

A TRANSFORMATIONAL ANALYSIS OF THE SYNTACTIC
STRUCTURES OF CHILDREN REPRESENTING THREE
VARYING ETHNO-LINGUISTIC COMMUNITIES
IN MANITOBA

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ABSTRACT

The major purpose of this study was to investigate the syntactic structures of children representing varying ethno-linguistic communities in Manitoba for relative linguistic maturity and for dialectical variations. The investigator was also interested in examining some of the variables which have been found by some researchers to influence language development, e.g., ethno-linguistic background, grade level, sex, and ability.

Written language samples, 4340 T-units produced by 144 grade four and six children from nine schools in three distinctly different ethno-linguistic communities, were segmented and analyzed to supply pertinent data for measurement according to accepted indices of language development, e.g., length of response, subordination ratio, mean clause length, frequency of sentence-combining transformations.

Examination of descriptive statistical trends and analysis of variance procedures were employed to investigate pertinent independent variables -- community, grade, sex, ability -- for possible linguistic trends.

Findings revealed the marked superiority of the

Monolingual subjects over the Bilingual-French subjects, and to a lesser extent over the Bilingual-German subjects, in the flexibility and control of written syntactic structures.

Grade six subjects demonstrated a significant superiority over grade four subjects and high ability levels excelled low ability levels in performance on all the major indices of language development. Findings related to the sex variable were inconclusive. The influence of ethno-linguistic background resided not so much in the nature of the primary language of the respective communities as in the cultural milieu within which such variables as the quantity and quality of adult communication in English could help to account for the differentials in linguistic maturity found among the communities of this study.

TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM AND DEFINITIONS OF TERMS USED	1
The Problem	1
Statement of the Problem	1
Significance of the Study	2
Procedures of the Study	7
Definitions of Terms Used	7
Limitations of the Study	9
Organization of the Thesis	11
II. REVIEW OF RELATED LITERATURE	12
Research Techniques Employed in	
Language Measurement	12
Research Related to Factors Which	
Influence Language Development	20
Sex, Intelligence, Age, and	
Socio-economic Status	20
Home Environment	23
Bilingualism	28
School Environment	31
Conclusion	32
III. DESIGN AND PROCEDURES OF THE STUDY	34
Description of the Sample	34
Collection of Language Samples	42

CHAPTER	PAGE
Analysis of the Language Samples	44
Theory Underlying Transformational Analysis	44
Segmentation of the Language Samples .	48
Grammatical Analysis of the Language Samples	49
Statistical Treatment of the Data	56
IV. ANALYSIS OF THE DATA	58
Major Linguistic Indices	59
Number of T-units	59
Mean Length of T-units	63
Number of Subordinate Clauses	67
Mean Clause Length	72
Number of Sentence-combining Transformations	73
Number of T-units Beginning with Co-ordinate Conjunctions	78
Number of Mazes	83
Syntactic Structures	85
Subject-Verb Pattern	85
Subject-Verb-Object Pattern	87
Subject-Verb-Adjective Complement Pattern	88

CHAPTER

PAGE

Subject-Verb-Indirect Object-Direct Object Pattern	90
There-Verb-Subject Pattern	91
Subject-Verb-Complement Pattern	93
Number of Sentence-combining Transformations	94
Nominal Transformations	98
Headed Nominals	101
Noun + Possessive	101
Noun + Adjective	102
Noun + Relative Clause	103
Noun + Prepositional Phrase	104
Non-headed Nominals	105
Noun Clauses	105
Infinitive Phrase	106
Infinitive Phrase + Subject	108
Noun Clause - Direct Discourse	109
Functions of Nominals	111
Object Function	111
Subject Function	112
Object of Preposition Function	113
Adverbial Sentence-combining Transformations	114
Adverb Clauses	120
Adverb Clause of Time	122
Adverbial Phrase Transformations	123

CHAPTER	PAGE
Co-ordinate Sentence-combining	
Transformations	125
Co-ordinate Nominals	131
Co-ordinate Predicates	132
Dialectical Variations	135
Error Analysis	135
V-Form Error	139
V-Discourse Error	140
Unidiomatic Expressions	141
Clausal Patterns	142
V. FINDINGS AND CONCLUSIONS	143
Findings	144
Number of T-units	144
Mean Clause Length	145
Number of Subordinate Clauses	145
Number of Sentence-combining	
Transformations	146
Number of Nominal Sentence-combining	
Transformations	146
Sub-classifications of Nominal	
Transformations	147
Number of Adverbial Sentence-combining	
Transformations	149
Sub-classifications of Adverbial	
Transformations	149

CHAPTER	PAGE
Number of Co-ordinate Sentence-	
combining Transformations	150
Sub-classifications of Co-ordinate Transformations	150
Number of T-units initiated by	
Co-ordinating Conjunctions	151
Number of Mazes	152
Diversity of Syntactic Structures	152
Dialectical Variations	153
Error Analysis	153
Unidiomatic Expressions	153
Clausal Patterns	154
Conclusions	156
Differences among Ethno-linguistic Communities	157
Differences in Language Development between Monolinguals and Bilinguals	161
Factors Which Influence Language	
Development	163
Ethno-linguistic Background	163
Grade Level	165
Sex	165
Intelligence	165
Implications for Further Research	166
Implications for the Curriculum	168

CHAPTER	PAGE
BIBLIOGRAPHY	171
APPENDICES	179
Appendix A	180
Appendix B	193
Appendix C	196

LIST OF TABLES

TABLE		PAGE
3:01	Distribution of Subjects in Sub-samples by Grade and Sex	36
3:02	Age Ranges in Years of Subjects in Sub- sample by Grade and Sex	36
3:03	Means and Standard Deviations of Age Levels in Years by Sub-samples, Grade, and Sex	37
3:04	Descriptive Data For Deviation I.Q. Scores among Sub-samples, Grades, and Sexes	39
3:05	Distribution of Pintner Deviation I.Q. Scores among Sub-sample	41
4:01	Descriptive Data for Number of T-units . . .	60
4:02	Analysis of Variance for Number of T-units	61
4:03	Descriptive Data for Number of T-units Written by Low, Middle, and High Ability Levels within Sub-samples	62
4:04	Analysis of Variance for Number of T-units among Ability Levels	63
4:05	Descriptive Data for Mean Length of T-units	64
4:06	Analysis of Variance for Mean Length of T-units	65
4:07	Descriptive Data for Mean T-unit Length for Low, Middle, and High Ability Levels within Sub-samples	66
4:08	Analysis of Variance for Mean Length of T-units across Ability Levels among Sub-samples	67
4:09	Descriptive Data for Number of Subordinate Clauses	68

TABLE	PAGE
4:10 Analysis of Variance for Number of Subordinate Clauses	69
4:11 Descriptive Data for Number of Subordinate Clauses across Ability Levels among Sub-samples	70
4:12 Analysis of Variance for Number of Subordinate Clauses among Ability Levels	71
4:13 Descriptive Data for Subordinate Clause Ratio across Sample and among Sub-samples	72
4:14 Descriptive Data for Mean Clause Length across Sample and among Sub-samples	73
4:15 Descriptive Data for Number of Sentence-combining Transformations	74
4:16 Analysis of Variance for Number of Sentence-combining transformations	75
4:17 Descriptive Data for Number of Sentence-combining Transformations among Ability Levels	76
4:18 Analysis of Variance for Number of Sentence-combining Transformations among Ability Levels	77
4:19 Descriptive Data for Number of Sentence-combining Transformations per T-unit across Sample and among Sub-samples	78
4:20 Descriptive Data for T-units Beginning with Co-ordinating Conjunctions	79
4:21 Analysis of Variance for T-units Beginning with Co-ordinating Conjunctions	80
4:22 Descriptive Data for Number of T-units Beginning with Co-ordinating Conjunctions across and among Ability Levels	81

