a number classroom language abilities during their year of formal schooling. All conclusions concerning the nature of

improvement or of change must indeed be very tentative. One must bear in mind the problems of measuring change (cf. Cronbach & Furby, 1970) and the problems of scaling when one assesses the relative improvement of different classroom language abilities in this study. Therefore, we suggest with reservation, two possible ways in which classroom language abilities changed over a year of formal schooling. First, communication effectiveness increased because children increased their use of features which stress elaboration and explicitness, and not because they decreased the number of features which increase ambiguity and egocentricity. Second, the children improved on tests of grammatical abilities to a greater degree than they improved on tests of communication abilities. Each of these conclusions will now be discussed in greater detail.

A definite pattern seems to emerge from comparison of the communication measures which showed significant time of testing effects with those which did not. For example, the child's descriptions of the abstract designs became clearer not because he decreased the number of poor responses or ambiguous references, but because he increased the total number of images and elaborations that he used. The explanations for these images made more sense, not because of a decrease in the number of egocentric explanations, but because of an increase in the number of (raw)

multiple concept explanations. His stories were easier to understand not because he included less irrelevant content or used fewer wrong pronouns, but because he included more relevant content.

Labov (1970a) has criticized the language style of the MC scholar as being redundant, bombastic and verbose. He claims that it is so full of empty elaborations and irrelevant details that any argument becomes difficult to follow. The results of the present study suggest that the school in fact trains the kindergarten child to use language in this way. The child is not taught to discard certain ambiguous elements from his speech to make himself understood but to add explicit elements which compensate for ambiguities. This does not seem like a very efficient way to develop communicative skills.

The second suggestion made was that children improved on tests of grammatical abilities to a greater degree than on tests of communication abilities. The children performed significantly better on all tests of grammatical abilities at the end of the year. For two of these measures (Production and Wh-Question), there were significant interactions which revealed that LC children improved particularly rapidly during the course of the year. Using a measure of grammatical sophistication (story retelling transformational errors), it was concluded that both LC and MC children's

speech had become grammatically more complex by the end of the year.

Other researchers, using black subject populations have obtained similar results. Loban (1963) and K. Hunt (1970) report increased grammatical complexity with schooling, and DeStephano (1970) found an increased use of certain standard forms with schooling.

So it seems as though both groups of children have acquired many aspects of classroom grammar during their one year of school. In addition, and perhaps of more importance, the LC children have improved more rapidly over the year on many of these tests than the MC children. Perhaps, the teachers of the LC children place a greater emphasis upon the production of classroom grammatical structures. They could do this by correcting grammatical errors made by the children (e.g., "He doesn't not, he don't"). They could even talk very slowly and clearly so that their pupils would have ample opportunity to observe a good model of standard English. In fact, one of the LC teacher's speech was exceptional because she did talk so clearly and slowly. It is possible that the teachers of the MC children used these strategies also, but that their students did not need so much attention as the LC students since their production of classroom language was better when they entered school.

The general improvement noted for the grammatical abilities was not found for the communication abilities. Furthermore, the LC children did not seem to be catching up with their MC peers on tests of communication abilities to the same extent that they did on tests of grammatical abilities. In fact, for one test (abstract design images) the MC children seemed to improve at a more rapid rate than their LC peers. It may be that their kindergarten teachers have put too much stress on grammar and form, and have either ignored or not considered the communication of content as a relevant aspect of language behavior. There are a number of reasons why the LC children may not be improving as rapidly on tests of communication abilities as they were on the grammatical tests.

1. The teachers of the LC children may not have emphasized these aspects of language. They may not be particularly interested in <u>how</u> the child gets his message across so long as he uses the correct grammatical form. They may have been more interested in maintaining silence in the classroom than in having the children participate in noisy verbal communication.

2. The LC children started farther behind the MC children in these abilities, and it may take them longer to catch up. However, because they also started behind on measures of grammatical abilities and <u>did</u> begin to catch up, one would expect a similar pattern to occur for communi-

cation abilities.

3. The LC child does not have sufficient information to communicate about a situation effectively. This suggestion is the least probable of the three. As mentioned in the previous section, the LC child probably does know the appropriate information; he just does not know how to appropriately convey this information.

It is extremely important that both groups of children, especially the LC, receive more training in communication skills. Acquiring these skills may be a much more difficult and lengthy process than the acquisition of grammatical skills. Should this prove to be true, teachers must be encouraged to place more emphasis on these communication abilities which are extremely important for school and later occupational success. If a child cannot make himself understood, it is of little consequence whether he is not understood using grammatically acceptable speech or grammatically unacceptable speech. A teacher might employ several strategies to develop these communication abilities. The children should be encouraged to talk about diverse familiar topics to their peers who would then be encouraged to ask questions about aspects of the topic that were not understood. In this way, the speaker may learn to identify features of speech which must be made more explicit. At the same time, the listeners might learn how unclear speech can be and how it can be made less ambiguous. The children might also

play games, such as a modified version of the Abstract Design Test which requires the use of communication skills. One child would have to guess which design the other was describing.

Some researchers question the efficacy of teaching communication abilities to children. For example, Fry (1968) trained 10-year-old subjects in certain communication skills, but found that this training had little effect upon communication outside the testing situation. Furthermore, Flavell (1968) and Piaget (1926) feel that the young child's egocentric speech reflects the lack of certain logical operations which only develop with age and cannot be accelerated. However, in the case of the LC subjects in this study, they can certainly be taught those communication skills that their MC peers already possess. They should be taught to recognize the communication demands of various situations and how to behave appropriately to meet these demands.

