# THE DEVELOPMENT OF THE LANGUAGE OF FIRST, THIRD, AND FIFTH GRADE BOYS IN THE AREAS OF MODIFICATION, VERB SLOT, COMPLEMENT SLOT, AND CONCATENATION

by

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# Chapter I

## INTRODUCTION

Recently, there has been a surge of interest in the language of children, particularly since the rapid development of linguistic techniques has opened new methods for the description of their language. These techniques can be used to discover the nature of the stages of development of language patterns and how the children's language differs from the adult model.

There are three main schools of linguistic thought which have shown promise in describing children's language. The American structuralist school, which revolted against traditional language description, attempts to describe language structurally rather than notionally. The three main tools of the structuralists are immediate constituent analysis, patterning, and differential meaning.[1]

The tagmemic school, exemplified by Kenneth Pike, employs basically a slot-filler analysis, but the tagmeme itself is the correlation between the slot and all of its fillers. The tagmemicists consider the primary emphasis to be on function and the secondary emphasis to be on position. Tagmemic descriptions also include a statement as to whether a slot is optional or obligatory to a pattern.

The transformationalists believe that the language is underlain by simple, basic structures which are called 'kernal sentences' which may be transformed into more complicated structures by additions to or combinations of these kernal sentences. There are three sections in transformational theory:[2] the 'phrase structure' in which the basic building blocks of the language, kernal sentences, are put into symbolic form; the 'transform'

section in which these structures are altered to 'generate all and only all the grammatical sentences of a language' (Smith 1965-6); and the phonology section which provides rules for the realization of the output of the transform section.

The present study is part of a larger study being made by Engler and Hannah[3] looking for methods of determining norms for the speech of children. Engler and Hannah employ a model for English based on a combination of concepts borrowed from these three theories of grammar current in linguistics. Much of the analysis used in this study was taken from, or derived from the larger project.

1.2 Purpose. The first hypothesis is that control over different structural patterns of the English language is developed by concentration upon different patterns successively at different age levels. It is further posited that complexity of language growth will be shown by a greater variety of these language patterns and that this complexity will occur with greatest frequency at the oldest (fifth) grade level.

The first purpose has been to test these hypotheses in the pattern areas of modification, the verb slot, the complement slot, and concatenation structure; and, if they prove to be valid, to describe development in these areas at the first, third, and fifth grade levels.

The second purpose of this study has been to develop a workable system for the description and analysis of concatenation structure and to apply it to the examination of such structures.

1.3 Scope. The scope of this thesis has been limited to the examination of the four areas of language described in the purpose. These should cover a wide enough range to discover whether or not the hypotheses are true.

It has been further limited by the fact that all mazes,[4] minor sentences, and sentences that contain structures which were not understandable to the persons transcribing the corpus (unless clearly the filler of an object slot) were not analyzed. The exceptions to these limitations were the garbled object slot and the often used structure looks like... in which the subject it was taken to be deleted. Those sentences which fell outside the scope of the Engler-Hannah project were not analyzed in the first three sections, as the Engler-Hannah corpus and system of analysis were being used.

1.4 Review of the Literature Concerning the Language of Children. There has been a great deal of investigation concerning children's acquisition of language. Yet, most of it has dealt with very small children, learning theory, factors causing differences in language learning, or written language. This has restricted, if not nullified the usefulness of these studies in describing the spoken language of school children.

1.4.1 The Development of the Language of Preschool Children. The age range of these studies is too narrow. Leopold (1953-4) summarized the acquisition of the phonology, morphology, syntax, and vocabulary of his own children when they were very young. His results should not be considered universal because his children were bilingual; however, he discussed the effect of this factor in the development of his children's language.

Miller and Ervin (1964), Brown and Frazer (1964), and Braine (1963c) used different terminology, but obtained very similar results. Each study discovered two basic classes of words in the speech of very young children, which were basically what Fries labeled 'function words' and 'form classes' (Fries 1952:88, 62). The children learn the position of the form classes in

relation to the function words in the sentence. Braine noted that the language grows structurally by adding to the latter and grows in vocabulary by adding to the former.

Berko studied the control of English morphology in the language of both first graders and preschool children. She found that 'the answers were not always right so far as English is concerned; but they were consistent and orderly and they demonstrated that there can be no doubt that children in this age group operate with clearly delimited morphological rules' (Berko 1958:171).

Menyuk also studied the language of preschool and first grade children, but she dealt with the structure of their language by means of transformational grammar. She found that 'all the basic structures used by adults to generate their sentences were found in the grammar of the nursery school group. In comparing the number of children at the two age levels who used these structures, it was found that most of the structures were used at an early age and used consistently. Structures which were still in the process of being acquired by the nursery school group were also still in the process of being acquired by the first grade group' (Menyuk 1963:419-20). While some of her elicitation techniques were questionable, such as the use of the Blacky pictures (Blum 1950) to elicit her corpus (the Blacky pictures were designed to produce manifestations of sex anxiety in children), many of her results were very interesting and occasionally have proved to be valuable references.

Albright and Albright were referring to very young children in their methodological article 'Application of Descriptive Linguistics to Child Language,' but almost all of their statements are valid for older children

as well. They emphasized the rapid changes which occur in children's language as compared to adult language and the uniqueness of each stage of development. The article discussed at some length techniques for the elicitation and segmentation of data. They concluded that 'In this struggle to maintain...[their own unique language]...for communication with others and, at the same time developing it through successive stages of increasing complexity, lies what is probably the central problem of speech development in children. Careful descriptive studies should help to clarify this development' (Albright and Albright 1958:260).

1.4.2 Literature Related to 'Learning Theory'. Although as early as 1958 Albright and Albright emphasized the importance of descriptive studies of children's language, much of the recent investigation of the language of children has ignored their theories in favor of an investigation of 'learning theory'. After his article which dealt with the two main parts of speech, Braine (1963b:323) stated that he believed that 'grammar structure is acquired by "contextural generalization"--a type of generalization which results from a subject's learning the position of a unit in a sequence.' He later rejected this theory (apparently after studying transformational grammar) and decided that 'the place-contingency theory [in which language structures are learned according to their positions in larger structures and the contingency between the parts] can offer an alternative to this "transformer [sic] theory". The "place-contingency theory" will have to treat the learning of transforms as a matter of transfer of learning' (Braine 1963a:6).

While Braine investigated the theory of learning a language, many studies only used language as a tool to discover the nature of the process of learning. Underwood and Keppel (1962) found that learning is a gradual

process. Spielberger and Levin's study (1962) supported the theory that 'what is learned' in verbal conditioning is the awareness of a correct response. The Journal of Verbal Learning and Verbal Behavior contains many 'language studies' which are word-centered or use nonsense syllables. After testing these methods and contrasting them with normal sentences, Marks and Miller found that 'The results demonstrate a differentiation between semantic and syntactic factors and a facilitory effect of both on learning' (Marks and Miller 1964:4). This implies that word-centered studies are not necessarily valid indications of the development of language structure unless the words or slot-fillers are used in actual sentence structures.

Mandler and Mandler also were concerned about the use of lists of unrelated words. They maintained that 'In contrast, the presence of grammatical structure in an English sentence will reveal some of the syntactic relations. Beyond the effect of structure, however, one can look at a serial "learning" task as an experiment in memory rather than learning' (1964:195). In addition they found that 'Serial position curves for sentences differ markedly from those for unrelated words, and they may be said to reveal the core-memory unit of the sentence. What is correctly anticipated, i.e. remembered, frequently is in the form of the major communicative message of the sentence' (Mandler and Mandler 1964:202).

Fodor and Bever (1965) also conducted a study which supported the theory that structural units are thought groups and therefore different from word lists and nonsense languages. In their experiment they asked the subjects to locate subjectively clicks heard during speech. Their results indicated that '(a) clicks are attracted toward the nearest major segment boundaries in sentential material. (b) The number of correct responses is

significantly higher in the case of clicks located at major segment boundaries than in the case of clicks located within segments. (c) These results are consistent with the view that the segments marked by formal constituent structure analysis in fact function as perceptual units and that the click displacement is an effect which insures the integrity of these units' (1965: 414).

1.4.3 Literature Related to the Acquisition of Specific Language Structures. Berko's study (1958) of small children's control of morphology might fall subject to this criticism since she used nonsense words to elicit the responses. However, she was dealing with very young children and wanted to insure that she was eliciting a productive morpheme and not a pattern learned previously as part of one English word accidently used as the stimulus. This study dealt with the inflected forms of nouns, verbs, and adjectives. It was found that most of the morphological inflections were present to some degree with the exception of the comparative and superlative forms of the adjectives.

In Di Vesta's study (1964) of the modification slot, all morphologically inflected parts of speech were excluded. He tried to describe the fillers of the modification slot and the frequency of occurrence of these structures. His exclusion of inflected forms, however, renders his results difficult to relate to other studies. In another study of modifiers Di Vesta stated that 'it appears the child's use of modifiers corresponds closely with those of the adult' (Di Vesta 1966:258). In the latter study he used semantic differential scales to describe the discrepancy between the child and adult's use of modifiers.

1.4.4 Literature Related to the Language of Older Children and/or Written Language. Bernstein worked with London boys from 15-18 years of age. He posited that members of the 'working class' would use a language much more predictable in structure and vocabulary than members of the 'middle class'. He tried to prove that there would be less 'verbal planning' (formulation of language units) in the former group and that this would be shown by shorter and fewer hesitations in speech. The results of his study supported this theory. Bernstein's study is difficult to relate to this thesis, however, because his subject children were much older. Since certain phonological habits are said to be 'set' by age 10, it is possible that some structural habits become 'set' before age 15. There also could be less structuring of society before the fifth grade.

Hunt studied the written language of fourth, eighth and twelfth graders by means of transformational grammar. Almost all the structures which he examined were used by the youngest writers, but many of them 'were used with significantly greater frequency by the older students. In the great majority of instances the ones [structures] which increased were the very ones produced by sentence combining transformations' (Hunt 1964:141). Therefore, 'the older student can incorporate and consolidate more grammatical structures into a single grammatically independent unit' (Hunt 1964:139). Most growth was found in the nominal structures which were 'expanded by the use of noun clauses and near-clauses and by the use of many modifiers some clausal but mostly non-clausal' (Hunt 1964:26). There was a slight increase in the frequency of usage of the verbal auxillary, and a decrease in the frequency of usage of nonclause adverbs which were not produced by sentence combining transformations. He concluded that his study had identified and

isolated some 'growth buds'[5] (Hunt 1964:141).

Hunt's results, however, not only concerned older children, but were taken from written English which has often been said to be a different language or at least a different dialect from spoken English. Zigler, Jones, and Kafes's results (1964) support this statement. In their study of the language acquisition of first, second, and third grade boys they sought to discover factors in language performance. They made every possible combination of any two of the factors: written language, pictures, and spoken language, to discover which factors were discriminated in language performance. The only tests which failed to satisfy their study included spoken language. All of the combinations of writing and pictures were considered to be discriminated adequately. This difference in discrimination indicates that speech and writing are different and should not be equated and compared as if they were the same.

1.4.5 Studies Utilizing Traditional Methodology of Language Description. In her classic study of children's language McCarthy (1954) dealt with the relationship between language development and psychological development. Among other factors she discussed sentence length and the growth of vocabulary. Traditional methodology was used to describe the language of young children; sentences were classified as simple (with and without a phrase), compound and complex (together in one category), elaborated, structurally incomplete but functionally complete, and incomplete.