TABLE	PAGE
4:23 Analysis of Variance for T-units Beginning with Co-ordinating Conjunctions among ability Levels	82
4:24 Descriptive Data for Number of T-units Beginning with Co-ordinating Conjunctions, per T-unit, across and among Sub-samples	82
4:25 Summary Table of Means and Ratios across the Sample and among Sub-samples for Major Linguistic Indices	84
4:26 Mean Frequencies of Main-clause Patterns across Sample and among Sub-samples . . .	85
4:27 Analysis of Variance for Subject-Verb Main-clause Pattern	86
4:28 Analysis of Variance for SV Main-clause Pattern among Ability Levels	86
4:29 Analysis of Variance for Subject-Verb- Object Pattern	87
4:30 Analysis of Variance for SVO Main-clause Pattern among Ability Levels	88
4:31 Analysis of Variance for Subject-Verb- Adjective Complement Main-clause Pattern	89
4:32 Analysis of Variance for SVCa Main-clause Pattern among Ability Levels	89
4:33 Analysis of Variance for Subject-Idirect Object-Object Main-clause Pattern	90
4:34 Analysis of Variance for SVIO Main-clause Pattern among Ability Levels	91
4:35 Analysis of Variance for There-Verb- Subject Main-clause Pattern	91

TABLE	PAGE
4:36 Analysis of Variance for There VS Main-clause Pattern among Ability Levels	92
4:37 Analysis of Variance for Subject-Verb- Complement Main-clause Pattern	93
4:38 Analysis of Variance for SVCn Pattern among Ability Levels	94
4:39 Summary of Descriptive Data for Nominal Transformations and Their Functions in Rank Order of Occurrence	96
4:40 Descriptive Data for Number of Nominal Sentence-combining Transformations	98
4:41 Analysis of Variance for Nominal Transformations	99
4:42 Analysis of Variance for Nominal Transformations among Ability Levels	100
4:43 Analysis of Variance for N+Poss Transformations	101
4:44 Analysis of Variance for N+Adj Transformations	102
4:45 Analysis of Variance for N+Rel Clause Transformations	103
4:46 Analysis of Variance for N+PP Transformations	104
4:47 Analysis of Variance for Noun Clause Transformations	105
4:48 Analysis of Variance for N.C. Trans- formations among Ability Levels	106
4:49 Analysis of Variance for Inf.P. Trans- formations	107
4:50 Analysis of Variance for I.P.+S Trans- formations	108

TABLE	PAGE
4:51 Analysis of Variance for N.C.D.D. Transformations	109
4:52 Analysis of Variance for N.C.D.D. Transformations among Ability Levels . .	110
4:53 Analysis of Variance for Object Function .	111
4:54 Analysis of Variance for Subject Function	112
4:55 Analysis of Variance for Object of Preposition	113
4:56 Summary of Descriptive Data for Adverbial Transformations listed in Rank Order for Sub-classifications .	115
4:57 Descriptive Data for Number of Adverbial Transformations	117
4:58 Analysis of Variance for Number of Adverbial Transformations	118
4:59 Analysis of Variance for Adverbial Transformations among Ability Levels . .	119
5:60 Analysis of Variance for Number of Adverb Clauses	120
5:61 Analysis of Variance for Adverb Clauses among Ability Levels	121
5:62 Analysis of Variance for Adverb Clause of Time	122
5:63 Analysis of Variance for Adverb Clause of Time among Ability Levels	123
4:64 Analysis of Variance for Adverbial Phrases	124
4:65 Analysis of Variance for Adverbial Phrases among Ability Levels	124
4:66 Summary of Descriptive Data for Co-ordinate Transformations listed in Rank Order for Sub-classifications .	126

TABLE	PAGE
4:67 Descriptive Data for Number of Co-ordinate Transformations	128
4:68 Analysis of Variance for Number of Co-ordinate Transformations	129
4:69 Analysis of Variance for Co-ordinate Transformations among Ability Levels . . .	130
4:70 Analysis of Variance for Number of Co-ordinate Nominal Transformations . . .	131
4:71 Analysis of Variance for Number of Co-ordinate Predicates	132
4:72 Analysis of Variance for Number of Co-ordinate Predicate VO Patterns	133
4:73 Analysis of Variance for Number of Co-ordinate Predicate V Patterns	134
4:74 Summary of Errors Occurring across Total Sample and among Sub-samples . . .	136
4:75 Summary of Descriptive Data for Error Analysis Listed in Rank Order of Occurrence	138
4:76 Analysis of Variance for Number of V-Form Errors	139
4:77 Analysis of Variance for Number of V-Discourse Errors	140
5:01 Summary Table of Significant Findings . . .	155

CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

I. THE PROBLEM

Statement of the problem. The purpose of this study was to investigate the written syntactic structures of fourth and sixth grade children representing various ethnic backgrounds. An attempt was made to compare the subjects' linguistic competence, their syntactic patterns, and their dialectic deviations from standard English usage. A further purpose was to explore some of the variables that are related to language development.

More specifically, the study was designed to answer the following questions:

1. To what extent do children of varying ethnic backgrounds exhibit differences in:
 - a) length of minimal terminable units (T-units)
 - b) number of language mazes
 - c) number of T-units introduced by co-ordinating conjunctions
 - d) subordinate clause ratio
 - e) mean clause length
 - f) number of sentence-combining transformations per T-unit
 - g) diversity of syntactic structures

2. Is linguistic maturity a function of the subject's:

- a) ethnic-linguistic background
- b) grade level
- c) sex
- d) intelligence

3. To what extent do children of varying ethnic backgrounds exhibit dialectical patterns in writing which deviate from standard English usage, and what are some of the specific deviations?

Significance of the study. With recent trends in Education emphasizing the importance of individualized instruction (Goodlad and Anderson, 1963), the diagnosing of individual differences in learners and the characteristic differences and similarities of homogeneous groups of learners becomes essential to effective instruction. If today's children are no longer forced to fit into the Procrustean bed of uniformity, then a more realistic and more challenging standard has to take its place. The more a teacher knows about the performance and competence of the student, the better she can adapt the curriculum to create the optimum learning situation.

It becomes especially urgent for teachers of language to be aware of the varying language patterns that may be

peculiar to various segments of society. In the cultural mosaic of Manitoban society many ethnic groups still maintain their distinct identity both culturally and regionally. Often this means that the primacy of their non-English language is perpetuated. In such a bilingual context, where two cultures and two languages are in contact, the acculturation and cultural diffusion which occurs will affect the norms and structures of either language system (Weinreich, 1953). The extent to which these influences are dependent on whether the languages remain "distinct" or "merge" (Osgood, 1954), is of particular interest to linguists. In any case, the effect of bilingualism on language development holds important implications for the teaching of English in bilingual communities.

Other cultural and environmental factors influence language development. Strickland (1967) reflects the consensus of language researchers and linguists in her statement:

The child learns his language from the people closest to him in settings of informal intimacy. Therefore, what he brings to school is the language of his immediate environment without polish or pretense. The economic and cultural level of his home shines clearly in it, whether his is the language of the college teacher of English, the independent and aspiring small business man, the demanding skilled craftsman, or the unemployed and willingly dependent drifter on the relief dole. To the student of dialects,

the geographic location in which his parents acquired their language is clearly evident.

Sapir's (1921) and Bloomfield's (1933) classic works on language gave a decided impetus to the science of descriptive linguistics. This new emphasis has motivated linguists and teachers to concentrate on a description of language as it is spoken and written and not so much on a prescription of how it should be used. They have concerned themselves more with the structures of language and how these structures are constituted and organized by the native speaker (e.g., Fries, 1952; Roberts, 1954; Gleason, 1955; Hockett, 1958). The more recent descriptions of language reflect the new and pervasive influence of the transformational generative theory of Chomsky (1957). Basic to his new theory is a scientific method by which he tried to discover and describe the rules that generate all the grammatical sentences of a language, and on a second level, the transformational rules that govern the arrangement and rearrangement of kernel sentences by such processes as adjunction, substitution, deletion, and permutation. Much has been written about this new scientific grammar. Emmon Bach's textbook (1964) is a definitive explanation of the scientific principles that underlie the science of generative grammar. Pedagogical grammars of English based on the new science have been written and have provided the basis for much recent language research in English (e.g., Lees, 1960; Roberts, 1964; Thomas, 1965; Hathaway, 1967).