The Importance of Studying Social Class Differences in the Context of Development

Some of the data from this study complement those reported by other investigators. Heider (1968), for example, found that MC children gave more responses on an Abstract Designs Test than did LC children. Hawkins (1968) found that LC children used more unreferenced pronouns than MC

children. Osser, Wang and Zaid (1969) and Nurss and Day (1971) found social class differences on production and comprehension tests. However, all these studies have looked at the child's performance only at one point in his development. These reported differences become meaningful only when they are examined within the context of the child's development. For example, even though the MC children in the present study performed better on a grammatical production test, the LC children were catching up over time. This latter information is much more valuable than the simple report that the two groups are different.

With this thought in mind, it is extremely important to find out whether the rate of classroom language acquisition differs for the two groups. There are three possibilities.

1. The LC child eventually catches up with the MC child.

2. The LC child maintains a constant distance behind the MC child, but acquires language at a comparable rate.

3. The LC child falls further behind the MC child with age.

This last possibility has been suggested by the deprivation theorists (cf. M. Deutsch, 1967). They claim that the effects of poverty are cumulative, and that with increasing age, the LC child falls further and further behind

his MC peer. Their contention that the LC child's language becomes progressively more deficient in relation to the increased demands of the school, has received no support whatsoever in this study. Except for one measure (abstract design images), the LC children either improve at a rate equal to that of their MC peers or faster than it.

Sociolinguists have also suggested that the LC child falls further behind the MC child, although for quite different reasons. They claim that the adoption of a form of language also involves adopting those values of the social organization which are associated with the language. For example, Labov (1970a) has concluded that the peer group plays such a major role in the child's life that his language becomes restructured in middle childhood to meet the demands of the peer group's language. The LC child may be unwilling to acquire school language because he perceives the values of this system as being in conflict with those of his peer group. The peer group influence may be great enough that eventually the child will replace some aspects of a classroom language with peer group language. Finally, the LC child may fail to acquire a school language because the experiences associated with school are unpleasant to him. He reacts by using patterns of nonstandard classroom language which are nonacceptable. This behavior may cause the teacher to react in such a way to make school an unpleasant experience.

In this study, LC children generally seemed to be acquiring many language skills during the kindergarten year at a rate comparable to their MC peers. However, if sociolinguists are correct in assuming that values, attitudes and peer group pressures are important in the acquisition of classroom language these same LC children may not continue to improve. Perhaps classroom language acquisition is most rapid during the early school years before the peer group becomes very influential and before negative attitudes toward school appear. Additional research is required to determine whether this is so.

This thesis has supported the general claim that LC children, compared to MC children, have language difficulties related to school. However, these problems do not appear to be severe or unconquerable among white LC English-speaking Montreal children. Perhaps many later educational problems would be averted, if these children were given additional help and practice in certain language skills early in their schooling.

SUMMARY

The purpose of this study was to gain information about three problem areas: 1) the relationship between grammatical and communication abilities; 2) the reliability of social class differences when various measures of classroom language are taken; and 3) the changes in classroom language over a year of schooling.

Classroom language abilities of 20 MC and 20 LC kindergarten children were evaluated at the beginning and end of the school year. Both grammar and use were assessed by taking various measures in several contexts.

The results of a factor analysis indicated that classroom grammatical and communication skills are independent abilities in the kindergarten child. These results also indicated the importance of using several dimensions to describe classroom language.

Results of the analyses of variance suggest how social class is associated with the acquisition of classroom language. LC children do not perform consistently poorer than MC children on all tests. Although LC children have more difficulty spontaneously producing certain grammatical structures, they show the same ability to comprehend these forms as their MC peers. Also, by the end of the year, the LC children are catching up to their MC peers on these tests of grammatical production. The results of the

communication tests indicate that LC children used as many ambiguous and egocentric features in their speech as the MC children. However, they did not use so many explicit features; and, as a result, their speech was more difficult to understand. By the end of the year, even though the LC children performed similarly to their MC agemates on a vocabulary test, they did not name so many words for a specific category when asked to do so. These results suggest that LC children have problems on communication tasks not because they do not understand the material to be presented, but because they do not know the behavior that is appropriate to convey this knowledge.

The results of the analyses of variance also show how classroom language changes over a year of schooling. Over the year, both groups seem to acquire many aspects of classroom language. The children become more effective in communication skills because they have increased the use of explicit features in their speech. They have not, however, decreased the use of implicit features. Furthermore, it appears that both groups are acquiring grammatical skills at a faster rate than they are acquiring communication skills. It is suggested that the children receive additional training in communication abilities.

The importance of studying social class differences within the context of the child's development was stressed.

Observed social class differences must be traced over time to determine whether these differences increase, decrease, or remain constant. In the present study the differences on all but one measure remained constant or decreased.