Templin studied the development of articulation and discrimination of sounds, vocabulary, and sentence structure of children from three to eight years of age. Her methodology was traditional: she classified sentences into the 'McCarthy-Davis sentence construction categories' as outlined

above. She further classified the complete sentences into declarative, interrogative, imperative, and exclamatory; and the subordinate clauses into noun clauses, adjective clauses, and adverb clauses. She found that the usage of all types of subordinate clauses increased at the higher age levels, and by age eight over half of these clauses were adverbial, one third nominal, and fifteen percent adjectival. The eight year olds also used 'five times as much subordination as the three year old subjects' (Templin 1957:92).

1.4.6 Studies Utilizing Linguistically Oriented Methodology of Language Description. Menyuk (1964) used transformational grammar in her study of preschool children and first graders. Other linguists have used a system developed at Indiana University which is basically a description of slots, movables, and 'mazes' (false starts, corrections, and involuted, uncompleted structures). Strickland (1962) used this system to investigate the relationship between the actual structure of children's speech and the structures presented in children's readers. While the comparison is of little interest here, the description of the structure is. She described several patterns of slots and movables which relate to the Engler basic sentence patterns (used as a methodological tool in this thesis). Yet, only four of Engler's fourteen types and sub-types were shown by her system. She did describe the fillers of these slots and subordination in terms of the function of subordinated clauses and the slots which they filled. Yet, she did not describe these clauses in terms of the sentence patterns in which they were found.

Loban (1963) conducted a longitudinal study based on the same system that Strickland used. He studied the language of 334 children every year

from kindergarten to the twelfth grade. In a supplementary study he investigated children some of whom had exceptionally high verbal ability and some exceptionally low verbal ability. He studied the differences between the two groups' speech patterns as well as their reading and writing practices. He admitted that 'clearly determined stages of development remain as yet unmarked' (Loban 1963:87). The most significant conclusion was that 'not basic sentence pattern, but what is done to achieve flexibility within pattern proves to be a measure of proficiency with language at this level' (Loban 1963:88).

DeGraff (1961) studied only the spoken language of first, third, and fifth grade boys. He used basically the same system as Strickland and Loban with the exception that in his study of concatenation, he classified sentences into 'simple, compound, compound-complex, and utterance (incomplete).' The greater part of the study dealt with the description of 'mazes', movable elements, and concatenation based on the previously mentioned system for the description of sentences.

Engler and Hannah (1967) have also conducted an analysis of the speech of first, third, and fifth grade children in the hope of establishing methods for determining norms of development. This study was largely based upon Engler's basic sentence types, a method which used a semi-tagmemic slot filler analysis which consists of a total of fourteen variations of five basic sentence patterns. The system of analysis includes the slots which comprise these sentences, and the fillers which can occur in the slots.

Several of Engler and Hannah's students have undertaken related studies of the Engler-Hannah corpus. Gardner (1966) studied the verb slot deviations of clinical 'language cases' and compared them to the development of

normal children examined in the Engler-Hannah project. Alexander (1966) investigated the structure of the language of the first and third grade boys studied in the Engler-Hannah project, but by means of transformational grammar. Hsu (1966) studied the order of fillers of the modification slot, but he did not indicate the frequency of patterns, the number in a series, or the order of combinations and orders within the series. Campbell (1965) did a theoretical expansion of all the possible concatenation that could result from any two of the Engler basic sentence patterns.

1.5 Justification. A practical justification for this study is that if norms can be set up for children, then the language patterns of children who come to speech clinics can be evaluated in terms of these normal patterns of development. This would be a valuable tool for the speech clinician. This study seeks such patterns.

If methods for analysis and description of these norms can be developed, then these systems can be useful to speech clinicians in evaluation of the patterns of children who deviate from these norms and in structuring therapy to correct these deviations.

Any description of a language which proves to be elegant, practical, and valid would be a definite contribution to the study of language and linguistics, and as such, be a useful tool for people working in these and related fields. It might, for instance, indicate a productive pattern for the order of drills to teach English to speakers of other languages; it might particularly help in developing an elementary school program in teaching English to speakers of other languages. The structures could be presented so that the same patterns which are being used at the age level in question would be emphasized in the drills. The children would then be

learning patterns that their peers who are native speakers of English were developing.

# Chapter II

## PROCEDURE

### 2.1 Collection of the Data.

2.1.1 The Subjects. The corpus for this study was taken from the Engler-Hannah research project, a larger study seeking methods for determining norms for children's speech. Engler and Hannah chose three elementary schools in Manhattan, Kansas, that were representative of the socio-economic strata of the community. They had the teachers at each school choose eight boys and eight girls each from the first, third, and fifth grade levels--a total of 144 subjects. These subjects were to be those whom the teachers considered 'normal', and who were in the 'normal range' (90-110) on the Otis IQ scale. They were also to have had no record of speech or hearing problems.

2.1.2 The Elicitation. At each school, two rooms were equipped with hidden microphones. The first room, called the 'holding room', was furnished with a table and sets of plastic toys. Eight boys were brought from the first grade classroom to this room and allowed to play with the toys and converse freely. Then two were taken to an 'interview room' leaving six to converse without restriction or supervision. The discourse of these six was recorded by the hidden microphones. The 'interview room' had a table, three chairs, and a set of pictures from the Adult Thematic Apperception Test (TAT) (Murray 1943). The children were asked by the interviewer to talk about what they saw in the pictures or tell a story about the pictures. The TAT pictures were used because a pilot study indicated that they would produce less anxiety and more speech than those from the Children's Apperception

Test (CAT) or the Blacky pictures (Blum 1950). In order to allow the children to converse with each other freely, the interviewer tried to remain outside of the conversation as much as possible and only ask short questions whenever necessary to maintain the discourse for the ten minute duration of each interview. This process was repeated at each school with four pairs of each sex at each grade level until the investigators had collected over thirty hours of tape recordings, half in the 'free field' from the holding room and half in the structured interview situation.

2.1.3 The Transcription and Segmentation. The recordings were played back and typed verbatim in standard orthography including 'ums and ahs' and verbal noises. The manuscripts were then coded to correspond with the tapes and to indicate the age, sex, and school of the subjects and the situation in which they were recorded.

To help segment the material, the manuscripts were then marked with virgules whenever a pause was detected on the tape. These slash marks were usually between phrases and clauses; each of these units of the children's speech was then transcribed onto three by five cards and analyzed according to a linguistically oriented system determined by Engler and Hannah.

The material for this study was taken from transcriptions of five interviews with boys at each grade level from two schools (A and B). These included transcriptions of two interviews from A and three from B at each grade level. These have been coded as II A 1, 4; II B 1, 2, 3; IV A 1, 2; IV B 1, 2, 3; VI A 1, 2; and VI B 2, 3, and 4--a total of 15 sets of material each containing 100 segments.

2.2 Methodology. The system of analysis provided by the Engler-Hannah project was used to obtain the results in this thesis pertaining to

modification, the verb slot, and the complement slot, although the analysis of modification was retabulated to obtain the results displayed in this thesis. These areas were therefore examined on the analysis cards used by Engler and Hannah. The fact that the system of analysis developed in this thesis was employed in the analysis of concatenation structure necessitated a return to the original transcription sheets in order to illuminate more clearly the relationships between the units. Therefore, the material in the last section is virtually the same, but not precisely the same corpus as the material utilized in the first three sections which were subject to those limitations set forth in the scope of the Engler-Hannah project. The last section includes all data not excluded by the scope of this study.

2.2.1 Modification. Hsu (1966) endeavored to verify the contention that modification in the speech of fifth grade girls was structured according to a pattern represented by the acronym Doc I Q Sascom. His study showed this to be 'eminently workable' (Hsu 1966:v).

Engler and Hannah found this system to be essentially sound, yet in some cases it proved to be too diverse and in others not diverse enough. Hsu's thesis subdivided determiners into several categories, but the larger project did not. A 'basket category' was developed for those modifiers which resisted analysis by Hsu's system. These modifiers, which were all similar, were designated 'type' modifiers e.g. candy in 'candy apple'. The following modifiers (Table 1) listed in the most common order of appearance before a noun, presents the final system proposed by Engler and Hannah for their project and is the basis of the modification portion of this study. Hsu examined the sequential order of all possible kinds of modifiers and the frequency of occurrence of each type of modifier in certain slots. The

Table 1

Sequential Order of Modifiers

| | | |
|---|---|---|
| 'Pr' | Predeterminer | (all of, some of, most of) |
| 'D' | Determiner | (a, the, some, this, my, Jim's) |
| 'P' | Particularizer | (specific, certain) |
| 'O' | Ordinal | (first, second) |
| 'C' | Cardinal | (one, two, three) |
| 'I' | Intensifier | (very, awfully, terribly) |
| 'Q' | Quality | (good, bad, average) |
| 'S' | Size | (big, little, short) |
| 'A' | Age | (young, old) |
| 'Sh' | Shape | (round, square) |
| 'Cl' | Color | (red, pink) |
| 'Cn' | Condition | (run-down, puny, dilapidated) |
| 'On' | Origin | (Spanish, New York, Indian) |
| 'M' | Material | (cloth, brick, stone) |
| 'St' | Style | (colonial, ranch-style, ranch) |
| 'N' | Nationality | (Canadian, Icelandic) |
| 'T' | Type | (two-wheel [bicycle], candy [apple]) |

present study investigated the actual sequences of modifiers found in the given data. These complexes are described according to number as well as order in a given series.

2.2.2 The Verb Slot.

2.2.2.1 Types of Verbs. Since Engler's system of verb types correlates directly with his system of basic sentence types, both systems are described in Table 2. The sentence types were employed in the concatenation

system developed in this thesis.

The sentence types are based on a semitagmemic system of optional and obligatory slots and their fillers. This method was styled after that of Glinz (1947) in his description of German sentence structure rather than on that of Pike. Hence it does not reflect the usual tagmemic design of structural description and hierarchies or Pike's primary concern with function. Engler's system is, however, in its slot-filler analysis, semitagmemic.

The system consists of five basic sentence types. There are six various patterns of type 1, three each of types 3 and 4, and one each of types 2 and 5.

The verb types (see Table 2) correspond to fillers of the verb slots described in the basic sentence analysis. Since the present study began, the Engler basic sentence types have been revised slightly by dividing type 3.1 into two categories. Verb types 8 and 9 correspond to these new categories (both correspond to type 3.1 in this thesis). The verbs which are found in both the 4.3 and 5 sentence types are classified verb type 12 because they are considered causative. Other than these exceptions there is a one to one ratio between the sentence and verb types. Their relationship is illustrated in Table 2.