As a result of these new trends many investigations of syntactic structures of children's language have been carried out. Especially significant to this study are those done with American samples in the past decade (e.g., Menyuk, 1961; Strickland, 1962; Hunt, 1965; O'Donnell, Griffin and Norris, 1967). The new techniques, based on the structural and generative grammars, have provided effective tools for analyzing language patterns and linguistic competence.

Studies which present empirical data about the characteristics of both oral and written language should hold important implications for curriculum construction. Further information regarding specific language characteristics of children of varying backgrounds should provide information relevant to effective classroom instruction. John B. Carroll (1960) summarizes the implications of such research for Language Arts instruction:

By the time he arrives at school age, the normal child has already learned to speak with whatever sound system, grammar, and vocabulary is characteristic of the kind of language he has heard most frequently at home or in his neighbourhood. His teachers must ponder the extent to which they can simply build upon his previously acquired capabilities and the extent to which they can attempt to alter a system of habits which are not only highly practised, but which also probably serve a supportive role in the child's adjustment to his non-school environment Language Arts teaching in these grades is not merely a process of teaching new habits and skills, but often a process of changing habits.

It need not be the purpose of educators to impose a "correct" standard of English usage on everybody. However, it is essential that children who demonstrate variations from the standard dialect should be given the opportunity to revise their idiosyncratic syntactic structures to conform to the standard required for social and economic success.

The research cited points to the need for educators to know more about the language of the groups they teach. This would seem particularly significant for groups with language patterns markedly different from the patterns exhibited by the average monolingual middle-class North American group, if the educator hopes to utilize fully the transfer potential in the language skills. In Manitoba, where a number of non-English-oriented ethnic groups exist, studies of this kind should have particular relevance. It is to be noted, however, that this study is not suggesting that significant findings about "ethnic language patterns" should be used to expedite the process of "melting-in" or modifying of the cultural mosaic of the society. This study is not designed to examine language deficit as a result of bilingual or monolingual background. The scope for exploration lies more in linguistic similarity and difference than on deficit as measured against a presupposed standard.

Procedures of the study. A random sample of twenty-four fourth grade and twenty-four sixth grade subjects was drawn from each of three distinctly different ethnic communities in Manitoba. Great care was taken to select communities which were parallel especially on the basis of linguistic-ethnic background and relative proximity to a large metropolis. The schools were matched in size.

The language samples were obtained in a semi-structured situation. The subjects viewed a short movie and a short filmstrip. They were asked to respond in writing to each film in turn.

The Pintner General Ability Test (Verbal Series) was used to measure the intelligence of the subjects.

The language samples were segmented according to Hunt's T-unit. They were further analyzed for diversity of syntactic structure and according to the number and kind of sentence-combining transformations occurring. Length of T-units, number of language mazes, subordinate clause ratio, and mean clause length were additional indices used to measure linguistic maturity.

II. DEFINITIONS OF TERMS USED

Bilingual. Subjects who said they could both understand and speak a second language other than English were classified as bilingual.

Ethnic community or sub-sample. In this study, a community or sub-sample is referred to as ethnic on the basis of a cultural and regional cohesiveness. The cultural background was defined largely in terms of the linguistic and religious concomitants, e.g., monolingual Anglo-saxon, Protestant; bilingual, German, Mennonite; bilingual, French-Canadian, Roman Catholic. However, the religious concomitant was not a variable selected for specific examination.

Linguistic competence. This study was not concerned with psycholinguistic implications of linguistic competence. It merely refers here to the level of performance in written expression.

Maze. The maze was used in the same context as that of Loban (1963) and Hunt (1965). It consists of false starts, repetitions, or garbles which cannot be classified semantically or syntactically.

Mean clause length. This measure was determined by dividing the total number of words by the number of clauses.

Sentence-combining transformations. This term refers in this study specifically to transformations occurring within T-units. It refers to the process of combining kernel sentences to form new sentences (non-kernel or derived). A more detailed explanation of this process follows in chapter three.

Subordinate clause ratio. This is Hunt's simplified method of calculating the traditional subordination ratio. It entails the calculation of the ratio of main clauses to the sum of all of the clauses.

Sub-sample. Each of the three communities in this study is a sub-sample.

Standard English usage. "Standard English" for purposes of this study was taken to be the dialect of the educated North American middle class, as it is described in the prescribed texts of Manitoba schools.

T-unit. The T-unit in this study is the same as the one devised by Hunt (1965). The minimal terminable unit (T-unit) consists of "one main clause expanded at any of many different points by structures that are modifiers or complements or substitutes for words in the main clause."

III. LIMITATIONS OF THE STUDY

This study confined itself to an examination of the written syntactic structures and their constituents. The evocative techniques employed, produced language samples which did not entirely coincide with the free speech of children. Although no time limit was imposed on the children's written response, the stimulus for writing was semi-structured and elicited mainly narrative and descriptive responses. The structure of oral speech

was not examined, nor was any attempt made to judge criteria of linguistic maturity other than grammatical (syntactic) ability.

The technique of transformational grammatical analysis provided an objective measurement for the comparison of the children's ability to handle grammatical elements. Not all the possible transformations were analyzed. The subjects' ability to use sentence-combining transformations was considered the most significant index of linguistic maturity.

Basic to this study were the assumptions that linguistic maturity could be gauged by the subjects' ability to write longer T-units, and hence more and longer clauses, that the increased incidence of sentence-combining transformations occurring through processes of subordination, insertion, and deletion indicated increasing linguistic maturity, and that generally, adult linguistic performance, which is characterized by the achievement of these criteria, is a standard of maturity in written expression.

It was not the purpose of this study to isolate such factors as bilingualism and socioeconomic status in order to show definitively their influence on language development. Therefore, no objective scale or test was administered to delineate these variables. The ethnic communities chosen were generally homogeneous with respect to these two variables.

VI. ORGANIZATION OF THE THESIS

Chapter II. Review of the related literature

Chapter III. Information about the sample --
selection and description; experimental procedures;
evaluative instruments

Chapter IV. Presentation of data and statistical
analysis

Chapter V. Findings and conclusions

Bibliography

Appendix

CHAPTER II

REVIEW OF RELATED LITERATURE

Research Techniques Employed in Language Measurement

The 1930's saw a spate of studies concerned with the measurement of language development. They gave birth to a technique of linguistic analysis which became standard procedure for most studies attempting to determine language maturity until the beginning of the sixties. If the research tools developed in the last decade are more precise and more adequate, they still owe much to the important contributions made by such pioneers as Bear (1939), Davis (1937), Fisher (1934), LaBrant (1934), and Smith (1926).

McCarthy (1954) and Carroll (1960) have made detailed reviews of all the significant studies done up to 1957. It is therefore not necessary to repeat such a review here, except to state briefly what, in fact, the accepted standard procedure of language analysis has been for the last thirty years. McCarthy, in summarizing these studies, concluded that "mean sentence length is the measure of language maturity which is most reliable, easily determined, objective, quantitative, and easily understood." The other two indices which were widely accepted were subordination ratio, and the number of subordinate clauses in each of the conventional three categories.

The new techniques developed by Strickland (1962), Loban (1963), and Hunt (1965), constituted a major breakthrough in the search for more accurate indices of language development.