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APPENDIX 1

Imitation Sentences

Practice Sentences

1. The sky is blue
2. The girl sits down.

Test Sentences	Feature Tested
1. The boy is pulled by the girl.	passive
2. The cat is not on the chair.	negative
3. Happily the boy is kicking the ball.	inversion
4. The baby throws the ball up high.	separation
5. The brother is pulling the sister's hair.	possessive
6. The man dries himself with a towel.	reflexive
7. The goat climbs and another goat climbs	conjunction
8. The little boy is flying a kite.	adjective
9. The woman who sits is very fat.	relative clause
10. Mother does some sweeping with a broom.	nominalization
11. The man does not wear a hat.	do + negative
12. The boy gives the ball to her.	indirect object
13. Is the little girl walking the dog?	question
14. He'll go into the grocery store soon.	contraction
15. Where are you taking our new dog?	relative question
16. Sit down on the new green chair.	imperative
17. Don't go under the house at night.	imperative negative
18. There aren't any more in the box.	pronomilization
19. The girl got a pretty new dress.	got
20. He is not going to the party.	auxiliary be replacement
21. I have been to the store today.	auxiliary have replacement
22. They did go to the circus today.	do
23. I see a book and a pen.	conjunction deletion
24. I will go if he will come.	conjunction if
25. He saw him so he bit him.	conjunction so
26. He hit him because he was mad.	conjunction because
27. Mother saw the dog and she smiled.	pronoun in conjunction
28. I want to play with the children.	complement
29. You have to drink milk to grow.	iteration
30. This grey pencil is longer but thicker.	double comparative
31. Either stop it or go to bed.	either/or
32. The teacher unfolded the piece of paper.	negative affix
33. The tree is taller than the boy.	comparative
34. This is the biggest ball of all.	superlative

APPENDIX 2

Vocabulary and Naming test

1. bell
2. blocks
   (name as many things we play with as you can.)

3. bath
4. bag
5. ball
6. bat
7. bread
8. back
   (name as many parts of the body as you can.)

9. box
10. bed
11. black
    (name as many colors as you can.)

12. beads
13. beans
14. beets
15. chairs
    (name as many kinds of furniture as you can.)

16. card
17. corn
18. clown
19. clocks
20. car
    (name as many things we ride as you can.)

21. coat
    (name as many things we wear as you can.)

22. cloud
23. cone
24. comb
25. can (tin: acceptable synonym)
26. dish (bowl: acceptable synonym)
    (name as many things we eat with as you can.)

27. drum
28. fish
29. feet
30. gun
31. goat
    (name as many animals as you can.)

32. grass
33. glass
34. gum
35. horse
36. horn
37. hat
38. house
39. hand
40. keys
41. lake
42. lamp
43. lamb
44. mouse
45. mail
46. mouth
47. nail
48. nose
49. peas
50. pin
51. pig
52. pen
53. pail (bucket: acceptable synonym)
54. peach
55. pie

(name as many deserts as you can.)

56. pipe
57. red
58. rake
59. ring
60. rain
61. ship (boat: acceptable synonym)
62. spread
63. swing
64. sand
65. stairs (steps: acceptable synonym)
66. sail
67. seat
68. stone (rock: acceptable synonym)
69. stove
70. star
71. socks
72. sled
73. string
74. sleep
75. sweep
76. soup
77. soap
78. thread

79. tie
80. tail
81. toes
82. train
83. tree
84. three
85. cap (hat: acceptable synonym)
86. cup
87. cat
88. chip
89. cane

APPENDIX 3

Object Manipulation Test

1. ACTIVE VOICE

Materials: boy, with wash cloth in one hand, spoon in other hand; girl with wash cloth in one hand, spoon in other hand; toy dog and cat both standing.

Arrangement: use only objects for directions

Show me:

a. the boy washes the girl
b. the girl feeds the boy
c. the cat chases the dog
d. the cat bites the dog.

2. SINGULAR AND PLURAL NOUNS

Materials: 4 blocks, 4 rocks, 4 crayons. In each case, one object is loose and three are tied in a plastic bag.

Arrangement: place all objects on the table

Give me:

a. the block
b. the crayons
c. the rocks
d. the blocks
e. the rock
f. the crayon.

3. POSSESSIVES

Materials: father and son dolls; mother horse, baby horse; toy truck with wheel that is loose and separated from the truck, and a larger wheel.

Arrangement: place objects on the table. Replace items each time used.

Show me:

a. the boy's daddy
b. the wheel that is the truck's

c. the horse's mother
d. the wheel's truck
e. the daddy's boy
f. the truck's wheel.

4. NEGATIVE/AFFIRMATIVE STATEMENTS

Materials: 1 doll of rigid construction with hat; 1 doll with flexible limbs without hat.

Arrangement: be sure flexible doll is in sitting position. Put dolls in front of subject.

Point to:

a. the doll cannot move her legs
b. the doll does not have a hat
c. the doll is sitting
d. the doll has a hat
e. the doll is not sitting
f. the doll can move her legs.

5. NEGATIVE/AFFIRMATIVE QUESTIONS

Materials: 2 articles of clothing; 2 edible objects in separate plastic bags; 2 or 3 objects such as sticks, blocks, stones.

Arrangement: place objects on the table so all are visible.

Which of these things:

a. can you eat?
b. can't you wear?
c. cannot be eaten?
d. can you not wear?
e. can't be eaten
f. can you wear?

6. SINGULAR/PLURAL WITH NOUN AND VERB INFLECTIONS

Materials: 2 girls in standing or walking position; 2 dogs in standing or running position.

Arrangement: place all the objects on the table. Demonstrate to the subject how he can show 'run' 'jump' 'lie down' and how both objects can run or jump by using both hands simultaneously.