2.2.2.2 Types of Verbal Expansion. The Engler system of verbal expansion considers those verbs which operate in the basic sentence types in base form, or with past tense or third person singular present tense inflections, to be the finite forms of the verb (expansion number 1), and any other more complicated verbal complex to be expansions of this finite form. These include all the so called 'tenses' other than the past which is the only

Table 2

The Engler Systems of Sentence Types and Verb Types

| Sentence type | Structural description | Example | Verb type |
|---|---|---|---|
| 1.1 | Subject + Verb + Complement<br>be nominal(NP)<br>adjectival(adj)<br>adverbial(adv) | He is a man. | 1 |
| 1.2 | Subj + Verb + Comp<br>becomes NP<br>adj | He becomes a man. | 2 |
| 1.3 | Subj + Verb + Comp<br>get adj<br>adv | He gets there. | 3 |
| 1.4 | Subj + Verb + Comp<br>comp NP<br>taking adj | He looks a fright. | 4 |
| 1.5 | Subj + Verb + Comp<br>senses adj<br>intransitive | Flowers smell sweet. | 5 |
| 1.6 | Subj + Verb + Comp<br>middle NP<br>adj | He weighs 175 pounds. | 6 |
| 2 | Subj + Verb ± (Adv)<br>intransitive | He smokes (frequently). | 7 |
| 3.1 | Subj + Verb + Object<br>transitive NP | I enjoy the movies. | 8 |
| | gerundive -ing form | I enjoy reading. | 9 |
| 3.2 | Subj + Verb + IO + DO/<br>tran DO + to/for + IO | He gave me the book/<br>the book to me. | 10 |
| 3.3 | Subj + Verb + $Obj_1$ + $Obj_2$<br>factitive | He calls her 'Liz'. | 11 |
| 4.1 | Subj + Verb + NP + verb + Qa[6]<br>senses base form/<br>tran. -ing form | He heard her sing/<br>singing. | 13 |
| 4.2 | Subj + Verb + NP + Infinitive<br>obj infin | He wants her to go. | 14 |

Table 2 (cont.)

| Sentence type | Structural description | Example | Verb type |
|---|---|---|---|
| 4.3 | Subj + Verb + NP + Past part causative | He had his song sung. | 12 |
| 5 | Subj + Verb + Verb ± (by agent/ be/ obj taking with means) get past part | The song was sung. | 12 |

truly inflectional tense. The 'emphatic do' auxiliary which is used most frequently as a device for making questions and negatives, comprises one expansion type. Other expansions include all modals, modal equivalent phrases, and combinations of these complexes. These modal equivalents include many phrases which were traditionally considered to be a verb plus an infinitive such as want to in 'I want to go.' Table 3 describes the Engler verbal expansion system.

2.2.3 The Complement Slot. The complement is the post verb in the type 1 sentence. The fillers which occur in the complement slot are noun phrases, adverbials and adjectivals.

2.2.3.1 Noun Phrase Complements. The noun phrase (NP) is a noun plus all of its modifiers or a nominal or nominal phrase, which includes all structures capable of filling the slots in which noun phrases occur. These structures may be pronouns, infinitives, gerunds, phrases, or clauses. In the description of the noun phrase complement, these fillers have been divided into three major categories: pronouns, nouns, and clauses. While all possible pronoun types were accounted for on the tabulation sheet, only four occurred in the corpus--the interrogative, the indefinite, the possessive, and the 'wh' pronoun.

The nouns were tabulated according to whether they were singular or

Table 3

The Engler Verbal Expansion System

| Expansion type | Label | Example |
|---|---|---|
| 1 | FinV (finite form) | goes/went |
| 2 | $FinAux_{do}$ + base-formV | does/did go |
| 3 | $FinAux_{be}$ + -ing formV | is/was going |
| 4 | $FinAux_{have}$ + past partV | has/had gone |
| 5 | $FinAux_{have}$ + BEEN + ing formV | has/had been going |
| 6 | FinModal + base-formV<br>will shall<br>must may<br>dare need | can<br>might<br>ought (to) |
| 7 | FinModal + BE + ing-formV | will/would be going |
| 8 | FinModal + HAVE + past partV | will/would have gone |
| 9 | FinModal + HAVE BEEN + ing-formV | will/would have been going |
| 10 | $FinAux_{quasi-aux}$ + base-formV | |
| | Quasi-aux: be to[7]<br>be able to<br>be made to<br>be going to<br>be about to<br>be supposed to<br>be in a position to | seem to[9]<br>like to<br>love to<br>need to<br>wish to<br>appear to<br>want to |
| | ask to[8] begin to<br>try to expect to<br>have to intend to<br>long to forget to<br>turn to attempt to<br>start to | used to[10]<br>have got to |
| 11 | FinModal + base-form QuasiAux + base-formV | will be able to go |
| 12 | FinModal + base-form QuasiAux + base-form QuasiAux + base-form | will have to be able to go |

plural. Mass nouns were not tabulated in the Engler-Hannah project; therefore they are not included in these results. Only the number of clauses occurring in the complement slot were in section 3.4. For a detailed description of clause fillers of the complement slot see section 3.5.4.

2.2.3.2 Adjective Complements. Adjectives are defined here as words which occur directly before a noun and can take the inflectional endings -er and -est. The former inflectional suffix is for the comparative form and the latter for the superlative. Those morphs which may take either of these inflected forms, but which occur in the corpus without them are called 'positive'. Adjectivals are forms such as beautiful filling the same slot and performing the same function as adjectives. These differ from adjectives in that they follow the free morphs more and most rather than taking the suffixes -er and -est. The slot may also be filled by a prepositional phrase which performs the same function and is thereby called an adjectival prepositional phrase.

2.2.3.3 The Adverb Complements. In the complement slot, an adverb is usually of the class called 'adverbs of place', e.g. here, there. Other forms which can be found in the same position performing the same function are called adverbials. These were also divided into prepositional phrases and 'other' structures. These and the adverbs were the only forms tabulated.

2.2.4 Concatenation Structure. Campbell (1965) tabulated the theoretically possible concatenations of any two of the Engler basic sentence types (see Table 2) but did not utilize a corpus of the language to attest the structures generated by the theory. In trying to apply Campbell's system to a practical description of the sample of children's speech, several problems were encountered. In accounting for complex sentences which had subordinated

adverbial clauses: 'The man is happy when he drinks 7-up.' or 'When he drinks 7-up, the man is happy.', Campbell (1964:25) described both of these structures as (type 1) + (type 3). In the revision of Campbell's system in this thesis such a symbolization represents two independent clauses connected by a coordinating conjunction. His sentences would be represented here as: (1.1)(≠3.1) and (≠ 3.1) + (1.1) respectively. The symbols '≠' which represents a subordinating conjunction and '+' which represents a coordinating one are taken from Loban's system (1963:14). In some instances both are used as in and when which would be represented by '+(≠ )'.

Four levels of clause structure are posited which further modify Campbell's system. The first (A) level is divided into three sublevels. The first of these ($A_1$) consists of entire unit structures which fell between two pause markings and were not connected by a conjunction unless accompanied by a maze (Z), a false start (Z), or a filler word (X) (Loban 1963:14). These seemed to indicate a definite break in thought pattern and therefore a division between units. However, if there was no pause, or if two short clauses were separated by a pause with no conjunction, yet had an obviously parallel structure, they were assumed to be joined by juxtaposition.[11] (Both of the latter two structures would be punctuated by a semicolon in writing.) The second ($A_2$) sublevel, in traditional terms, consists of the independent clauses found in compound and complex sentences; the third ($A_3$) sublevel contains only dependent clauses found in complex sentences. Whereas Campbell enclosed nearly every clause he described in parentheses, in this study the parenthesis was reserved for the A level clauses.

The second (B) level clauses, which are enclosed in square brackets, are those which fill slots or perform functions within A level clauses.[12]

The third (C) level clauses, enclosed within diamond shaped brackets (‹ ›), are embedded in slots of B level clauses. The fourth (D) level clauses, enclosed within braces, are embedded in the slots of C level clauses. Only one D level clause was found in the corpus.[13]

It may be that level D is as deeply as structures can be embedded without confusion occurring. It would be interesting to use this system for the analysis of a corpus of adult speech in order to ascertain whether there are any more deeply embedded levels of concatenation in an adult model.

The structural descriptions presented in the results and footnotes listed the clauses which were coordinate in the order of their appearance. Since the lower level (more deeply embedded) clauses are described in terms of the slots which they fill in the higher level clauses, those lower level clauses are generally listed first in the structural descriptions with the other levels in ascending order and an A level clause at the end of the description.

By the use of different symbols to enclose each level of concatenation, each clause level is readily visible and the actual structure of embedding clearly illuminated. Because of the unwieldy nature of the compound string, the A level clauses were tabulated in order to determine the nature of the embedding which occurred within them. A detailed analysis of embedding in the A level clauses has been carried out here, to the exclusion of consideration of these structures as compound or complex sentences. This information is presented in the Appendix which contains a complete list of the unit structures found in the corpus. Dealing with them from the compound/complex viewpoint might be valuable, but the analysis would be difficult to clarify because of the numerous unique structures and the variety of possible

combinations.

In the detailed study of embedding in the A level clauses (Table 12) the frequency of occurrence of A level clauses was tabulated in column A (alone) and the frequency of $A_2$ and $A_3$ level clauses was tabulated in column C (conjoined). (In Tables 12 and 13 the embedded levels were also tabulated.) Both of these columns and their combined total were compiled at each of the three grade levels and a column for the frequency of occurrence of each structure at all grade levels is also included in each table.

Neither the Engler basic sentence types nor the Campbell scheme for structural analysis included provision for description of certain nonbasic sentence elements which appeared in several structures of the corpus used in this thesis. Some of these elements were optional adverbs which presented no difficulty; but the others were often pauses, verbal noise, corrections, discarded phrases with little meaning, or tangled sentences. Since these structures required additional means for analysis, Loban's symbols (1963: 13-4) were employed. They are as follows:

'Z = a maze
Example: [...an'he, an' snow time he had to have lot uh, wah-h when he, uh, not too many dogs, he...]

'Z = a false start, a shift in expression, but not the confusion of a maze
Example: I was going to buy [three little...no,] four big bars.

'X = words of little meaning value used as primers or launchers (well, see, you know, let's see, yeah) or as fillers (or something, and so forth)

'U = short utterance, a word or group carrying meaning, ... (Yes, O.K., I think so.)...

'? = unanalyzable construction (This is not a maze but a construction about which the analyst cannot be certain...'

These structures were employed in the analysis to account for the data, and rarely occur in the description of that analysis (found in the Appendix) or the tabulation (found in Chapter III section five). The sentence connectors (+) and subordinators (≠) also provided by the Loban study, were used frequently in the final description of the corpus.

Campbell's theory posited embedding in the following slots: the subject slot; the verb slot; the post-verb slots of sentence types 1, 2, and 3; after the subject in both adverbial and adjectival function; and between the verb and the post-verb, as well as the aforementioned complex sentence.

All of these structures were found with the exception of embedding in the verb slot, embedding between the verb and the post-verb, and embedding after the subject in an adverbial function. For purposes of this study adjectival clauses following the subject were labeled post nominal modifiers (PNM) and described as 'PNM of subject'. Such PNM structures were also found modifying objects, complements, and the heads of prepositional phrases. These were described in the same manner.

In addition there were compound predicates in which two clauses with the same subject were combined by deleting the subject of one. Such structures occurred even in the post-verb slot of the type 4 sentence.[14] One type of compound predicate which the system did not take into account was the pattern subject + type 2 'ing form' verb + adverb of place + type 2 'ing form' verb.[15] While the regular compound predicate is indicated by a straight line connecting the types (2+2), this latter structure is indicated by a curved connecting line (2 2). Perhaps a new type 4 sentence should be posited to allow the system of analysis to account for this structure.

This system for analyzing and describing English concatenation began by

modifying Campbell's as described above. His theoretical system provided a point of departure, but it could not be applied without modification to an actual corpus of English. The system developed in this study has been so applied to the corpus previously specified with the results shown in the next chapter (see section 3.5).

# Chapter III

## RESULTS

3.1 Introduction. The results of the analysis are presented in the tables in this chapter. The tables in the concatenation section contain only A level structures. The entire unit structures are listed in Appendix A. All levels of clauses are included in the descriptions of the modification structure, the verb slot, and the complement slot.