Strickland studied the oral language of 575 children in grades six to eight and compared their sentence structure with that of their textbooks. Though she used the basic procedures of earlier studies (length of units, frequency counts, etc.) she devised a new method of segmenting oral language. Her phonological unit, a unit of speech ending with a distinct falling intonation which signaled a terminal point, replaced the artificially divided sentence of earlier studies. This constituted the first attempt to overcome the problem of arbitrarily dividing streams of speech into "sentences." In further segmenting phonological units of speech, Strickland introduced the concept of "slots and movables." These techniques enabled her to analyze the way in which children manipulate syntactical patterns. Sentences were analyzed "on a second level to determine the types of satellites or subordination elements which served as fillers for slots and movables." The maze, a concept borrowed from Loban's research, referred to "any part of a phonological unit which was not syntactically or meaningfully pertinent." The relative frequency of mazes

in oral language appeared to be related to language maturity.

In 1952, Loban initiated a longitudinal study which was to follow up and analyze the language development of children as they progressed from kindergarten to grade twelve. The first report, on the first six years of elementary school, is concerned with children's use and control of language, with children's effectiveness in communication, and with relationships among children's oral, written, listening, and reading uses of language. Like Strickland, he was also concerned with developing "fundamental methods of analysis to aid the scientific study of children's language." He followed traditional procedures in determining amount of subordination; classification of conventional usage, syntax, and grammar; and classification of vocabulary according to frequency of use, and according to diversity.

The new methods of analysis which he introduced closely paralleled those of Strickland; this is understandable since they were in collaboration during the course of their studies. The subjects' oral language was segmented according to the phonological unit, the communication unit (grammatically independent clause with any of its modifiers), and the maze. On a second level of analysis he was interested in more than just "a skeleton picture of communication units" and went on

to an examination of the component parts of the patterns displayed at the first level. This necessitated the development of another tool of analysis -- the classification of the subjects' speech in terms of function. He isolated seven categories closely related to the actual situation from which the subjects' language was recorded (e.g., facts and unelaborated perceptions, interpretations, personal associations, generalizations). Loban further classified oral language according to style. Trained speech analysts determined whether each item was fluent, average, or halting -- a three-type classification for each category of fluency, deliberateness, hesitancy, loquaciousness, and so forth.

Kellogg Hunt (1965), in his study of written grammatical structures at the fourth, eighth and twelfth grade levels, stated explicitly in his introduction that he proposed to provide a "method of procedure for the quantitative study of grammatical structures . . ." In his attempt to overcome the inadequacy of the "standard procedure" he developed a new index of language maturity. His T-unit (minimal terminable unit) includes one main clause plus all the subordinate clauses attached to or embedded within it. This new method enables the researcher to segment language systematically and consistently. In this the T-unit resembles the phonological unit of

Strickland, and even more the communication unit of Loban. It also helped him to replace the "subordination ratio" devised by LaBrant with his "subordinate clause index." This ratio is a measure of the number of clauses, both main and subordinate, in each T-unit. The number will never be less than one and however much the number exceeds one will indicate the average number of subordinate clauses in that T-unit.

The "main clause co-ordination index" was another useful new index derived through the T-unit. This ratio is the number of T-units per sentence. It is the total number of T-units divided by the total number of sentences. The number will never be less than one and the amount by which the number exceeds one indicates the average number of other T-units added to that first one.

Using these new techniques, Hunt found that T-unit length is tied closely to linguistic maturity. An average student in grade twelve writes T-units nearly sixty per cent longer than those he wrote eight years earlier. Superior adults differ from twelfth graders primarily in the length of their clauses.

These findings set up a continuum of language development which if substantiated by further research will supply a method of research which is accurate and

and effective as well as easy to compute.

Of the many researchers who have already employed Hunt's techniques of language research, only Biesbrock and Veal (1969) have expressed some reservations about the reliability of mean T-unit length as an index of quality in composition. In their study of compositions written by grade two and three pupils they found that mean length of T-units did not correlate highly (.48) with global essay quality.

In an address to the National Conference on Research in English in 1966, Hunt reiterated his faith in his measures of syntactic development by referring to a recent study done by O'Donnell, Griffin and Norris (1967) which confirmed his own earlier findings:

Putting their figures and mine together, we see that the trend is clear. From the first public school grade to the last the number of subordinate clauses increase steadily for every grade . . . at every grade level there is an increase in the clause length of their speech.

In analyzing the speech and writing samples obtained from ninety children (thirty in each of grades three, five, and seven) O'Donnell tried to discover (1) whether there were measureable differences between their oral and written grammatical structures, (2) how these grammatical structures differed in respect to grade level and (3) how these grammatical structures differed in respect to the sex of the subjects. Their findings as to grade level did

corroborate Hunt's conclusions. It is interesting to note that they employed the T-unit as the syntactic unit for analysis of both oral and written samples of language.

After segmenting the language samples into T-units, the techniques of transformational grammar were applied for further analysis. All sentence-combining transformations were classified as transformations producing nominal, adverbial, or co-ordinate constructions.

O'Donnell, Griffin and Norris (1967) discovered that the average number of sentence-combining transformations per T-unit increased significantly with advance in grade level. Analysis of subtypes of constructions also indicated that deletion transformations contributed substantially to structural complexity of syntactic units.

Although Loban mentioned the transformational technique, he found it too time-consuming to apply to more than two subjects in his 1963 study; however, he did suggest that it held a great deal of promise. O'Donnell gives credit to Menyuk (1961), Slobin (1963), and Hunt (1965) for using the transformational approach prior to his own study, but he was the first to apply this new technique extensively and has thus led the way to a new and effective method of research based on Chomsky's generative grammar.

Bateman and Zidonis (1966) have recently employed a similar technique of transformational grammar in

studying the effect of a study of transformational grammar on the writing of ninth and tenth graders. Fifty grade nine students were divided into a control group and experimental group. Over a period of two years in grade nine and ten, the experimental group studied materials especially adapted from the area of generative grammar. Written samples were collected from both sections during the first three months of the first year and the last three months of the second year. These samples were then analyzed according to the forty-six stated transformational rules which served to identify the grammatical operations that each sentence in the sample reflected. These rules included four basic types: Embedding, Conjoining, Deleting, and Simple. Embedding transformations were further organized according to their specific functions: noun expansion, adjective expansion, verb expansion, adverbial replacement, and adverbial expansion. In evaluating the sentences, three component scores were employed: (1) structural complexity score (the number of grammatical operations that have taken place in a particular sentence) (2) proportion of well-formed sentences (intuitively acceptable and derivable from the rules of the grammar) and (3) error change score (five classes of errors, or grammatical misoperations).

The study is important because it was the first to make a distinction between well-formed and malformed sentences, and because it contributed another new technique to the field of linguistic analysis.

Many recent studies have employed the new techniques of transformational analysis (e.g., Davis, 1967; Gale, 1968; Fry, 1968; Thomas, 1968; and Kean, 1969).

Research Related to Factors Which Influence Language Development

Sex, Intelligence, Age, and Socio-economic Status.

Findings of recent investigations support the claim that environmental forces are potent factors in the development of language. Although they generally confirm that such characteristics as intelligence and chronological age are significant factors, there is some disagreement as to the effect of sex differences.

Templin's study (1957) did not substantiate the widely accepted assertion that girls were more precocious than boys in their language development. When the performance of boys and girls was compared over the entire age range, girls tended to receive higher scores more frequently than boys, but the differences were not statistically significant. O'Donnell's recent study confirms this. However, age trends were clearly evident in the substantial increments which occurred with increasing age level in

length of verbalization, complexity and correctness of grammatical structures, and in the growth of vocabulary. Substantial correlations were found between vocabulary measures and I.Q. at ages six to eight, though correlations were lower for articulatory ability, sound discrimination, length of remark, and number of different words in speech samples. These results confirmed earlier findings by Schneiderman (1955). Consistent differences between the performance of the upper socio-economic group and the lower socio-economic group were found throughout the study.