Show me:

a. the girls walk
b. the dogs run
c. the girl jumps
d. the dog lies down
e. the dogs jump
f. the girls jump.

7. NEGATIVE/AFFIRMATIVE STATEMENTS WITH CONTRACTIONS

Materials: use those used for Negative/Affirmative Statements.

Arrangement: be sure flexible doll is in sitting position.

Point to:

a. the doll can't move her legs
b. the doll isn't sitting
c. the doll doesn't have a hat
d. the doll that isn't standing.

8. NEGATIVE AFFIX

Materials: small toy truck with load of stones glued in place; small truck empty; a piece of string that has a knot; a piece of string with no knot; one piece of paper folded; one piece of paper unfolded.

Show me:

a. the string is tied
b. the truck is unloaded
c. the string is not untied
d. the paper is unfolded
e. the truck is not unloaded
f. the paper is folded.

9. REFLEXIVE VERBS

Materials: One flexible doll (John) with wash cloth attached to one hand and spoon attached to the other hand. One flexible doll (Bill) with wash cloth attached to one hand and spoon to the other.

Arrangement: demonstrate how the actions may be done. Identify the dolls as John and Bill.

Show me:

a. John washes him
b. John washes himself
c. Bill feeds himself
d. Bill points to himself
e. Bill feeds him
f. Bill points to him.

10. COMPARATIVES

Materials: plastic bag with three small rocks ir it; a plastic bag with 10 or more rocks in it; one plastic bag with a small amount of clay; one bag with a perceptibly larger amount of clay. One short stick (shorter than the flat ones below); one longer stick of the same diameter and color (longer than the flat ones); one flat stick that is narrow; one flat stick (of the same thickness and same length) that is perceptibly wider.

Arrangement: place all objects on the table.

Show me:

a. the bag with more rocks in it
b. the narrower stick
c. the bag with less clay in it
d. the bag with fewer rocks in it
e. the shorter stick
f. the bag with more clay in it
g. the longer stick
h. the wider stick.

11. PASSIVE

Materials: same as those used for the Active Voice

Arrangement: place all objects on the table

Show me:

a. the dog is chased by the cat
b. the boy is washed by the girl
c. the cat is chased by the dog
d. the boy is pushed by the girl
e. the girl is washed by the boy.

12. CONJUNCTION

Materials: plastic spoon; fork; knife; crayon; pencil.

Arrangement: place all the objects on the table.

Give me:

a. a fork and a knife
b. a crayon or a pencil
c. something that is either a fork or a knife
d. a crayon and a pencil
e. a fork or a spoon
f. something that is neither a crayon nor a pencil.

13. DOUBLE COMPARATIVES

Materials: master stick (should be marked so the tester can identify it); 1 flat stick same length as master but thinner; 1 flat stick same length as master but thicker; 1 flat stick same thickness as master but shorter; one flat stick same thickness as master but longer; 1 flat stick longer and thinner; 1 flat stick longer and thicker; 1 flat stick shorter and thicker; 1 flat stick shorter and thinner.

Arrangement: All sticks on the table. Hold the master stick so the subject can easily see it.

Give me a stick that is:

a. shorter and thicker than this one
b. longer and thicker than this one
c. shorter and thinner than this one
d. longer and thinner than this one.

14. REFLEXIVE VS. RECIPROCAL

Materials: same as those used for Reflexive verbs

Arrangement: both dolls on the table.

Show me:

a. they wash themselves
b. they feed each other
c. they wash each other
d. they feed themselves.

15. IMPERATIVES

a. point to your eyes
b. don't sit down.

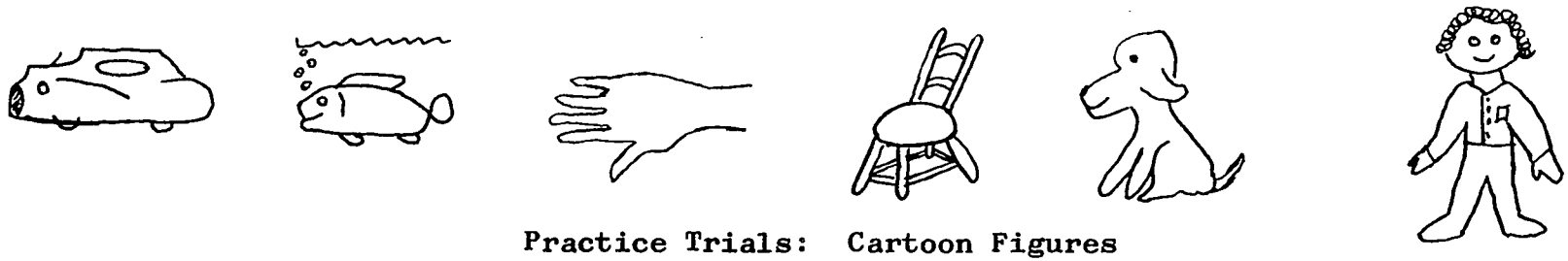
16. IF

Materials: M & M candies

a. if you are a girl (boy) stand up, if not sit down
b. if you are a girl (boy) you cannot have this candy.