The results have been presented only according to grade level since age is the variable under investigation in this study. Explanations of the abbreviations in the tables may be found in Chapter II.

3.2 Modification. Modification has been investigated in three slots: subject, object, and noun phrase complement. Adjectival complements have been tabulated and listed with the subject modification. Other post nominal modification units, prepositional phrases and a few relative clauses, were listed as 'post nominal modifiers' (PNM). The prenominal modifiers were tabulated according to the number in a series, type, and the order of types.

3.2.1 The Subject Slot. A tabulation of the subject slots found in all levels of clauses is presented in Table 4. ('Number' indicates the number of modifiers in a series; 'order' indicates the order of these modifiers.)

It might be expected that all the structures of the language of children become more complex as the children grow older, but the results of the analysis of this corpus disprove this and support the hypothesis that control over certain language patterns is developed by concentration upon different patterns successively at different age levels. The first graders used more series modification units and had a greater variety of

Table 4

Frequency of Occurrence of Modification Units in the Subject Slot

| Number | Order | First | Third | Fifth | Total |
|---|---|---|---|---|---|
| 1 | | 48 | 50 | 29 | 127 |
| | (D) | 47 | 44 | 28 | 121 |
| | (Pr) | 1 | | | 1 |
| | (O) | | 1 | | 1 |
| | (C) | | 5 | | 5 |
| | (M) | | | 1 | 1 |
| 2 | | 13 | 8 | 7 | 28 |
| | (Pr,D) | 1 | 1 | | 2 |
| | (P,D) | | 1 | | 1 |
| | (D,C) | 3 | 1 | 2 | 6 |
| | (D,Q) | | 1 | 2 | 3 |
| | (D,S) | 3 | 2 | 3 | 8 |
| | (D,Cn) | 1 | | | 1 |
| | (D,T) | 5 | 2 | | 7 |
| 3 | | 2 | 1 | | 3 |
| | (D,S,I) | | 1 | | 1 |
| | (D,S,A) | 1 | | | 1 |
| | (D,A,Q) | 1 | | | 1 |
| 4 | | 1 | | | 1 |
| | (D,I,S,T) | 1 | | | 1 |
| Other Structures | | | | | |
| Adjective complements | | 26 | 18 | 20 | 64 |
| Post nominal modifiers | | 12 | 14 | 4 | 30 |
| Total modifiers | | 64 | 59 | 36 | 159 |
| Total series 2 or more | | 16 | 9 | 7 | 32 |
| Total series 3 or more | | 3 | 1 | | 4 |
| Total series 4 or more | | 1 | | | 1 |

constructions within the series, while the third graders had a larger variety and a slightly higher frequency of single modifiers. It was interesting to note that every modification structure used by the first graders in the subject slot included a determiner, with the exception of the single predeterminer (see Table 4). This could suggest that the determiner plus noun

pattern is learned first and that the use of nouns without determiners is a later pattern development.

The first and third graders experimented more (used a greater variety of patterns) with modification structure than did the fifth graders. This might indicate that the fifth graders use a different kind of structure for description, have settled into patterns of modification, or do not describe as much.

3.2.2 The Object Slot. The object slots which were filled by a noun plus its modifiers are tabulated in Table 5. Object slots which were filled with clauses are discussed in Section 3.5.

Table 5

Frequency of Occurrence of Modification Units in the Object Slot

| Number | Order | First | Third | Fifth | Total |
|---|---|---|---|---|---|
| 1 | | 75 | 63 | 59 | 197 |
| | (D) | 64 | 60 | 52 | 176 |
| | (O) | | | 1 | 1 |
| | (C) | 8 | 2 | | 10 |
| | (M) | 1 | | | 1 |
| | (T) | 2 | 1 | | 3 |
| 2 | | 16 | 18 | 10 | 44 |
| | (Pr,D) | | 3 | 3 | 6 |
| | (D,O) | | | 1 | 1 |
| | (D,Cn) | 3 | | | 3 |
| | (D,S) | 2 | 7 | 1 | 10 |
| | (D,A) | 1 | | 1 | 2 |
| | (D,C) | | 1 | | 1 |
| | (D,M) | 3 | 1 | | 4 |
| | (D,T) | 7 | 6 | 4 | 17 |
| 3 | | | 1 | 1 | 2 |
| | (D,S,A) | | | 1 | 1 |
| | (D,C,S) | | 1 | | 1 |
| Post nominal modifiers | | 5 | 9 | 12 | 26 |
| Total series of 2 or more | | 16 | 19 | 11 | 46 |
| Total series of 3 or more | | | 1 | 1 | 1 |
| Total prenominals | | 91 | 82 | 70 | 243 |

While the majority of the constructions used involving a noun with a single modifier (single modification) in the object slot was found in the first grade, a peak of use of constructions involving a noun head with two or more modifiers before it (series modification) in the object slot was shown in the third grade as opposed to the peak of series modification in the subject slot which occurred in the first grade. In the fifth grade, however, modification in both the subject and object slots had diminished, particularly modification in a series.

The greatest development in variety and frequency of use of the single modifiers was in the first grade. Although the third graders used more series modification units, the first graders' greater use of single modifiers gave the first graders a larger total use of premodification units in the object slot than the total use in either of the other two grades.

3.2.3 The Complement Slot. Only those complement slots which were filled by nouns and their modifiers were examined (see Table 6). The complement slot is further discussed in Section 3.4. Adjectival complements are also tabulated in Section 3.2.1.

A peak in the development of modification in the complement slot, in both frequency and variety, was shown in the third grade. While there were almost as many single modifiers used in the fifth grade, there were only three instances of one type of series development--a two unit series consisting of a determiner plus a 'type' modifier. There was a great deal of variety in the two-unit series of the third graders. This variety of pattern is further developed by the use of a three-unit modifier and a four-unit modifier. The greater use of post nominal modifiers by the fifth graders in both post verb slots indicated that this may be the next

Table 6

Frequency of Occurrence of Modification Units in the Complement Slot

| Number | Order | First | Third | Fifth | Total |
|---|---|---|---|---|---|
| 1 | | 11 | 16 | 15 | 41 |
| | (D) | 11 | 13 | 15 | 38 |
| | (C) | | 3 | | 3 |
| 2 | | 3 | 9 | 3 | 15 |
| | (D,D) | | 1 | | 1 |
| | (D,O) | | 2 | | 2 |
| | (D,C) | | 1 | | 1 |
| | (D,Q) | | 2 | | 2 |
| | (D,S) | | 1 | | 1 |
| | (D,A) | 1 | | | 1 |
| | (D,T) | 1 | 2 | 3 | 6 |
| | (C,S) | 1 | | | 1 |
| 3 | | 1 | 1 | | 2 |
| | (Pr,I,D) | | 1 | | 1 |
| | (D,Q,A) | 1 | | | 1 |
| 4 | | | 1 | | 1 |
| | (D,I,S,A) | | 1 | | 1 |
| Post nominal modifiers | | 2 | 6 | 11 | 19 |
| Total prenominals | | 15 | 27 | 18 | 60 |
| Total series of 2 or more | | 4 | 11 | 3 | 18 |
| Total series of 3 or more | | 1 | 2 | | 3 |
| Adjective complements | | 26 | 18 | 20 | 64 |

modification pattern which is concentrated upon after the prenominals are developed.

3.2.4 Conclusion. Series modification, then, seemed to start in the subject slot and was used frequently in the first grade; it started later in the object slot where it was still developing in the third grade; it seemed to begin even later in the complement slot. While modification in the complement slot showed a peak of frequency of use in the third grade, fifth

graders exhibited more development in the complement slot than they had shown in either of the other slots examined. This seemed to show a progressive pattern of experimentation with, and development of, modification.

3.3 The Verb Slot. According to the Engler verb analysis, the verb slot may be filled by any of fourteen types of verbs, each one of which may be expanded in twelve different ways. This means that there are at least 168 possible minimum fillers of the verb slot. In some cases these expansions may be combined. In the corpus some of these fillers rarely occurred and others not at all. Since it would be rather unwieldy to have 168 or more categories, the results of the analysis of verb-slot fillers have been displayed in Tables 7 and 8.

3.3.1 The Verb Types. The system of verb types is described in Section 2.2.2.1. Since the verb types and sentence types are in nearly one to one correlation (see Table 2), there should be a nearly one to one ratio between the frequency of use of the verb types presented in Table 7 and the frequency of use of the sentence types presented in Table 12. This relationship failed to materialize. One reason for this was that the corpus for the analyses of the two sections was not precisely the same (see Section 2.2.2.1); another reason is that while several people did the analysis for the Engler-Hannah project (from which the tabulation of the frequency of use of the verb types was taken) the analysis of the concatenation section was done by one person (who would probably have a higher scorer's reliability than several people). At any rate, the description of these sentence types in the larger project will be given as a range so that the small discrepancies between the results found in this thesis will undoubtedly fall within that range. The results of the analysis of verb types is presented in Table 7.

Table 7

Frequency of Occurrence of Verb Types

| Verb type | First | Third | Fifth | Total |
|---|---|---|---|---|
| 1 | 96 | 114 | 79 | 289 |
| 2 | | | | 0 |
| 3 | 6 | 2 | 4 | 12 |
| 4 | | 2 | 1 | 3 |
| 5 | | | 2 | 2 |
| 6 | | 1 | | 1 |
| 7 | 101 | 123 | 166 | 390 |
| 8 | 189 | 199 | 150 | 538 |
| 9 | 1 | 3 | 4 | 8 |
| 10 | 12 | 1 | 3 | 16 |
| 11 | | | 1 | 1 |
| 12 | 2 | 1 | | 3 |
| 13 | 4 | 3 | 3 | 10 |
| 14 | 3 | 6 | 6 | 15 |

There were definitely patterns of development shown in the use of verb types, particularly in those used most frequently: types 1, 7, and 8. Verb types 1 and 8 had a great deal of use in the first grade, increasing in the third grade, and then sharply declining in the fifth grade. While the greater use by the first graders of the type 10 verb may seem very surprising, it should be noted that 11 of the 12 instances found here were in one 50 segment section. This could indicate that the context may have given rise to more opportunity to use this structure than did the context in other interviews, or that one of the subjects may have had a greater facility with this type. The third frequent verb type was type 7 which showed a definite trend. This type had a great deal of usage in the first grade; its frequency of usage increased in the third grade, and increased even more in the fifth grade. A final trend detected here was the use of a greater variety of structures in the third and fifth grades than in the first. The small number of occurrences of the other types makes individual generalization unreliable.

3.3.2 The Verbal Expansions. The tabulation of the verbal expansions is presented in Table 8.

Table 8

Frequency of Occurrence of Verbal Expansions

| Expansion | First | Third | Fifth | Total |
|---|---|---|---|---|
| 1 | 296 | 335 | 293 | 924 |
| 2 | 19 | 14 | 26 | 59 |
| 3 | 44 | 49 | 38 | 131 |
| 4 | 3 | 11 | 7 | 21 |
| 5 | 1 | 1 | 1 | 3 |
| 6 | 19 | 23 | 19 | 61 |
| 7 | | 4 | 6 | 10 |
| 8 | | | | 0 |
| 9 | | | | 0 |
| 10 | 31 | 28 | 26 | 85 |
| 11 | | | | 0 |
| 12 | | | | 0 |

Not all of the expansions available in the system appeared in the corpus. The type one expansion is the base form of the verb plus person-tense markers. This was by far the favorite expansion for all the boys. At all three grade levels, it was used more than six times as frequently as any other expansion type. The second most frequent choice was type 3, the be + ing form verb. It was used most often by the third graders, though more frequently by the first than the fifth. Type 3 was used one and one-half times as often as type 10, the quasi-auxiliary + base form verb, which was used most frequently in the first grade, after which it steadily declined in usage.