Loban (1963), making use of Warden's research, found a close relationship between language ability and intelligence. With an increase in chronological age there was a decrease in the incidence of mazes and the number of words in them but an increase in the number and length of communication units and in the amount of subordination. Increasing use of subordinating connectors occurred with increase in chronological age, mental ability, and socio-economic status. Boys in a low intelligence group were more limited than girls in the same group in their repertoire of syntax, but boys in a high intelligence group tended to perform better than the girls in the same group. Only low positive relation appeared between health and language proficiency.

Using Loban's procedures, Eldredge (1967) compared the language patterns of 82 third-grade boys and girls in oral and written composition. Results suggested that sex, age, I.Q. and socio-economic status were related to proficiency in oral and written language.

Ryckman (1967), in a study examining the relation between social class and cognitive abilities in fifty middle class and fifty Negro kindergarten boys, found that general language ability correlated higher ($r = .587$) than any other component with social class.

Another recent study by Hancock (1967) determined the extent to which sixth graders used various classifications of correct and incorrect word forms and the correlation of this usage with sex, intelligence, and socio-economic status. He found all of these factors to be significantly related to high scores in verb use.

Language samples of thirty young children, recorded by Welch (1967), at the beginning and end of a four-year interval were analyzed. The results indicated that basic language patterns were well established by the start of school. Certain aspects of language appeared to be a function of increasing age: reduced use of short utterances, flexibility in handling slots and movables, increased use of compound sentences, increased use of non-structured elements in oral language, and an increased ability to expand and elaborate. An earlier study by Strickland (1962)

showed significant differences between top and bottom quartiles in the use of both movables and subordinate elements in variables such as intelligence, mental age, occupational status, and parental education.

Hunt (1965) showed convincingly that T-unit length and the subordinate clause index increased with mental and chronological maturity, and were also highly related to I.Q.

Home Environment. Recently Strickland (1967) affirmed the importance of the home environment in influencing the language development of children:

The child learns his language from the people closest to him and in settings of informal intimacy. Therefore, what he brings to school is the language of his immediate environment without polish or pretense. The economic and cultural level of his home shines clearly in it . . .

Frank May (1967), who has made an extensive review of the effect of environment on oral language development, concludes that:

Research lends support to the general observation that the home and school are environmental forces of vital importance in the development of oral language. In the home such factors as the extent of adult contacts, the degree and kinds of pressures from parents, and the cultural mores related to socio-economic position seem to influence the level of oral language maturity which children attain. In school the oral language proficiency of children appears to be enhanced by instructional programs which offer specific practice in articulation, voice control, usage, and other elements of oral expression.

Numerous studies support these claims.

Studies concerned with conventional versus institutionalized parenthood (Brodbeck and Irwin, 1946; Goldfarb, 1943, Moore, 1947; as well as those summarized by McCarthy, 1954) showed that the "meagre quantity and quality of adult contacts provided for children in many orphanages lead to deficiencies in vocabulary, articulation, and fluency."

In her study of 108 kindergarten, first, and second grade children, Higgenbotham (1961) found that children without siblings were more proficient in oral language than children with siblings. Davis (1937) found a linguistic superiority in only-children, and in children with siblings, over that of twins. That triplets have been shown to be inferior to twins in oral language development seems to indicate that oral language proficiency increases directly with the quantity of communication with adults. Although this generalization is not supported by the findings of Smith (1935) and Wellman (1931), further research done by both Aserlind (1963) and Milner (1951) tends to justify the statement.

The quality as well as the quantity of adult contacts is a major factor in oral language development. Becky (1941), Wood (1946), Duncan (1949), Moncur (1951), FitzSimmons (1958), and Kinstler (1961) conducted studies which showed that

stuttering, retardation, and articulatory defects, when not physiologically caused, were related to a mentally unhealthy home environment.

Both Riesman (1962) and Deutsch (1960) claimed that cultural deprivation created deficiencies in oral language development. Cultural deprivation is more likely to occur among families of low socio-economic status. Many more studies than those already quoted here (Templin, 1957; Bernstein, 1960; Thomas, 1962; Barnes, 1962; Loban, 1963; Eldredge, 1967; Ryckman, 1967; and Hancock, 1967) have demonstrated that socio-economic status is closely related to language development.

Cazden, in a review of the subcultural differences in child language, conceded that "children who were socially disadvantaged on such objective criteria as income and educational level of parents tended to be deficient on many measures of verbal skills." But he added the caution that subcultural relativity needed to be taken into account by researchers and that the whole question of "culturally deprived" and "culturally different" must be viewed in an objective perspective in order to avoid distortion especially in assessing the language of children who speak a non-standard dialect.

It is understandable that low status children make more errors than high status children. "Standard" usage

generally refers to the dialect of high status people. Since children tend to imitate the speech of the adults they associate with, they will tend to perpetuate their usage errors (Noell 1953).

Findings by Deutsch (1964) showed that both lower class and minority group status were associated with poorer language functioning. Thomas (1962) confirmed this in his study of Negro and white children living in similar economically depressed urban areas. He found deficiencies in the amount, maturity, and quality of oral expression in both groups but the Negro children were "somewhat more deficient than the white children."

Bernstein (1961) theorizes that social class has a direct bearing on the kind and extent of a child's language development. He suggests that members of the lower working class are "restricted to a public language . . . which is a form of relatively condensed speech in which certain meanings are restricted and the possibility of their elaboration is reduced." The middle class child is socialized within a formally articulated structure which requires verbalization rather than expression of feeling and a modification of behaviour according to an explicit set of goals and values. Thus, in addition to a "public language" the middle class child needs a "formal language" which facilitates the verbal elaboration

of "subjective intent, sensitivity to the implication of separateness and difference, and points to the possibilities inherent in a complex conceptual hierarchy for the organization of experience."

On the basis of Bernstein's assumptions concerning language and social class, Hess and Shipman (1965) produced evidence to support the assertion that:

. . . the structure of the social system and the structure of the family shape communication and language and that language shapes thought and cognitive styles of problem-solving. In the deprived-family context this means that the nature of the control system which relates parent to child restricts the number and kind of alternatives for action and thought that are opened to the child; such constriction precludes a tendency for the child to reflect, to consider and choose among alternatives for speech and action. It develops modes for dealing with stimuli and with problems which are impulsive rather than reflective, which deal with the immediate rather than the future, and which are disconnected rather than sequential.

A recent investigation of the relationship between the degree of syntactical language development and socio-economic status of beginning first-grade children was carried out by Ruddell and Graves (1968). They compared the performance of high socio-economic, high language ability children with low socio-economic, low language ability children on language tests which included items based on language patterns familiar to both groups and items unfamiliar and little used by children at kindergarten and first-grade level. They reported a significant

difference in the mean error rate between the high and the low groups on all test items combined, and on those items familiar to both groups. The fact that the groups moved closer together in performance on items that were unfamiliar to all subjects led them to infer that at least part of the reason for the superiority of the high group on the test as a whole was that they had more preschool practice in standard English usage with familiar language patterns and that the high group had been exposed more frequently to standard English in the language models presented by their families and other adults.

That the oral language patterns learned at home are deeply entrenched by the time the child enters first grade is a common assertion made by most structural linguists today and has been suggested by the findings of Strickland (1962), Templin (1957), and Noell (1953).

It might be inferred from this that the child's exposure to either one or more than one language in the home environment would have differential effects on his language development.

Bilingualism. Carrow (1957) compared the English language ability and achievement of a group of monolingual children and a group of bilingual children who were similar

in regard to age, socio-economic status, and intelligence. The monolinguals demonstrated superiority in oral reading accuracy and comprehension, hearing and speaking vocabulary, articulation, and grammaticality. No significant differences appeared in silent reading comprehension and vocabulary, oral reading rate, spelling, verbal output, length of clause, and the degree of subordination. Bilingual children at all levels of intelligence scored lower in the language achievement tests than monolingual children at corresponding levels, except for the bilingual children of 121 I.Q. and over. The latter group either attained or surpassed the achievement of monolinguals in the same category of intelligence on all the language tests except that of hearing vocabulary.