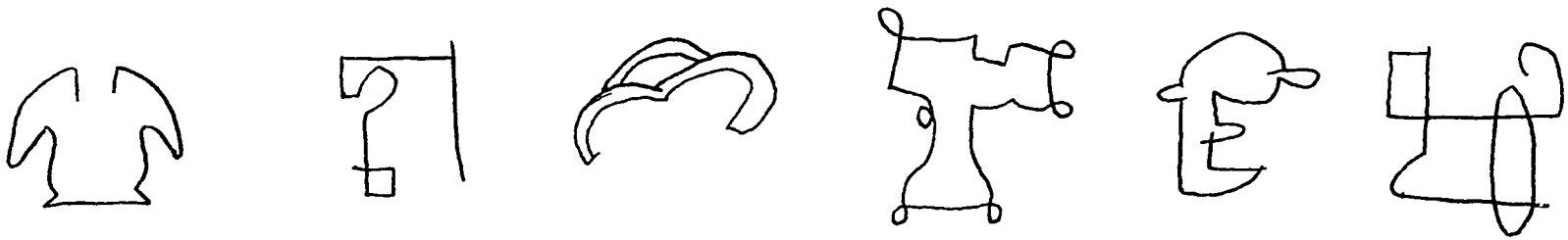
APPENDIX 4

Abstract Designs Test Stimuli

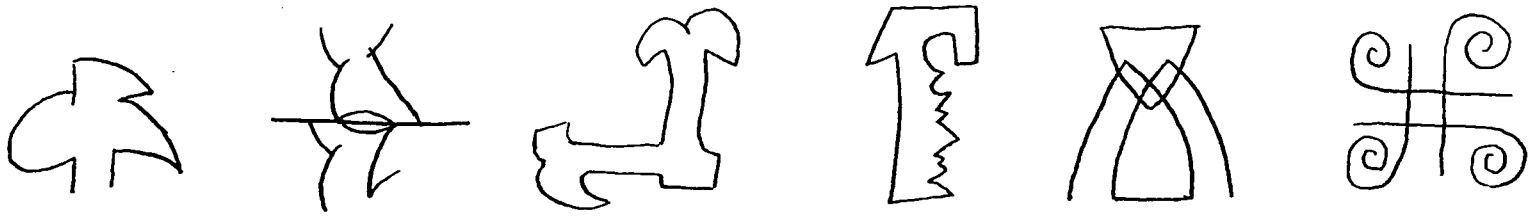


Practice Trials: Cartoon Figures

Practice Trials: Abstract Designs



Abstract Designs Test: Set 1

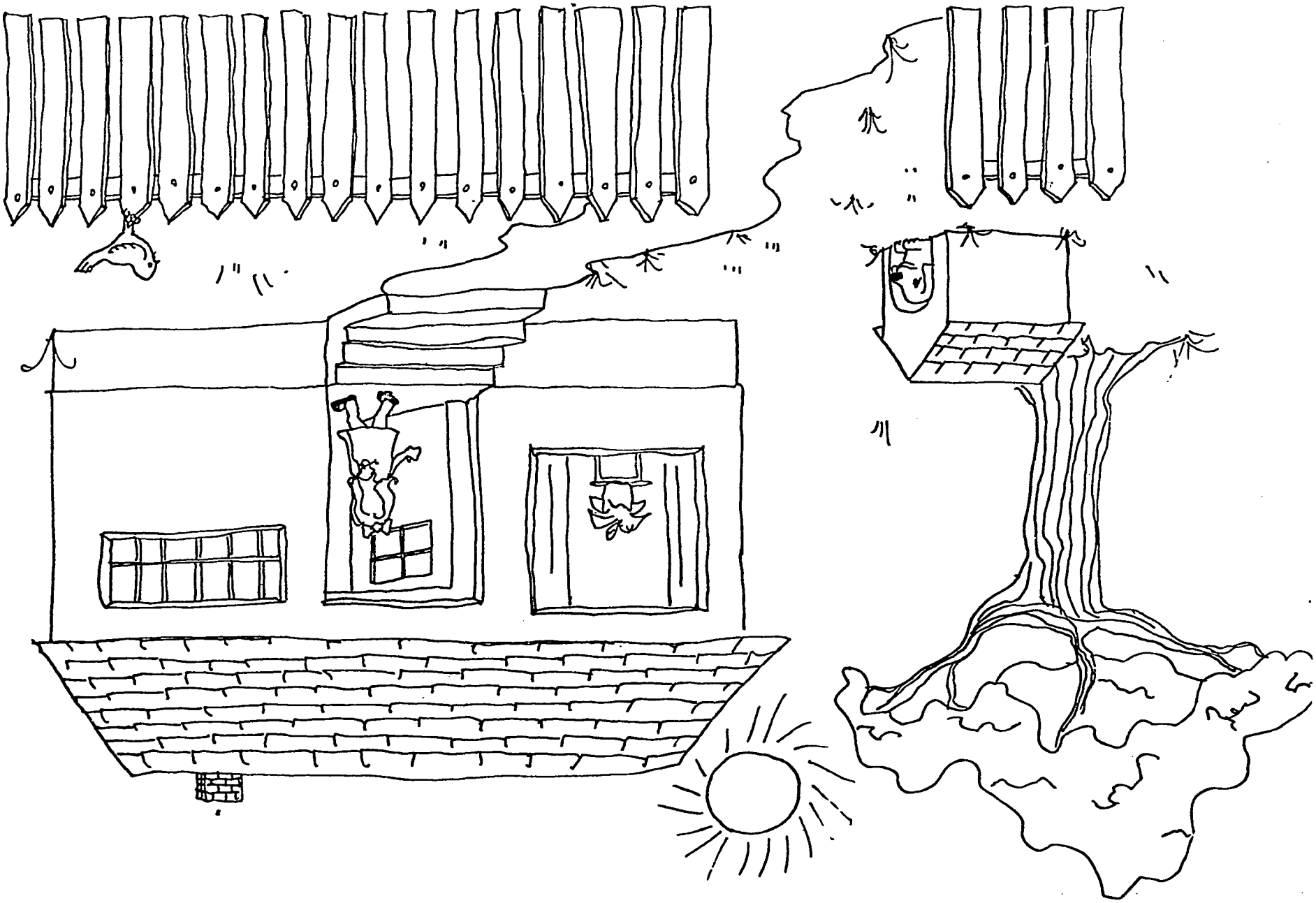


Abstract Designs Test: Set 2

APPENDIX 5

Production Test Stimuli

Pictures 1, 2 and 3 were taken from the Michigan Oral Language Production Test.



APPENDIX 6

Production Test

Grammatical Feature	USE PICTURE 1
Verb 'be'	1. Let's name some things in the picture (point to the objects and if necessary have child repeat): This is a boy. This is the father, and these (point to the trees)...
Plural noun	2. (point to the trees) Let's count these. One, two, three... What?
Double negative	3. The father has a fishing pole, but the boy doesn't have ...
Question	4. (point to the boy) Ask the boy if he has walked along the river before.
Past participle	5. (point to the boy) Ask the boy if he always goes to this river to fish. (Say with the child, Have you always ...)
Question	6. (pointing to self) Ask me if the boy likes to fish.
Past participle	7. (point to the boy) Ask the boy if he always makes his own fishing pole. (If necessary, help the child repeat, "Have you always")
Past tense	8. (point to the fish) Where did the fish jump? (If necessary help child repeat "The fish...")
Verb 'do'	9. (holding up pencil or pen) I have a pencil (pen) in my hand. Tell me if you have a pencil in your hand. (If necessary help child repeat, "No, I...")
Possessive	10. (point to the father's pole) Whose pole is this? This is the...

Comparative	11.	(If necessary help child repeat) The boy thinks T.V. is fun, baseball is more fun and fishing is the ...
Verb 'have'	12.	(point to father's fishing pole) What does the father have in his hand? He ...
Past tense	13.	Did the father need some string or did the boy need some string? The ...
Subject-verb	14.	Does the father go home or does he keep on waiting. He ...
Verb 'have'	15.	What did you have for lunch (breakfast) today? I ...
Plural noun	16.	(point to the rocks one at a time) This is a rock. This is a rock and this is another rock. So, there are three ...

CHANGE TO PICTURE 2

Verb 'do'	17.	(point to the father's shoes) The father wears shoes in this picture. Tell me if the boy wears shoes. No. he ...
Comparative	18.	(point to each fish starting with the smallest on the left). Here are four fish. This fish is short, this one is long, and this fish is the very ...
Plural	19.	(point to the boy's feet) Here's a foot. And here's a foot. So there are two ...