Expansions 2 and 6 were almost equal in overall popularity but had chronological development patterns which were diametrically opposed to each other. Expansion 6, the modal auxiliary plus base form verb, was used equally as frequently by the first and fifth graders, but neither group used

it as frequently as the third graders. The other three expansions found were types 4, 5, and 7; types 8, 9, 11, and 12 were not found in the corpus. Expansion 5, have + been + ing form verb, was used only once at each grade level. This indicated its presence as a pattern capable of development, but rarely chosen. Expansion 4, have + past part verb, was not used in the first, was used in the third, but was used more often in the fifth. This was the only expansion which showed the pattern of use which might be expected: increasing use with increasing age. Here, the overall trend seemed to be that most development and experimentation was occurring in the third grade.

Of the eight verbal expansions represented in the corpus, four reached peaks of frequency in the third grade, one remained the same (one example at each grade level), one increased in frequency, one declined in frequency and one was used least frequently in the third grade and most frequently in the fifth. This variety of patterns of use supported the first hypothesis of this thesis: control over different structural patterns of the English language is developed by concentration upon different patterns successively at different age levels.

3.4 The Complement Slot. The complement slot can be filled by noun phrases, adjectivals, or adverbials. The tabulation has, therefore, been divided into three sections, only two of which were described here. The fillers which were clauses were described in Section 3.5.4, and the modification of the noun fillers has been discussed in Section 3.2.3.

3.4.1 The Noun Phrase Complement. The nouns have been tabulated as singular or plural. The pronouns tabulated were only those found in the data. The analysis of the complement slot shown in Table 9 was also obtained from the Engler-Hannah project.

Table 9

Frequency of Occurrence of Noun Phrase Fillers of the Complement Slot

| Noun phrase | Type | First | Third | Fifth | Total |
|---|---|---|---|---|---|
| Pronouns | | 5 | 2 | 7 | 14 |
| | interrog | 4 | 1 | | 5 |
| | indef | | 1 | 5 | 6 |
| | possesive | 1 | | | 1 |
| | 'wh' | | | 2 | 2 |
| Nouns | | 24 | 30 | 22 | 76 |
| | sing | 21 | 24 | 19 | 64 |
| | plural | 3 | 6 | 3 | 12 |
| Clauses | | 1 | 2 | 3 | 6 |

A more detailed description of the clause fillers of the noun phrase complement slot can be found in Section 3.5.4.

There are few conclusions to be drawn from these data except that third graders used fewer pronouns in the complement slot than the first and fifth graders, and more nouns, although the number of nouns remained fairly constant. The interrogative pronouns were developed at an earlier age than the indefinite ones. The relatively constant frequency of nouns helped to support the conclusions concerning modification of noun phrase fillers of the complement slot (see Section 3.2.3) since there was a difference in the number of modifiers which modify approximately the same number of nouns.

3.4.2 The Adjectival Complement. The adjectives have been divided into three main sections: positive, comparative, and superlative. The adjectivals were divided into prepositional phrases and 'other' (see Table 10). The adjectival complements are tabulated in Section 3.2.1.

There was greater use of positive adjectives on the first grade level, and the adjectival prepositional phrase showed more use in the fifth grade. The only example of the comparative form was on the fifth grade level; there

Table 10

Frequency of Occurrence of Adjectival Fillers of the Complement Slot

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| Adjective | 24 | 17 | 15 | 56 |
| positive | 24 | 17 | 14 | 55 |
| comparative | | | 1 | 1 |
| superlative | | | | 0 |
| Adjectival (other) | 8 | | 3 | 11 |
| Adjectival preposition | 5 | 8 | 10 | 23 |

were no examples of the superlative form. Although the third graders showed a development of many patterns of the English language, the adjectival complement was not one of their more common patterns. Other adjectivals also had a more extensive development in the first grade than in the two later grades.

3.4.3 The Adverbial Complement. The adverbials were divided into prepositional phrases and 'other' adverbials; the adverbs were not divided (see Table 11).

Table 11

Frequency of Occurrence of Adverbial Fillers of the Complement Slot

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| Adverbs | 36 | 25 | 21 | 82 |
| Adverbials (other) | 5 | 8 | 6 | 19 |
| Adverbial prepositional phrases | 5 | 8 | 10 | 23 |

As with the adjectival complement, the adverbs were used more extensively in the first grade while the adverbials showed slightly more use in the third, and the use of adverbial prepositional phrase increased in the

third and again in the fifth. The fact that adverbial and adjectival prepositional phrases were both most frequently used in the fifth grade suggests that both of these structures may be more complicated structures than any of the other adjectival or adverbial complement slot fillers.

3.4.4 Conclusion. In the complement slot, then, it seemed that the adjectival and adverbial slot-filler patterns were utilized at an earlier age, while the modification of the noun phrase, use of clauses, and the prepositional phrases were the main patterns utilized at a later age.

3.5 Concatenation Structure. Techniques for analyzing concatenation structure are less well developed than techniques for analyzing phonology and other syntactic structures. Many people have tried to use the traditional system of simple, compound, complex, and compound-complex sentences, but they have never adequately described the complexity of these sentence types. One of the major aims of this thesis has been to develop a system which will do this adequately; a second has been to use this system to describe the types and extent of children's concatenation structure. The system has been explained in Chapter II, and the symbols used will be found there.

The most basic type of concatenation seemed to be the compound sentence connected with the conjunction and. Another more complicated kind of compounding was the compound predicate. There were several concatenation structures which occurred as the embedding of a B level clause in one of the slots of an A level clause. These clauses can be found regularly in the object and complement slots and as post nominal modifiers. Other less common kinds of embedding were found in the subject slot as heads of PNM prepositional phrases and as complementary adverbs. There were also unique compound predicates in clauses, one of which filled the post-verb of a (4.2)

sentence (for an example see footnote 11), and one of which had another clause embedded as the head of a PNM prepositional phrase of the object of one of the compounds.[16]

The compound sentence joined with and was also the most common structure found in the corpus. It occurs in long strings which include complex as well as simple $A_2$ level clauses. Menyuk noted that such sentences are common, but that 'the addition of structure to structure does not indicate that any different basic structures have been acquired' (Menyuk 1963:418). The length of these sentences may indicate that and was only a filler for a thought pause. Because of this possibility, and because of length, all structures have been broken down into A level clauses for investigation. The description in the tables indicates whether these clauses were alone (A) or in a conjoined structure (C).

The complex sentence was also broken down into A level clauses. Frequent conjunctions were and then, or and when, or and if. Such strings could be continued for several clauses. The entire units have been described in the appendix. Many of these combinations were unique, and it seems that there were few restrictions on the types of sentences which could be combined or the ways in which they could be combined. These restrictions might be examined in a later study.

3.5.1 Simple A Level Clauses. The first area investigated in this section was the simple A level clause, enclosed in parentheses, as presented in Table 12. Each of these were classified according to Engler's five basic sentence types (see Table 2).

The clauses have been tabulated according to sentence type and as to whether they were found as a complete unit, (A) or as part of a coordinated

or subordinated structure in a compound or complex sentence (C). The last column in this section marked (Total) included the embedded levels (E) as well as the A level clauses. Table 13 included the embedded levels in the tabulation of the (C) column; Tables 14-17 only presented the tabulation of the A level clauses. The other tables included structures embedded in higher level constructions only in that they were described as fillers of slots in the structural description. The first two tables did not include embedding of this nature.

Table 12

Frequency of Occurrence of A Level Clauses

| Type | First grade | | | Third grade | | | Fifth grade | | | Total | (Total) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | T | A | C | T | A | C | T | A+C | A+C+E |
| 1.1 | 49 | 25 | 74 | 38 | 31 | 69 | 29 | 7 | 36 | 179 | 228 |
| 1.2 | | | 0 | | | 0 | | | 0 | 0 | 0 |
| 1.3 | 1 | 1 | 2 | 3 | 1 | 3 | 2 | 1 | 3 | 8 | 10 |
| 1.4 | | | 0 | 1 | | 1 | 2 | | 2 | 3 | 4 |
| 1.5 | | | 0 | 1 | | 1 | | | 0 | 1 | 1 |
| 1.6 | | | 0 | | | 0 | | | 0 | 0 | 0 |
| 2 | 29 | 32 | 61 | 18 | 21 | 39 | 42 | 23 | 65 | 165 | 280 |
| 3.1 | 67 | 56 | 123 | 60 | 46 | 106 | 56 | 20 | 76 | 305 | 515 |
| 3.2 | 3 | 4 | 7 | 2 | 1 | 3 | | | 0 | 10 | 17 |
| 3.3 | | 2 | 2 | | | 0 | 1 | | 1 | 3 | 3 |
| 4.1 | 3 | 2 | 5 | 1 | 1 | 2 | | 1 | 1 | 8 | 10 |
| 4.2 | 1 | 1 | 2 | | | 0 | 2 | | 2 | 4 | 5 |
| 4.3 | 1 | | 1 | 2 | | 2 | | | 0 | 3 | 3 |
| 5 | 1 | 1 | 2 | 1 | 1 | 2 | | | 0 | 4 | 5 |

Several patterns were indicated by Table 12. The first and third graders both used many 1.1 type sentences, but while the first graders used almost twice as many of these alone, the third graders used almost as many in the conjoined structures as they used as complete units ($A_1$ level clauses). The fifth graders' use of this sentence type decreased sharply, particularly in conjoined structures. No instances were found of types 1.2

and 1.6 in this corpus. The most common structure, which was 3.1, showed a peak in the first grade both in conjoined structures and as complete units ($A_1$ level clauses). The development decreased slightly in the third grade and then sharply in the fifth, particularly in conjoined structures. Types 3.2 and 4.1 which were also used more frequently by the first graders, followed the same general pattern in the other grades as type 3.1. Types 4.3 and 5 were used in the first and third grades occasionally, but not at all in the fifth grade.

Sentence type 2 was nearly as common as type 1.1, but its development was different. The total number of instances of its use was almost the same in the first and the fifth grades, but type 2 had many fewer instances in the third grade. The first graders used it more often in concatenated structures than alone, the third graders frequency of use decreased sharply and the fifth graders more than doubled its use in unconcatenated structures.

When both frequency and variety are considered, Table 12 indicates that the type 3 sentences reached a peak of use in the first grade, the type 1 sentences in the third, and type 2 in the fifth. The type 4 sentences were used more often in the first grade. The rarity of type 5 rendered it difficult to draw any conclusions except that its infrequency of use was identical in the first and third grades; and in these data, not a single instance of it was found in the fifth.

3.5.2 Compound Predicates. Compound predicates are those structures which contained a single subject with two verbs. Most of these verbs were connected with coordinate conjunctions--particularly and; indicated by the use of a connecting straight line underneath the structure. Those connected with a curved line underneath were 'maverick' structures which did not fit

into the system but for consistency they were all marked in the same manner. These 'maverick' structures were all sentences with a type 2 verb (ing form) and another uncoordinated type 2 (ing form) verb following an adverb (see footnote 15). Table 13 includes all of the compound predicates found in the data.