Smith (1949) reported that the average vocabulary of the bilinguals in her study was far below the average vocabulary of the English monolinguals.

After an extensive review of studies, Arsenian (1945) concluded that monolingual children tend to be superior to bilingual children in verbal intelligence, vocabulary, and school achievement at least during the elementary school years. Jensen's review (1962) surveys the ill effects of bilingualism on the individual and on society. He adduced numerous studies (Smith, 1939; Lynn, 1945;

Christopherson, 1948; Haugen, 1956) to support the claim that "numerous handicaps may accrue to the individual in his speech development, over-all language development, intellectual and educational progress, and emotional stability."

Jensen (1962) also summarized the advantageous effects of bilingualism. He found that, whereas earlier studies tended to stress the disadvantages, investigations of the last two decades tended to stress the advantages of bilingualism (Pintner, 1932; Castner, 1940; Spoerl, 1943; Leopold, 1948; Anastasi, 1953; Jones, 1953; Weinreich, 1953; Carrow, 1957; Totten, 1960). Anastasi and Totten both produced evidence that showed bilingual children superior in mean sentence length, maturity of sentence structure, and vocabulary. Pintner claimed that if a language handicap existed in childhood it would quickly diminish with increasing age depending on the individual's intelligence and his opportunity to mingle in an English-speaking environment. Spoerl concluded that at the college level, bilingual students had no significant language handicap and even possessed some advantages.

Jacobs and Pierce (1966) recently compared a monolingual American group of fifth and sixth grade children with three bilingual groups. The bilingual groups scored considerably higher on a non-verbal "Uses" test of creativity, and

slightly lower on a verbal "Word Meanings" test. The combined score showed the bilinguals scoring considerably higher than the monolinguals.

One reason for the lack of unanimity among scholars comparing the language development of monolinguals and bilinguals is the difficulty of defining the factor of bilingualism and isolating it from such confounding variables as socio-economic status, cultural difference, and dialect variations from the "standard" dialect.

School Environment. It is generally thought that a child's language development is greatly influenced by his school peers and his teachers. However, the paucity of research pertinent to those important influences leaves us with many assertions which are still only speculation.

Gesell and Ilg (1946) suggested that young children appear to be influenced by the teacher's language far more than older children. Strickland (NCRE, 1953) asserted that during elementary school years the "teacher is herself, an important part of the language curriculum. Her voice, vocabulary, enunciation, choice of words, and sentence structure all influence children in a variety of ways."

Within the last two years three studies of the syntactic structures of teachers' language have been completed (Kean, 1967; Sr. Antoinette Lemire, 1968; Thomas, 1968). Kean (1969) is currently investigating the

classroom language of children at four grade levels and is comparing it with the language of their teachers. Kean's 1967 study did not uncover any significant differences in the oral classroom language of second and fifth grade teachers. Thomas (1968) made a syntactic analysis of the oral classroom language and written discourse of twenty-one student teachers of English in five secondary grade levels. As could be expected, the written discourse of the student teachers was more syntactically mature than was their oral language. However, a surprising discovery as a result of comparing the teachers' language with that of the children in O'Donnell's study (1967) was that the mean T-unit length of the teachers' language was less than that of the children. Sr. Lemire (1968) conducted a linguistic survey of the verbal behaviour of six bilingual fifth-grade teachers in the French-speaking schools of Ottawa. Once again, though teachers' language was analyzed in yet another context, little information was provided about the effects of teachers' classroom language on the development of children's language. It is hoped that Kean's study which is now underway will supply some relevant evidence to this much neglected but important area of research.

Conclusion

Griffin (1968) asserts that "syntax is at the heart

of language -- it makes possible much of the creativeness of language; it appears to be characterized by daedal complexity." Studies of the acquisition and development of children's syntax could well hold important implications for linguists who are particularly interested in the relationship of competence and performance in language learning, for psychologists who are concerned with relationships between language and behaviour, and for educators who are expected to guide the syntactic development of their students.

The realization of the importance of language research has resulted in many new and exciting projects. The new techniques of linguistic analysis should continue to aid in discovering and measuring the various factors that influence language development.

CHAPTER III

DESIGN AND PROCEDURES OF THE STUDY

Broadly stated, the purpose of this study was to investigate the syntactic structures of children representing various ethno-linguistic backgrounds. This involved a series of analyses applied to comparable samples of written language of fourth and sixth grade children for the purpose of assaying comparative linguistic maturity, dialectical variations, and selected variables related to language development.

The design and procedures are discussed in this chapter. The discussion includes the description of:

1. The sample.
2. Procedures employed in collecting the language samples.
3. Analysis of the language samples.
4. Treatment of the data.

Description of the Sample

The 144 pupils in this study were drawn from nine rural Manitoba schools. Each of the three distinctly different ethnic communities was represented by three schools. The schools were matched across communities for size and proximity to a large city. The communities

chosen were parallel in linguistic-ethnic background: monolingual, Anglo-Saxon, Protestant, (Mono); bilingual, German, Mennonite, (B-G); bilingual, French, Roman Catholic, (B-F). Although the religious concomitant was not a variable selected for study, it served to delineate and identify distinct communities. Religious affiliation and language background constitute, perhaps, the most cohesive factors of ethnic communities in Manitoba. Therefore, selection of communities on the basis of these two major criteria assured reasonably homogeneous sub-samples.

Since it has been shown that socio-economic status is an important factor in language development (e.g., Templin, 1957; Bernstein, 1960; Loban, 1963), it was essential that the sub-samples of this study should be parallel in their socio-economic status. Thus, one of the three schools from each sub-sample was located near Winnipeg and the other two from each sub-sample were remote from Winnipeg. Selection of schools was further restricted to those not having more than five classrooms in grades one to eight. The pupils in all the schools were drawn from a predominantly agricultural population. There appeared to be a high degree of uniformity in socio-economic status across the sample.

The sample was selected randomly in equal frequencies from two grades in each of the nine schools. Thus, with four boys and four girls from grades four and six from each school, each community was represented by 48 subjects. Table 3:01 presents a graphic distribution of subjects in the sample.

TABLE 3:01
DISTRIBUTION OF SUBJECTS IN SUB-SAMPLES
BY GRADE AND SEX

Grade	Sex	Mono	B-G	B-F
4	Male	12	12	12
4	Female	12	12	12
6	Male	12	12	12
6	Female	12	12	12
		N = 48	N = 48	N = 48

Table 3:02 presents descriptive data about age ranges occurring in the sub-samples by grade and sex.

TABLE 3:02
AGE RANGES IN YEARS OF SUBJECTS IN SUB-SAMPLES
BY GRADE AND SEX

Grade	Sex	Mono	B-G	B-F
4	Male	9.4 - 11.7	9.6 - 13.5	8.9 - 11.9
4	Female	9.4 - 11.0	9.0 - 11.3	9.5 - 12.3
6	Male	11.5 - 14.6	11.3 - 13.9	11.6 - 14.2
6	Female	11.5 - 13.1	10.3 - 13.8	11.7 - 13.7

More descriptive data are given in Table 3:03.