Possessive	20.	(point to the fish's tail) Whose tail is this? This is the ...
Subject-verb	21.	Does the boy use big worms or little worms to get the fish? He ...
Comparative	22.	(point to the boy) The boy is little but the (point to the smallest fish) fish is much ...
Question	23.	Ask the boy if he has ever fished before.

Past participle	24.	Ask the boy if he always sees a lot of fish in the river. (Help the child repeat "Have you always ...)
Past tense	25.	(point to boy's mouth) Did the boy cry a lot or did he smile a lot? He ...
Double negative	26.	(point to the sky) There are no birds in the sky. So we can say that that there aren't ...
		CHANGE TO PICTURE 3
Past tense	27.	When the father and boy finished fishing, where did they go? They ...
Verb 'be'	28.	(point to the father and boy) Who was tired? They both ...
Verb 'be'	29.	(point to each object) Let's name some things in this picture. These are dishes, these are chairs, and (point to the table and if necessary help). This ...
Plural noun	30.	(point to the glass) This is a glass. (point to the second glass) This is a glass. That makes two ...
Possessive	31.	(point to the girl) Let's call this girl Janet. Whose blouse is this? This is ...
Verb 'be'	32.	(point to the father and the boy) The father and boy are wearing shirts. But (shake head NO) the girl ...
Question	33.	(point to the mother) Ask the mother if she baked a pie?
Comparative	34.	Fish for supper is very good, but the boy likes hot dogs much ...
Double negative	35.	(point to the mother) The mother wants to know if the boy wants more milk. The boy says, "No, I don't want ...

Subject-verb	36.	Look. Everybody is eating fish (point to the girl). The girl eats a little bit of fish. (Point to the father and the boy.) They ...
Subject-verb	37.	Does the boy go outside to play after dinner or does he go to bed? He ...
		CHANGE TO PICTURE 4
Negative contraction	38.	(point to the bird) Is the bird flying? No, the bird ...
Negative contraction	39.	(point to the girl) Can a girl fly? No, a girl ...
Negative contraction	40.	(point to the dog) Do dogs fly? No, dogs ...
Negative contraction	41.	(point to the dog) Does the dog have a bone? No, the dog ...
Negative contraction	42.	Are you a boy? (girl?) No ...
Negative contraction	43.	Have you got a dress (trousers) on? No, I ...
Imperative	44.	(point to the girl) Tell the girl not to go into the house.
Imperative	45.	(point to the dog) Tell the dog to chase the bird.
Imperative	46.	(point to the bird) Tell the bird to fly away.
Imperative	47.	(point to the dog) Tell the dog not to fall asleep.