Table 13

Frequency of Occurrence of Compound Predicates

| Structure | First grade | | | Third grade | | | Fifth grade | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | T | A | C | T | A | C | T | |
| (1.3+3.1) | | | 0 | 1 | | 1 | | | 0 | 1 |
| (2+1.3) | | | 0 | | 1 | 1 | | | 0 | 1 |
| (2+2) | 2 | | 2 | 1 | 1 | 2 | 3 | 1 | 4 | 8 |
| (2 2) | 1 | | 1 | | 1 | 1 | | | 0 | 2 |
| (2+3.1) | 1 | 1 | 2 | 4 | 4 | 8 | 9 | 2 | 11 | 21 |
| (2+3.2) | 1 | | 1 | | | 0 | | | 0 | 1 |
| (2+4.1) | | | 0 | | | 0 | | 1 | 1 | 1 |
| (3.1+2) | | | 0 | | 2 | 2 | 2 | | 2 | 4 |
| (3.1+3.1) | 1 | 2 | 3 | 1 | 3 | 4 | | 3 | 3 | 10 |
| (2+2+2) | | | 0 | | | 0 | | 2 | 2 | 2 |
| (2 2+2) | | | 0 | | 1 | 1 | | | 0 | 1 |
| (3.1+4.1+3.1) | 1 | | 1 | | | 0 | | | 0 | 1 |
| (2+3.1+2+3.1) | | | 0 | | | 0 | | 1 | 1 | 1 |
| Total compounds | 7 | 3 | 10 | 7 | 13 | 20 | 15 | 9 | 24 | 42 |

While the third graders used many more of these structures in conjoined strings, the fifth graders used more than twice as many of these structures in $A_1$ level clauses as the first or third graders did. That the first graders used as many of them alone as the third graders, but that there was twice the total frequency of use by the third graders revealed the growing complexity of this kind of structure. The third graders seemed to experiment with the series of two predicates, while the fifth graders experimented more with the series of three or more. The first graders did not use any pattern more frequently than any of the others, but they did seem to prefer

the series of two of the same sentence types or the (2+3.1) pattern. By the third grade the favorite pattern seemed to be the (2+3.1) pattern which was a much more common pattern than (3.1+2). While (2+3.1) was also the favorite pattern of the fifth graders, their next most frequent pattern was the series of the same pattern, usually (2+2) or (3.1+3.1).

3.5.3 Embedding in the Object Slot of A-Level Clauses. The slot which most frequently included embedded structures was the object slot. Table 14 has been divided into two sections; the first section consists of relatively uncomplicated embedded structures in which a simple B level clause was used as the object of a (3.1) sentence. These were frequently used. The second part of the table consists of more complex embedded structures often consisting of C level structures embedded within B level structures embedded within A level structures.[17] All but one of these were unique and were tabulated with A if they occurred as an $A_1$ level clause or C if they occurred as an $A_2$ or $A_3$ level clause. The only one which was not unique was tabulated as '2A' indicating that there were two instances of this structure and that both of them were $A_1$ level structures.

Most development of simple embedded structures occured in the first grade, with the exception that the third graders more frequently used the structure ([3.1] as object of 3.1). All of these structures were used as $A_1$ level structures (almost exclusively) in the first grade but were frequently used in $A_2$ or $A_3$ structures in the third grade. This structure had almost disappeared by the fifth grade, and those structures that were found occurred in the three most frequent patterns used in the lower grades.

In the more complicated patterns of embedding in the object slot, the third graders experimented most. There were four main patterns of

Table 14

Frequency of Occurrence of Clauses Embedded in the Object Slot

| Structure | First grade | | | Third grade | | | Fifth grade | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | T | A | C | T | A | C | T | |
| ([1.1] as obj of 3.1) | 11 | 1 | 12 | 8 | 2 | 10 | 4 | | 4 | 26 |
| ([2] as obj of 3.1) | 10 | 1 | 11 | 6 | 1 | 7 | 6 | 1 | 7 | 25 |
| ([3.1] as obj of 3.1) | 5 | 1 | 6 | 11 | 4 | 15 | 4 | 2 | 6 | 27 |
| ([3.2] as obj of 3.1) | 3 | | 3 | | | 0 | | | 0 | 3 |
| ([5] as obj of 3.1) | 1 | | 1 | | | 0 | | | 0 | 1 |
| ([MS] as obj of 3.1) | | | 0 | | 1 | 1 | | | 0 | 1 |
| ([?] as obj of 3.1) | 2 | | 2 | | | 0 | | | 0 | 2 |
| Total simple structures | | | 35 | | | 33 | | | 17 | 85 |

| Structure | Grades | | | Total |
|---|---|---|---|---|
| | 1 | 3 | 5 | |
| ([3.1]+[2] as obj of 3.1) | 2A | | | 2 |
| ([1.1]+[2]+[2]+[2]+[1.1] as obj of 3.1) | | | A | 1 |
| ([2+2+2] as obj of 3.1) | | | A | 1 |
| ([1.1]+[3.1+2] as obj of 3.1) | | A | | 1 |
| ([2+3.1]+[2] as obj of 3.1) | | A | | 1 |
| (⟨2⟩ as obj of 3.1] as obj of 3.1) | A | | | 1 |
| ([⟨3.1⟩ as obj of 3.1] as obj of 3.1) | A | | | 1 |
| ([⟨3.1⟩ as D.O. of 3.2] as obj of 3.1) | | A | | 1 |
| ([⟨2⟩+⟨MS⟩ as obj of 3.1] as obj of 3.1) | | A | | 1 |
| ([3.1+⟨2⟩ as obj of 3.1] as obj of 3.1) | | A | | 1 |
| (3.1+[3.1] as obj of 3.1) | C | | | 1 |
| ([⟨3.1⟩ as PNM of obj of 3.1] as obj of 3.1) | | A | | 1 |
| ([⟨1.1⟩ as PNM of NP of NP comp of 1.1] as obj of 3.1) | | C | | 1 |
| ([⟨2⟩ as PNM of NP of 1.1]+[2]+[2+3.1] as obj of 3.1) | | | A | 1 |
| Total complex structures | 6 | 7 | 3 | 16 |

embedding: (1) strings of coordinated clauses (sometimes with compound predicates) used as objects (for an example see footnote 17); (2) C level clauses used as objects of B level clauses which were used as objects of A level clauses;[18] (3) C level clauses used as postnominal modifiers of objects and complements of B level clauses which were the objects of the main A level clause;[19] and (4) B level clauses which were the objects of one of a pair of verbs in an A level compound predicate. One of the latter

structures was also used as a B level filler of the object slot in an A level clause.[20]

The seven different complex patterns found in the third grade included all of these four main patterns. The first graders used a total of five instances of the four different patterns, but didn't use the PNM structure. The fifth graders used only a total of three patterns, but they were more complicated than those used by the first graders. One was a string of three coordinated B level clauses, one with a C level PNM of the NP comp of its main clause, one simple, and one with a double compound predicate: all of the preceding functioned as the object of the main A level clause (for an example see footnote 19).

3.5.4 Embedding in the Complement Slot of A Level Clauses. All of the embedded structures found in the complement slot belong to the list of noun phrase slot fillers. This structure was relatively rare in the language of six through ten year-old boys. The last, highly complicated structure was uttered as an entire unit sequence by a fifth grade boy. ('NP' represents NP complement.)

Table 15

Frequency of Occurrence of Clauses Embedded in the Complement Slot

| Structure | First grade | | | Third grade | | | Fifth grade | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | T | A | C | T | A | C | T | |
| ([1.1] as NP of 1.1) | 1 | | 1 | | | 0 | | | 0 | 1 |
| ([3.1] as NP of 1.1) | | | 0 | 1 | | 1 | 5 | 2 | 7 | 8 |
| ([2+3.1][≠2][≠2][≠⟨2+f1.1⟩ as X after 3.1+2+3.1⟩ as obj of 3.1] as NP of 1.4) | | | 0 | | | 0 | 1 | | 1 | 1 |

It will be remembered that the development of modification of the noun phrase complement structure reached a peak in the third grade, but that it

was still used frequently in the fifth grade. Since the development of the clause as a noun phrase slot filler shows a peak in the fifth grade, it probably represented a later development; the total number of clauses used in the first, third, and fifth grades was 1, 2, and 8 respectively. Seven of the eight occurrences in the fifth grade were the same pattern: (3.1 as NP comp of 1.1). The last structure in the table was the most complicated $A_1$ level clause in the corpus: a D level clause used as a discarded phrase after one of the verbs of a quadruple C level compound predicate; all of the C level clauses functioned as the object of one of a series of three B level clauses. The other two B level clauses were a double compound predicate and a simple clause. All of the B level clauses formed the NP complement of a 1.4 A level clause (for an example see footnote 13). That this highly complicated structure was also found in the fifth grade level supports the hypothesis that language structures developed at later age levels are more complex structures than those developed at an earlier age level.

3.5.5 Embedded Post Nominal Modifiers. The last major area of embedding is the use of clauses as post nominal modifiers. These structures modified objects, complements, or occasionally the heads of adverbial prepositional phrases. They were also used as the heads of prepositional phrases which functioned as post nominal modifiers. The former have been tabulated separately as the structures seem different enough to warrant such separation. The two totals were then tabulated concurrently.

Experimentation with embedding in post nominal modification structures reached a peak in the third grade, although there seemed to be a preference in the fifth grade for the structure ([2] as PNM of NP comp of 1.1). On rare occasions, a clause was found embedded as the head of a prepositional

Table 16

Frequency of Occurrence of Clauses Embedded as Post Nominal Modifiers

| Structure | Grade 1 | 3 | 5 | Total |
|---|---|---|---|---|
| ([?] as PNM of NP comp of 1.1) | A | | | 1 |
| ([2] as PNM of NP of 1.1) | | A | 3A | 4 |
| ([3.1] as PNM of NP of 1.1) | A | A | A | 3 |
| ([2] as PNM of obj of 3.1) | | 2A | | 2 |
| ([3.1] as PNM of obj of 3.1) | | A | | 1 |
| ([3.2] as PNM of obj of 3.1) | A | | | 1 |
| ([2] as PNM of DO of 3.2) | C | | | 1 |
| ([1.1] as PNM of head of adv prep ph comp of 1.1) | | C | A | 2 |
| ([2]+[2] as PNM of MS) | | A | | 1 |
| ([2] as PNM of head of adv prep ph before 2+2) | | A | | 1 |
| (2+[2] as PNM of obj of 3.1) | | A | | 1 |
| Total | 4 | 9 | 5 | 18 |
| ([2] as head of PNM prep ph of head of adv prep ph of 3.1) | | C | | 1 |
| ([3.1] as head of PNM prep ph of obj of 3.1) | | | A | 1 |
| (3.1+[2] as head of PNM prep ph of obj of 3.1) | | | A | 1 |
| Total | 0 | 1 | 2 | 3 |
| Total total | 4 | 10 | 7 | 21 |

phrase used as a post nominal modifier. These structures were usually found in $A_1$ level clauses.

3.5.6 Embedding in the Subject Slot. Though relatively rarely, a clause can be embedded in the subject slot (see Table 17).[21]

Table 17

Frequency of Occurrence of Clauses Embedded in the Subject Slot

| Structure | First grade A | C | T | Third grade A | C | T | Fifth grade A | C | T | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| ([3.1] as sub of 1.1) | | | 0 | | | 0 | | 1 | 1 | 1 |
| ([4.1] as sub of 1.1) | | 1 | 1 | | | 0 | | | 0 | 1 |
| ([3.1] as sub of 3.1+3.1) | 1 | | 1 | | | 0 | | | 0 | 1 |
| Total | | | 2 | | | 0 | | | 1 | 3 |

Since there are only three instances of this type of structure, any conclusions drawn from these data are highly tenuous. However, the fact that two of these three are in the first grade demonstrated that this pattern was available to them. The fact that the other instance was in the fifth grade showed that this pattern was still used occasionally by the older children.