TABLE 3:03

MEANS AND STANDARD DEVIATIONS OF AGE LEVELS IN YEARS
BY SUB-SAMPLES, GRADE, AND SEX

A C R O S S T O T A L S A M P L E	Mono Sub-sample $\bar{x} = 11.17$ SD = 1.20	Grade 4 $\bar{x} = 10.17$ SD = 0.60	Male $\bar{x} = 10.34$ SD = 0.69
			Female $\bar{x} = 10.00$ SD = 0.47
		Grade 6 $\bar{x} = 12.17$ SD = 0.70	Male $\bar{x} = 12.32$ SD = 0.81
			Female $\bar{x} = 12.02$ SD = 0.56
	B-G Sub-sample $\bar{x} = 11.42$ SD = 1.28	Grade 4 $\bar{x} = 10.53$ SD = 0.70	Male $\bar{x} = 10.85$ SD = 1.20
			Female $\bar{x} = 10.21$ SD = 0.63
		Grade 6 $\bar{x} = 12.32$ SD = 0.83	Male $\bar{x} = 12.37$ SD = 0.66
			Female $\bar{x} = 12.27$ SD = 1.00
	B-F Sub-sample $\bar{x} = 11.34$ SD = 1.27	Grade 4 $\bar{x} = 10.34$ SD = 0.93	Male $\bar{x} = 10.47$ SD = 1.04
			Female $\bar{x} = 10.21$ SD = 0.81
		Grade 6 $\bar{x} = 12.33$ SD = 0.63	Male $\bar{x} = 12.41$ SD = 0.67
			Female $\bar{x} = 12.26$ SD = 0.60
N = 144 $\bar{x} = 11.31$ SD = 1.25			

The table indicates great similarity in mean age for corresponding levels and groups among sub-samples. The results of t-tests reveal no significant difference for the community variable but a significant difference at the .05 level for the sex variable, favouring the males in mean age.

That there is no significant difference in mean age among sub-samples (linguistic communities) and between corresponding grade levels among the sub-samples, assures the comparability of the sub-samples.

The Pintner General Ability Tests: Verbal Series (Intermediate) were administered to all the subjects in the sample. The Deviation I.Q. was computed for each subject according to the Pintner Table of Standard Score Norms and the Deviation I.Q. Norms.

Table 3:04 presents descriptive data about Deviation I.Q. scores obtained from the sample.

DESCRIPTIVE DATA FOR DEVIATION I.Q. SCORES
AMONG SUB-SAMPLES, GRADES, AND SEXES

A C R O S S T O T A L S A M P L E N = 144 $\bar{x} = 105.73$ SD = 13.23	Mono Sub-sample $\bar{x} = 110.85$ SD = 10.84	Grade 4	Male $\bar{x} = 108.75$ SD = 11.55
		$\bar{x} = 111.92$ SD = 12.76	Female $\bar{x} = 115.08$ SD = 13.61
		Grade 6	Male $\bar{x} = 109.42$ SD = 9.29
		$\bar{x} = 109.79$ SD = 8.66	Female $\bar{x} = 110.17$ SD = 8.39
	B-G Sub-sample $\bar{x} = 104.08$ SD = 13.79	Grade 4	Male $\bar{x} = 104.67$ SD = 16.71
		$\bar{x} = 104.83$ SD = 14.78	Female $\bar{x} = 105.00$ SD = 13.31
		Grade 6	Male $\bar{x} = 101.58$ SD = 10.68
		$\bar{x} = 103.33$ SD = 13.01	Female $\bar{x} = 105.08$ SD = 15.28
	B-F Sub-sample $\bar{x} = 102.25$ SD = 13.51	Grade 4	Male $\bar{x} = 101.08$ SD = 14.77
		$\bar{x} = 101.12$ SD = 13.03	Female $\bar{x} = 101.17$ SD = 11.69
		Grade 6	Male $\bar{x} = 104.67$ SD = 16.14
		$\bar{x} = 103.31$ SD = 14.16	Female $\bar{x} = 102.08$ SD = 12.46

The table indicates a noticeable difference in mean Deviation I.Q. scores among sub-samples. The B-G and B-F sub-samples show very similar means but the Monolingual sub-sample showed a markedly higher mean. A t-test revealed that the difference was significant at the .01 level. However, no significant differences were indicated for the variables of grade and sex.

Further comparison of mean Deviations I.Q. results can be made from Table 3:05 which shows the distribution of scores among sub-samples.

TABLE 3:05
 DISTRIBUTION OF PINTNER DEVIATION I.Q. SCORES AMONG SUB-SAMPLES

Score	Mono Freq.	Percent of Sub-Sample	B-G Freq.	Percent of Sub-sample	B-F Freq.	Percent of Sub-sample
130 - 139	1	2.08				
120 - 129	7	14.58	6	12.50	4	8.25
110 - 119	24	50.00	13	27.08	12	25.00
100 - 109	7	14.58	12	25.00	13	27.08
90 - 99	7	14.58	10	20.83	9	18.75
80 - 89	2	4.16	7	14.58	7	14.58
70 - 79					3	6.25
	N = 48		N = 48		N = 48	

The table indicates that although over 70 per cent of all the subjects fall into the 90 - 119 Deviation I.Q. range, the monolingual sub-sample has a preponderance of the balance above this range. The bilingual sub-samples show a preponderance of the balance falling below the 90 - 119 range.

The differential in ability, favouring the monolingual sub-sample, must be taken into consideration when assessing relative language development among the sub-samples.

To facilitate further comparisons among sub-samples, each sub-sample was divided into three ability level groups: low, middle, and high. Linguistic performance by these corresponding tertile levels among the sub-samples was analyzed and examined for further comparisons of language development.

Collection of Language Samples

The film media were used as the evocative technique to elicit written language samples. After viewing a short filmstrip, "The Fisherman and His Wife" (Curriculum Films), the children were given an opportunity to write about the story. Ample space and time were provided for them to respond to three directives: In your own words tell the story of "The Fisherman and His Wife"; Explain in a few sentences what you think of the fisherman's wife; and Explain in a few sentences what you think of the fisherman.

To offset the possible structuring effect of the script of the filmstrip on the writing of the children, a short movie "Three Little Bruins in a Canoe" (Castle Films) was shown. The sound remained shut off and the film was stopped after a minute and a half at a point when the bears were just heading for a waterfall. The response elicited by this technique added the dimension of imagination and creativity to the subjects' writing which had been predominantly narrative and descriptive in response to the filmstrip. To the instruction to tell the story of the three bruins were added questions intended to elicit a more philosophic response:

Write in a few sentences what you think happened after the canoe turned over.
Do you think this is a true story?
Write in a few sentences why you think so (or don't think so).

Furthermore, the silent movie avoided any possible imitative response.

Thus, although the evocative techniques employed were semi-structured, the narrative and descriptive response elicited by filmstrip and the imaginative and thoughtful response evoked by the movie, provided the investigator with a balanced range of syntactic performance.

Analysis of the Language SamplesTheory Underlying Transformational Analysis.

Basic to the transformational generative theory is Chomsky's statement (1957) that a grammar "is a device that generates all of the grammatical sequences of a language and none of the ungrammatical ones." Implicit in this definition is the idea that "sentences", if they are to be grammatical, must be consistent with the rules and operations specified by the "device" or grammar of the language. Such a grammar should ultimately be capable of "enumerating" all the possible sentences of the language. A generative grammar cannot actually produce the infinite number of potential sentences inherent in a language, but it attempts to make a comprehensive account of the rules, both phrase structure rules and transformational rules, that the native speaker employs, consciously or unconsciously, when he produces a sentence. Thomas (1967) states:

But all speakers have some method of "undertaking" completely novel sentences never spoken before, which means that they must have a way of "determining" all of the infinite number of sentences. In other words, rules that generate or determine are actually generalizations about language which permit a native speaker, among other things, to evaluate the grammaticality of any novel sentence.

A transformational generative grammar, as the term implies, operates on two contiguous levels. On a primary

level, a basic sentence can be generated by applying a list of rules that combine a list of symbols in various ways. On a secondary level, another set of rules governs the arrangement and rearrangement of various elements of the basic sentence to produce a derived sentence.

What determines the basic sentence from which all other sentences are derived by transformation? Chomsky (1965) suggests that it is possible to "delimit a proper subset called 'kernel sentences'. . . sentences of a particularly simple sort that involve a minimum of transformational apparatus in their generation." The specific delineation of this subset of kernel sentences is not uniform among modern grammarians though they agree that a small set of basic sentences forms the backbone of the language, and that all other sentences (nonkernel) are derived from basic sentence types that underlie all kernel sentences. Hathaway (1967) lists three specific types:

1. Subject and intransitive verb (with possible adverbial complement).
2. Subject, transitive verb, and direct object (with or without indirect object or adverbial complement).
3. Subject, copula, and predicate complement.