APPENDIX 7

Wh-Question Test

1. Ask the doll what she wants.
2. Ask the doll where she put it.
3. Ask the doll when she will do it.
4. Ask the doll how she got it.
5. Ask the doll what she can do.
6. Ask the doll what I might have.
7. Ask the doll what they will have been doing.
8. Ask the doll what the boy is supposed to see.
9. Ask the doll why she doesn't help.
10. Ask the doll why he won't come out now.
11. Ask the doll why I can't do it.
12. Ask the doll why they aren't here yet.
13. Ask the doll who pushed John.
14. Ask the doll who did John push.

APPENDIX 8

Text of the Revised Story:

Sylvester and the Magic Pebble

Once upon a time there was mother donkey, father donkey and baby donkey who lived together in a house. Baby donkey collected stones. One day, baby donkey went outside and found a beautiful red stone. He picked it up. He was cold from the rain, so he said, "I wish it would stop raining." And immediately the rain stopped. Baby donkey was so surprised. "Maybe this red stone is magic," thought Baby donkey. So he said, "I wish it would rain again" and so it did. Baby donkey was so happy to have found a magic stone. "Now I can have everything I want. "I'll bring it home to Mommy and Daddy and all my friends. Then they can wish for everything they want." But on his way back home, he saw a hungry lion and he was so scared he said, "I wish I were a rock." And he turned into a rock. The lion sniffed around the rock and couldn't find the donkey so he left. Meanwhile baby donkey was now a rock and he couldn't turn into a donkey again because he couldn't pick up the magic rock that was lying beside him.

Back home, mother donkey and father donkey were so sad because their baby hadn't come back. The next morning they asked their neighbors if they had seen baby donkey but they said, "No." They asked the children, the kittens, the puppies, and the piglets if they had seen baby donkey but they said that they hadn't seen him for two days. They went to the police. The police couldn't find the baby donkey. All the dogs were looking for baby donkey. They sniffed and smelled all through the forest but they couldn't find him. Mother donkey was so sad and so was father donkey. One day they decided to go on a picnic. So they went and they sat on a rock. Father donkey found the little red stone lying on the grass and he picked it up. "Baby donkey would have loved this stone for his collection," he said. Then he put it on the rock. Mother donkey was still sad and wished that their baby was with them again. Baby donkey, the rock, thought, "I wish I were a donkey again." And he changed back to a donkey again because the magic stone was on his back. Mother and father donkey were so happy to see him again. They all went home and they put the stone in a box and they never touched it again.

APPENDIX 9

Relevant Story Details

1. Three donkeys lived in a house.
2. The baby collected stones.
3. He found a stone.
4. It was raining.
5. He wished it would stop.
6. It stopped.
7. He thought the stone was magic.
8. He wished it would rain again.
9. It did rain.
10. He was happy to have found it.
11. He wanted to bring it home to his parents and friends.
12. He started to walk home.
13. He saw a lion.
14. The donkey was scared.
15. He wished he were a rock.
16. He turned into a rock.
17. The lion sniffed around the rock.
18. He couldn't find the donkey.
19. The lion left.
20. The donkey couldn't turn back to a donkey again.
21. Because he couldn't pick up the stone.
22. The stone was beside him.
23. His parents were sad.
24. Because they had lost their baby.

25. They asked the neighbors.
26. Had they seen the baby.
27. They said no.
28. They asked all the animals.
29. Had they seen the baby.
30. They said no.
31. They went to the police.
32. They said they couldn't find him.
33. The dogs looked for him.
34. They couldn't find him.
35. The parents were sad.
36. They went on a picnic.
37. They sat on the rock.
38. Father found the stone.
39. Baby would love this.
40. He put it on the rock.
41. Mother wished the baby was there.
42. The baby wished he was a donkey again.
43. He changed into a donkey again.
44. Because the stone was on his back.
45. They were happy.
46. They went home.
47. They put the stone away.
48. They never touched it.