3.5.7 Other Structures. There were only two structures remaining to be explained. One has a ([2] as an optional adverb after 2) which was uttered by a first grader in an $A_1$ level clause.[22] The other was a compound predicate used by a first grader in an $A_2$ level string as the post-verb of a type 4.2 clause (see footnote 11). (Type 4.2 can have any other sentence type after the main verb. Hence the description of the post-verb will vary according to the type of verb used there.)

3.6 Summary of Results. It seemed characteristic of the first graders to concentrate on the use of a few specific patterns while the third graders tended to use a greater variety of patterns. Like the first graders, the fifth graders seemed to show a preference for certain patterns.

Structures which reached a peak of frequency of use in the first grade were:

3.2.1 Modification in the subject slot;

3.2.2 Modification in the object slot;

3.3.2 Verbal expansion 10;

3.4.1 The use of pronouns in the complement slot;

3.4.2 The use of positive adjectives and adjectivals in the complement slot;

3.4.3 The use of adverbials in the complement slot;

3.5.1 Sentence types 1 (in frequency but not variety), 3, and 4;

3.5.3 Simple B level clauses embedded in the object slot; and

3.5.6 Simple B level clauses embedded in the subject slot.

Structures which reached a peak of frequency of use in the third grade were:

3.2 Post nominal modification structures in the subject, object, and complement slots;

3.2.3 Modification in the complement slot;

3.3.1 Verb types 1 (in variety but not frequency) and 7;

3.3.4 Verbal expansions 1, 3, 4, and 6;

3.4.1 The use of nouns in the complement slot;

3.4.3 The use of adverbials in the complement slot; and

3.5.4 Complex clauses embedded in the object slot.

Structures which reached a peak of frequency of use in the fifth grade were:

3.3.1 Verb type 6;

3.3.2 Verbal expansion 2;

3.4.1 The use of clauses in the complement slot;

3.4.2 The use of adjectival prepositional phrases in the complement slot;

3.4.3 The use of adverbial prepositional phrases in the complement slot;

3.5.1 Sentence type 2;

3.5.2 Compound predicates;

3.5.4 Clauses embedded in the complement slot; and

3.5.5 Clauses embedded as the heads of prepositional phrases used as post nominal modifiers.

Although the peak of frequency of use of the following structures was reached in the third grade, the first graders' frequency of use was almost

as high:

3.3.1 Verb types 3 and 7.

Although the peak of frequency of use of the following structures was reached in the first grade, the third graders' frequency of use was almost as high:

3.2.2 Modification in the object slot;

3.3.2 Verbal expansion 4; and

3.4.3 The use of adverbials in the complement slot.

Although the peak of frequency of use of the following structures was reached in the third grade, the fifth graders' frequency of use was almost as high:

3.2.3 Modification in the complement slot;

3.3.2 Verbal expansion 4; and

3.4.3 The use of adverbial complements other than prepositional phrases.

Structures which decreased in frequency in the third grade from the first and increased again in the fifth were:

3.4.1 The use of pronouns in the complement slot;

3.4.3 The use of adjectival complements; and

3.5.1 Sentence types 2, 3.3, and 4.2.

# Chapter IV

## CONCLUSIONS

4.1 The System of Concatenation. The system developed in this thesis for the description of concatenation structure has proved workable. After a period of acquaintance with the system, it should be capable of use for analysis with relative ease. The results of its use for analysis in this thesis seemed to produce discriminating results among the various structures described.

4.2 The Hypotheses. The hypotheses of this thesis were (1) that control over different structural patterns of the English language is developed by concentration upon different patterns successively at different age levels, and (2) that complexity of language growth would be evidenced by a greater variety of these language patterns and that this complexity will occur with greatest frequency at the oldest (fifth) grade level. The results of this thesis supported the first hypothesis. Different patterns of the language do seem to be developed at different age levels, and the areas investigated were sometimes developed in different ways (with different kinds of slot fillers) at these different age levels. However, the second hypothesis was found to be invalid. The most variety of usage occurred in the third grade. If indeed the language of the fifth graders is more complex because of their increased experience, this complexity is shown by the specific patterns which they emphasize rather than the variety of patterns which they use.

# APPENDIX

Complete unit concatenation structures found in the corpus.

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| (1.1) | 49 | 38 | 31 | 118 |
| (1.3) | 1 | 2 | 2 | 5 |
| (1.4) | | 1 | 2 | 3 |
| (1.5) | | 1 | | 1 |
| (2) | 29 | 18 | 42 | 89 |
| (3.1) | 67 | 60 | 56 | 183 |
| (3.2) | 3 | 2 | | 5 |
| (3.3) | | | 1 | 1 |
| (4.1) | 3 | 1 | | 4 |
| (4.2) | 1 | | 2 | 3 |
| (4.3) | 1 | 2 | | 3 |
| (5) | 1 | 1 | | 2 |
| (1.3+3.1) | | 1 | | 1 |
| (2 2) | 1 | | | 1 |
| (2+2) | 2 | 1 | 3 | 6 |
| (2+3.1) | 1 | 4 | 9 | 14 |
| (2+3.2) | 1 | | | 1 |
| (2+4.1) | | | 1 | 1 |
| (3.1+-2) | | | 2 | 2 |
| (3.1+3.1) | 1 | 1 | | 2 |
| (3.1+4.1+3.1) | 1 | | | 1 |
| ([1.1] as obj of 3.1) | 11 | 8 | 4 | 23 |
| ([2] as obj of 3.1) | 10 | 6 | 6 | 22 |
| ([3.1] as obj of 3.1) | 5 | 11 | 4 | 20 |

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| ([3.2] as obj of 3.1) | 3 | | | 3 |
| ([5] as obj of 3.1) | 1 | | | 1 |
| ([?] as obj of 3.1) | 2 | | | 2 |
| ([ 3.1]+[2 ] as obj of 3.1) | 2 | | | 2 |
| ([ 1.1]+[2]+[2]+[2]+[1.1 ] as obj of 3.1) | | | 1 | 1 |
| ([2+2+2] as obj of 3.1) | | | 1 | 1 |
| ([ 1.1]+[3.1+2 ] as obj of 3.1) | | 1 | | 1 |
| ([ 2+3.1 ] as obj of 3.1) | | 1 | | 1 |
| ([⟨2⟩ as obj of 3.1] as obj of 3.1) | 1 | | | 1 |
| ([⟨3.1⟩ as obj of 3.1] as obj of 3.1) | 1 | | | 1 |
| ([⟨3.1⟩ as DO of 3.2] as obj of 3.1) | | 1 | | 1 |
| ([⟨2⟩+⟨MS⟩ as obj of 3.1] as obj of 3.1) | | 1 | | 1 |
| ([3.1+⟨2⟩ as obj of 3.1] as obj of 3.1) | | 1 | | 1 |
| ([⟨3.1⟩ as PNM of obj of 3.1] as obj of 3.1) | | | 1 | 1 |
| ([⟨2⟩ as PNM of NP of 1.1]+[2]+[2+3.1] as obj of 3.1) | | | 1 | 1 |
| ([1.1] as NP comp of 1.1) | 1 | | | 1 |
| ([3.1] as NP of 1.1) | | 1 | 5 | 6 |
| ([2+3.1][≠2][≠2][≠⟨2+⟨1.1⟩ as X after 3.1+2+3.1⟩ as obj of 3.1] as NP of 1.4) | | | 1 | 1 |
| ([?] as PNM of NP of 1.1) | 1 | | | 1 |
| ([2] as PNM of NP of 1.1) | | 1 | 3 | 4 |
| ([3.1] as PNM of NP of 1.1) | 1 | 1 | 1 | 3 |
| ([2] as PNM of obj of 3.1) | | 2 | | 2 |
| ([3.1] as PNM of obj of 3.1) | | 1 | | 1 |
| ([3.2] as PNM of obj of 3.1) | 1 | | | 1 |

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| ([1.1] as PNM of head of adv prep ph comp of 1.1) | | | 1 | 1 |
| ([2]+[2] as PNM of MS) | | 1 | | 1 |
| ([2] as PNM of obj of adv prep ph before 2+2) | | 1 | | 1 |
| (2+[2] as PNM of obj of 3.1) | | 1 | | 1 |
| ([3.1] as head of PNM prep ph of obj of 3.1) | | | 1 | 1 |
| (3.1+[2] as head of PNM prep ph of obj of 3.1) | | | 1 | 1 |
| ([3.1] as sub of 3.1+3.1) | 1 | | | 1 |
| ([2] as opt adv after 2) | 1 | | | 1 |
| (1.1)(1.1) | | 1 | 1 | 2 |
| (1.1)+(1.1) | | 1 | 3 | 4 |
| (≠1.1)(1.1) | | 1 | | 1 |
| (1.1)+(2) | | 1 | 1 | 2 |
| (1.1)(3.1) | 1 | | | 1 |
| (1.1+(3.1) | | 2 | | 2 |
| (≠1.1)(3.1) | | 1 | | 1 |
| (≠1.1)(3.2) | 1 | | | 1 |
| (1.1)(3.3) | 1 | | | 1 |
| (1.1)+(5) | | 1 | | 1 |
| (1.1)+([3.1] as NP of 1.1) | | | 1 | 1 |
| ([3.1] as NP of 1.1)(≠2) | | | 1 | 1 |
| (1.1)+(1.1)+(1.1) | | 2 | | 2 |
| (1.1)+(1.1)+(3.1) | | 1 | | 1 |
| (1.1)+(2)+(2) | | | 1 | 1 |
| (≠1.1)(3.1)(≠3.1) | 1 | | | 1 |
| (≠1.1)(3.1)+(4.1) | | | 1 | 1 |

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| (1.1)+(3.1)+(3.1)+(3.1) | | 1 | | 1 |
| (1.1)+([3.1+3.1] as post verb of 4.2)(≠2) | 1 | | | 1 |
| ([1.1] as PNM of head of adv prep ph comp of 1.1) +(3.1)+(3.1) | | 1 | | 1 |
| (1.3)+(3.1) | 1 | | | 1 |
| (≠1.3)(3.1+3.1) | 1 | | | 1 |
| (1.1)+(≠[2]+[3.1])+(3.1)+(≠[2]+[2]) | 1 | | | 1 |
| (1.1)(≠2+3.1)+(≠2)+(2) | 1 | | | 1 |
| (2)+(1.1) | 1 | 1 | | 2 |
| (2)(≠1.1) | | | 1 | 1 |
| (2)+(2) | 1 | 1 | 1 | 3 |
| (2)+(3.1) | 3 | 1 | 1 | 5 |
| (2)+(≠3.1) | | | 1 | 1 |
| (≠2)+(3.1) | | 1 | | 1 |
| (2)+(≠3.1) | 1 | | | 1 |
| (≠2)(3.1) | 1 | | | 1 |
| (2)+(2+2) | 1 | | | 1 |
| (2+3.1)+(2+3.1) | | 1 | | 1 |
| (2+2+2)+(3.1) | | | 1 | 1 |
| (2)(≠3.1) | 1 | | | 1 |
| (≠2)(3.1) | 1 | | | 1 |
| (2)+(1.1)(3.1) | 1 | | | 1 |
| (2)(≠1.3)+(5) | 1 | | | 1 |
| (2)+(2)+(2) | | 1 | | 1 |
| (2)+(2)(≠2) | | | 1 | 1 |
| (2)+(2)(≠3.1) | 1 | | | 1 |

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| (2)+(3.1)+(2) | | | 1 | 1 |
| (2)+(3.1)+(3.1) | 1 | | | 1 |
| +(≠2+2)+(≠1.1)+(≠1.1) | | | 1 | 1 |
| (2)+(1.1)+(2)+(2) | | 1 | | 1 |
| (2 2)+(≠2 2+2)+(≠1.1)+(2) | | 1 | | 1 |
| (2)+(≠3.1)+(1.1)+(≠≠2)(1.1)+([4.1] as sub of 1.1)+(3.1) | 1 | | | 1 |
| (3.1)+(1.1) | | 2 | | 2 |
| (≠3.1)(1.1) | | 1 | | 1 |
| (3.1)(≠1.1) | 1 | | | 1 |
| (3.1)+(2) | 3 | 2 | 4 | 9 |
| (3.1)(≠2) | | 1 | | 1 |
| (3.1)+(3.1) | 4 | 5 | | 9 |
| (3.1)(≠3.1) | 1 | | | 1 |
| (3.1+2)+(1.1) | | 1 | | 1 |
| ([1.1] as obj of 3.1)+(1.1) | | 1 | | 1 |
| ([1.1] as obj of 3.1)(≠2) | 1 | | | 1 |
| ([2] as obj of 3.1)+(1.1) | | 1 | | 1 |
| ([2] as obj of 3.1)(≠1.1) | 1 | | | 1 |
| ([2] as obj of 3.1)+(3.1) | | | 1 | 1 |
| ([3.1] as obj of 3.1)+(2) | | | 1 | 1 |
| ([3.1] as obj of 3.1)(≠[3.1] as obj of 3.1) | | 1 | | 1 |
| (≠[2] as NP of PNM adv prep ph of 3.1)(3.1) | | 1 | | 1 |
| ([1.1] as obj of 3.1)+([ 1.1]+[2]+[2]+[2]+[1.1 ] as obj of 3.1) | | 1 | | 1 |
| (3.1)+(1.1)+(1.1) | | | 1 | 1 |

| Structure | First | Third | Fifth | Total |
|---|---|---|---|---|
| (3.1)+(2)+(2) | | | 1 | 1 |
| (3.1)+(3.1)+(1.1) | | | 1 | 1 |
| (3.1)+(3.1)+(2) | | 1 | | 1 |
| (3.1)(≠3.1)+(≠3.1) | | 1 | | 1 |
| (3.1)+(≠3.1)+(≠3.1) | 1 | | | 1 |
| (3.1)+(3.1)+(3.2) | 1 | | | 1 |
| (3.1)+(3.1)+([2] as obj of 3.1) | 1 | | | 1 |
| (3.1)+(3.1)+(≠[⟨1.1⟩ as PNM of 1.1] as obj of 3.1) | | 1 | | 1 |
| (3.1)([3.1] as sub of 1.1)+(2+3.1) | 1 | | | 1 |
| (3.1)(≠3.1)+(3.2)+(4.1) | 1 | | | 1 |
| (≠3.1+3.1)(2)(≠3.1)(1.1) | | 1 | | 1 |
| (3.1)(≠3.1)(≠2)+(≠1.3)(3.2) | | 1 | | 1 |
| (3.1)+(2)+(1.1)(≠3.1+3.1)(≠3.1) | | 1 | | 1 |
| (3.1)+(2+1.3)(≠3.1)+(3.1)+(2)+(2) | | 1 | | 1 |
| (3.1)(≠2+2)(≠2)+(2)+(2)+(2)+(2) | | 1 | | 1 |
| (3.1)+(≠2)+(≠2)+(3.1)+(≠3.1)+(2+3.1)+(2) | | | 1 | 1 |
| +(≠≠3.1)(3.1)+(1.1)+(≠≠2)(1.1)+([4.1] as sub of 1.1)+(3.1) | 1 | | | 1 |
| (3.1)+(≠3.1)+(≠2)+(3.1)+(≠2)+(2)+(3.1) | 1 | | | 1 |
| (3.1)(≠2)+([3.1] as obj of 3.1)+(2)+([3.1] as obj of 3.1)+(≠4.1)(≠2)+(3.1) | | 1 | | 1 |
| (4.1)+(3.1) | 1 | | | 1 |
| ([1.1] as NP of 4.1)+(2)+(≠2+3.1) | | 1 | | 1 |
| (4.2)+(3.1)+(3.2)+(3.1)(≠3.1) | 1 | | | 1 |

FOOTNOTES

[1]Differential meaning refers to the concept of assigning linguistic entities to separate classes on the basis of perception of difference in meaning without regard to the meanings themselves.

[2]This description refers to transformation theory prior to June 1964. The theory has changed radically since that time, but most of the studies applying transformation have used the pre-1964 version, as described in this thesis.

[3]Leo Engler and Elaine Hannah, 'Toward Norms for the Speech of Children,' Kansas State Research Project 1964-65. These investigators tape recorded the speech of first, third and fifth grade boys and girls in three public schools of Manhattan, Kansas. The tapes were transcribed in standard orthography without punctuation to provide the basic data for the study. This thesis is concerned with sections of manuscripts II A, II B, IV A, IV B, VI A, and VI B. These are manuscripts of the transcribed speech of boys at the first, third, and fifth grade levels in the Engler-Hannah data.

[4]A confused, tangled structure. An example from Loban (1963:14) is '...an' he, an' snowtime he had to have lot uh, wah-h when he, uh, not too many dogs, he...'.

[5]The term growth buds seems to equate with the term different structural patterns of the English language used in this thesis.

[6]Any structure, obligatory or optional to the type of verb filling the second verb slot will fit here.

[7]These take expansions 1, 4, 6, 8, and with certain restrictions, 10.

[8]These take expansions 1-9 and some, 10.

[9]These take expansions 1, 2, 4, 6, 8, and some 11.

[10]These take expansion 1 only.

[11]An example is found on IVB, page 5: 'some are eight/ (pause) some are nine.' The structural description is (1.1)(1.1).

[12]Filling a slot on the next higher level is called embedding. No clause may function as a slot filler of any level other than the one directly above it and those things on the same level included in one slot of such a higher level clause are coordinate structures.

[13]An example is found on page VI B 15: 'well it seems like/ that girl came home from school/ and saw her/ so her mother and father are workin'/ so she thought she should go home/ and do her homework/ or whatever it is/ and come back and help 'em/.' The structural description is ([2+3.1][≠2] [≠2][≠⟨2+[1.1⟩ as X after 3.1+2+3.1⟩ as obj of 3.1] as NP comp of 1.4).

[14]An example is found on page II A 3: 'well there was this boy/ and his mother told him to go get some beans and/ to go sell his calf/ his cow/ so he went.' The structural description is (1.1)+([3.1+3.1] as post-verb of 4.2)(≠2).

[15]An example is found on page IV B 2: 'the lady's sittin' there/ thinkin' about something.' Another is found on VI B 15: 'looks more like she's/ sittin' down on a porch/ thinkin' or staring off into outer space/.' The former is described as (2 2), the latter as (2 2+2).

[16]An example is found on page IV B 17: 'and Thursday I go outside/ and play/ with this little kid that always comes over/.' The description is (2+[2] as PNM of obj of 3.1).

[17]An example is found on page IV B 3: 'looks like he's talkin' to the lady/ and then smokin' the pipe/ 'n the lady's talkin' to the man/.' The structural description is ([2+3.1]+[2] as obj of 3.1).

[18]An example is found on page IV B 11: 'oh/ I think/ uh/ is he/ he's askin' her/ if she has anything to do/.' The description is ([⟨3.1⟩ as D.O. of 3.2] as obj of 3.1).

[19]An example is found on page VI B 14: 'oh/ well I think they're men that were/ working in the field 'n they worked/ pretty hard and they just/ lay down and took a nap/.' The structural description is ([⟨2⟩ as PNM of NP of 1.1]+[2]+[2+3.1] as obj of 3.1).

[20]An example is found on page IV B 10: 'oh/ I think/ uh she's she's/ uh thinkin' of money/ 'n/ thinkin' where she wants to go for her vacation/.' The description is ([3.1+⟨2⟩ as obj of 3.1] as obj of 3.1).

[21]An example is found on page VI B 10: 'well/ I don't have any/ brothers all I have is two little sisters 'n/ they just go outdoors and/ practice playing basketball/.' The description is (3.1)([3.1] as sub of 1.1)+(2+3.1).

[22]An example is found on page II A 12: 'I play harder than he does/.' The structural description is ([2] as comparative adverb of 2).

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# THE DEVELOPMENT OF THE LANGUAGE OF FIRST, THIRD, AND FIFTH GRADE BOYS IN THE AREAS OF MODIFICATION, VERB SLOT, COMPLEMENT SLOT, AND CONCATENATION

by

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This thesis is an attempt to describe structural patterns in the language of first, third, and fifth grade boys, concentrating on structures of modification, the verb slot, the complement slot, and concatenation, or processes of conjoining sentences.

Purpose: The first purpose was to test the following hypotheses: (1) control over different structural patterns of the English language is developed by concentration upon different patterns successively at different age levels; and (2) that complexity of language growth will be shown by a greater variety of these language patterns and that this complexity will occur with greatest frequency at the oldest (fifth) grade level. The second purpose was to develop a workable system for the description and analysis of concatenation (sentence conjoining) structure.

Procedure: A corpus of the speech of first, third, and fifth grade boys was subjected to a modification of the slot-filler analysis proposed by Engler. The structures thus identified were listed for each grade level group. Frequency counts were then made, and the results compared from grade to grade. For tracing the processes of conjoining sentences, here called concatenation, a procedure and formula were developed and employed. Results of this procedure were also listed for each grade level group, counted for frequency, and compared grade by grade.

Results: The following structural patterns showed a peak of frequency of occurrence in the first grade: modification, in both subject and object slots; verbal expansion type 10; the use of pronouns, positive (uninflected) adjectives, adverbs, and adjectivals in the complement slot; and sentence types 3 and 4. In the third grade the following patterns showed peaks: modification in the complement slot; verb types 1 and 7; verbal expansions

1, 3, 4, and 6; the use of nouns and adverbials in the complement slot; complex embedding of clauses in the object slot; and post nominal and adverbial prepositional phrases in the complement slot, sentence type 2, compound predicates, embedding in the complement slot, and embedding of clauses as the heads of prepositional phrases which functioned as post nominal modifiers. Some structures whose frequencies of occurrence showed a peak at a lower grade level were maintained at nearly the level of peak at the next grade level; and the usage of some structures decreased in the third from the first and increased again in the fifth.

Conclusions: The first hypothesis was supported. Control over different patterns of the language does seem to be developed at different age levels, and the patterns investigated were sometimes developed in different ways (with different kinds of slot fillers) at these different age levels. However, the second hypothesis was found to be invalid. The greatest variety of usage occurred in the third grade. If, indeed, the language of the fifth graders is more complex because of their increased experience, this complexity is shown by the specific patterns which they emphasize rather than the use of a variety of patterns. The system of analysis for concatenation structure derived in this thesis proved to be workable and capable of obtaining discriminating results.