APPENDIX 10

Factor Loadings

Variable Description	No.	I	II	III	IV	V	VI
Object Manipulation	1	.28	-.15	-.04	.07	.32	-.53
Production	2	.70	-.14	-.15	-.21	.25	.01
Wh-Questions	3	.71	-.18	-.21	-.01	.07	-.16
Elaboration Index	4	-.07	.09	.72	.28	.19	-.28
Ambiguity Index	5	-.16	-.02	.66	-.02	.23	.08
Egocentric Explanations	6	-.02	-.13	-.21	-.55	-.18	.03
Imitation Transformations	7	.20	.16	.14	.07	.85	.04
Imitation Phrase Structures	8	-.04	-.17	.19	-.02	.80	.26
Imitation Morphologicals	9	.17	-.13	-.17	-.22	.33	-.24
Total Imitation Errors	10	.14	.01	.14	.00	.96	.10
Nominal Groups	11	-.01	.97	.00	.07	-.02	.02
Pronouns	12	.06	.87	.13	.00	-.12	-.03
Ambiguous Pronouns	13	.32	-.16	.64	-.14	-.19	-.18
Wrong Pronouns	14	.25	.05	.03	-.41	.18	.28
Relevant Details	15	.04	.67	.03	.19	.04	-.59
Story Transformations	16	.20	.26	-.02	.46	.01	.43
Story Phrase Structures	17	.75	.03	.08	.07	-.01	.26
Story Morphologicals	18	.69	.21	.00	-.21	.12	-.01
Story Total Errors	19	.83	.27	.02	.10	.07	.29
Grammatical Units	20	.08	.90	.04	-.09	.14	.27
Conjunctions	21	-.30	.49	-.29	.44	-.16	.04
Irrelevant Details	22	.05	.29	.02	-.21	.19	.80
Poor Images	23	-.01	.35	.38	-.62	-.05	.11
Total Images	24	-.23	.18	.79	.14	.17	-.08
Multiple Concept Explanations	25	-.27	.02	-.37	.64	-.15	-.09
Appropriate Names	26	-.44	.08	.22	.17	.02	-.39

APPENDIX 11

Mean Number of Questions Asked by E on Abstract Designs Test

	MC	LC
Pretest	12.95	15.40
Post test	13.45	12.40

APPENDIX 12

Mean Number of Total Explanations on Abstract Designs Test

	MC	LC
Pretest	7.75	9.90
Post test	12.00	11.80

APPENDIX 13

Means for Production Subtests Errors

Subtest	MC-Pre	LC-Pre	MC-Post	LC-Post
Double Negative	.55	1.80	.50	1.20
Negative Contraction	.10	1.05	.10	.25
Imperative	.35	.85	.10	.95
Do, be, have	1.15	1.90	.15	.85
Questions	1.30	2.50	1.30	1.75
Plural	.70	.90	.25	.50
Subject-verb	.65	.65	.15	.25
Comparative	2.10	2.45	1.50	1.45
Past tense	1.90	2.10	.85	1.25
Possessive	.25	.45	.10	.20
Past Participle	1.90	2.40	1.90	1.95

APPENDIX 14

Mean Number of Incorrect Wh-Questions

	MC	LC
Pretest	6.05	9.45
Post test	4.90	6.65

Social class, $F = 15.35$, $p < .01$, $df = 1,38$
Time of testing, $F = 31.58$, $p < .01$, $df = 1,38$
Social class x time of testing, $F = 5.51$, $p < .05$, $df = 1,38$

APPENDIX 15

Type of Wh-Question Error

Type of Error	Mean Number of Errors				Time of Testing Effects
	MC Pre	LC Pre	MC Post	LC Post	
Pronouns	2.70	2.85	2.55	2.15	$F = 4.84$*
No Inversion	2.30	3.10	1.60	1.50	$F = 9.71$**
Auxiliary Switch	1.55	1.40	1.60	1.35	N.S.
Wrong use of Auxiliary	1.20	1.75	.45	.85	$F = 10.19$**
Got	.65	.60	.20	.40	$F = 15.82$**

** $p < .01$
* $p < .05$
for all Subtests, $df = 1,38$

APPENDIX 16

Means for Ambiguity Index

	MC	LC
Pretest	2.55	2.80
Post test	3.20	2.10

APPENDIX 17

Mean Number of Irrelevant Details Recounted in Story Telling

	MC	LC
Pretest	3.80	6.25
Post test	3.25	4.75

APPENDIX 18

Object Manipulation Subtests

Testing	Mean Number of Errors				Significant F Values		
	MC Pre	LC Pre	MC Post	LC Post	Time of Testing	Social Class	Interaction
Active	.05	.15	.05	.20	N.S.	N.S.	N.S.
Singular/Plural Nouns	.60	1.60	.40	1.55	N.S.	11.99**	N.S.
Possessive	1.45	1.90	1.80	1.50	N.S.	N.S.	N.S.
Negative/ Affirmative Statements	.40	.45	.20	.50	N.S.	N.S.	N.S.
Negative/ Affirmative Questions	1.10	1.15	.50	.65	12.84**	N.S.	N.S.
Subject-verb	1.85	2.10	.75	1.25	17.98**	N.S.	N.S.
Negative/ Affirmative Contractions	.30	.40	.15	.35	N.S.	N.S.	N.S.
Negative Affix	1.75	2.45	1.40	2.10	N.S.	6.04*	N.S.
Reflexive	.70	.85	1.00	1.00	N.S.	N.S.	N.S.
Comparative	1.35	1.95	1.40	1.30	N.S.	N.S.	N.S.
Passive	1.75	2.00	1.10	1.20	9.51**	N.S.	N.S.
Conjunction	1.40	1.40	.60	.50	31.02**	N.S.	N.S.
Double Comparative	2.70	2.65	1.80	2.35	11.03**	N.S.	N.S.
Reciprocal/ Reflexive	.55	1.00	.05	.60	6.72*	5.03*	N.S.
Imperative	.00	.40	.00	.00	12.66**	12.66**	12.66**
If	.35	.30	.05	.00	16.29	N.S.	N.S.

** $p < .01$
* $p < .05$
for all subtests $df = 1,38$

APPENDIX 19

Mean Number of Conjunctions Used in Story Telling

	MC	LC
Pretest	1.75	1.55
Post test	2.35	1.40