Out of these and a few variants of these, by means of a variety of transformations (reductions, inclusions, and re-distributions) almost all of the sentences of English can be built.

The transformational rules "turn out to be numerous and exceedingly complex." (Hughes, 1968) But here too grammarians have attempted to simplify the description of transformations by grouping them.

For purposes of this study, O'Donnell's description (1967) is pertinent. He lists three major categories: (1) those that provide for the proper combination of elements, e.g., past tense + verb is converted to verb + past tense ('ed'+ 'look' is converted to 'look' + 'ed'); (2) those that convert a kernel sentence into another sentence type, e.g., to questions, negations, imperatives, passives; (3) and those that designate operations affecting two underlying strings so as to join them or embed one in the other. This process may require deletions, substitutions, or expansions as it performs a sentence-combining transformation on two or more kernel sentences. The sentences "The man bought an automobile" and "The man was poor" could be combined to produce "The man bought an automobile though he was poor" or "The man who was poor bought an automobile" or "The poor man bought an automobile" and so forth.

It is from this knowledge about how the operations of transformational rules combine sentences that a method of transformational analysis has evolved. Zellig Harris (1965) calls the procedures of this method a

"decomposition" of sentences "into sentences and operations on them, ultimately into elementary sentences . . . and elementary operations The operations (transformations) thus decompose sentences into sentences."

Chomsky (1966) illustrates transformational analysis with the sentence:

I expected the man who cuit work to be fired.

He shows how by a series of transformations this sentence was originally derived from three underlying sentences:

I expected it.
Someone fired the man.
The man cuit work.

Such a reconstruction of the transformational history of a derived sentence consists essentially of reversing the normal generation of a sentence in order to identify the steps through which it has passed in its formation.

It is not surprising that transformational analysis has yielded another effective method of language analysis to researchers of language development. Once it was discovered that sentences are generated and transformed according to regular rules, it was readily assumed that the identification of the frequency and complexity of the transformations employed in producing a sentence might provide a scale for measuring linguistic maturity.

Using such a scale, O'Donnell, Griffin and Norris (1967) demonstrated that for the pupils in their sample, the

average number of sentence-combining transformations increased significantly with increasing grade level. This finding supports their assumption that relative frequency of sentence-combining transformations is indicative of linguistic maturity: "Such a measure is objective, and there appear to be good grounds for believing it to have a high degree of validity." The validity and usefulness of this method have been attested by its widespread acceptance and use by recent researchers of children's language (e.g., Menyuk, 1961; Hunt, 1965; Bateman and Zidonis, 1966; O'Donnel, Griffin and Norris, 1967). This new method provides an extension and improvement to the method employed by researchers operating within the traditional grammatical framework (LaBrant, Watts, McCarthy) and an updating of the techniques used by structuralists in the early sixties (Loban, Strickland).

Segmentation of the Language Samples. Kellogg Hunt (1965) devised the minimal terminable unit (T-unit) and found it to be a reliable device for segmenting language. The T-unit is a single independent predication together with any subordinate clauses that may be grammatically related to it. Thus, it may be a simple or a complex sentence. In this study, when a co-ordinating conjunction occurred as a link between two independent clauses it was considered as the first element of the second T-unit.

Segmenting a piece of writing into T-units often requires disregarding the writer's punctuation; however, the definition of such units is so clear and their identification depends on grammatical principles so generally understood, that any competent analyst can segment language samples uniformly and with high reliability. The boundaries of T-units, unlike those for the sentence, are unequivocal and independent of the whims of a child's punctuation habits.

The T-units were transcribed on typescripts with the appropriate spaces to allow for further grammatical analysis.

Grammatical analysis of the language samples. Since this study was concerned with measuring syntactic-linguistic development, it was necessary to adopt certain valid indices of language maturity. Much recent research in language, and especially that of Hunt (1965) and O'Donnell, Griffin and Norris (1967), has provided reliable indices of language development which are suitable

1. Number and length of T-units
2. Number of mazes ("negative" index)
3. Number of T-units beginning with co-ordinating conjunctions ("negative" index)
4. Subordinate clause ratio
5. Mean clause length
6. Number of sentence-combining transformations

The method of analysis used in this study was designed to provide the data pertinent to these indices. An analysis sheet with all the grammatical categories to be analyzed provided for a systematic method of tabulating the data. A copy of the linguistic analysis sheet can be found in Appendix B. Examples of grammatical analysis can be found in Appendix C.

A count of the number of T-units and the number of words per T-unit provided information necessary to calculate the mean T-unit length. Extraneous material such as mazes, redundancies, and false starts were excluded from the word count and, therefore, did not affect the mean T-unit length. Compound words with a double base, e.g., "waterfall", and contractions, e.g., "didn't", were counted as two words.

A count of the subordinate clauses supplied the data needed to calculate the subordinate clause ratio, e.g.,

$$\text{subordinate clause ratio} = \frac{\text{sum of all clauses}}{\text{sum of main clauses}}$$

and the mean clause length, e.g.,

$$\text{mean clause length} = \frac{\text{total number of words}}{\text{sum of all clauses}}$$

Another important index of linguistic maturity which has been shown to be useful and valid is the relative number of sentence-combining transformations occurring in written or oral language. In this study, as in O'Donnell's study (1967),

the sentence-combining transformations identified were those producing nominal constructions, those producing adverbial constructions, and those producing co-ordinate constructions within T-units. The sentence-combining transformations which link independent predications were excluded from consideration by the decision to segment the material into T-units. However, a count was made of all the co-ordinate conjunctions which introduced T-units. The count was significant in indicating a "negative" index of linguistic maturity, i.e., the number of co-ordinating conjunctions occurring at the beginning of a T-unit varies inversely with maturity (Hunt, 1965). A count of the number of mazes provided another negative index of language development.

A record of the sentence patterns occurring in this sample and a count of the frequency of certain patterns revealed interesting comparisons among the sub-samples, as well as with the samples of other studies.

The sentence patterns considered in this study were:

Subject-Verb: The boat stopped.
 Subject-Verb-Object: The three bears pushed the boat.
 Subject-Verb-Complement: He was an old fisherman.
 Subject-Verb-Adjective Complement: He was very kind.
 Subject-Verb-Indirect Object-Object: The fish gave them a hut.
 Subject-Verb-Object-Object Complement: His wife called him a fool.
 Subject-Verb-Object-Adjectival: That made him angry.
 Adverb-Verb-Subject: Here is my castle.
 There-Verb-Subject: There is a fish in the sea.
 It-Verb-Subject: It is good to be unselfish.
 Passive: The talking fish was caught by a fisherman.
 Command: Please throw me back into the water.
 Question: Why didn't you ask him for a palace?
 Partial: Because the bear lost it.

The nominal sentence-combining transformations were classified according to headed and non-headed constructions. Headed nominal constructions are those in which a modified noun could by itself function grammatically as a whole construction. The following combinations were considered in this study:

Noun + Noun: bear cub
 Noun + Adjective: kind man
 Noun + Possessive: his wife; fisherman's wife
 Noun + Relative Clause: The fish which was caught was a prince.
 Noun + \emptyset Relative Clause: The girl I love is not here.
 Noun + Prepositional Phrase: The bear on the rocks is Elmer.
 Noun + Infinitive Phrase: food to eat
 Noun + Participial Phrase: food eaten by them; talking fish
 Noun + Adverb: the man outside

All determiners (Roberts, 1965) were excluded from consideration in this study. The traditional adjective clause was not listed separately since it could be accounted for in the headed nominal constructions except where an adjective clause modified an adjective or adverb. Then it was classed as an adverbial construction.

Non-headed nominal constructions are those which function as wholes in fashions typical of nouns but cannot be grammatically replaced by a single word contained in them. The following categories were considered:

Noun Clause: She said she wanted to be king.
 Noun Clause-Direct Discourse: She said, "I want to be king."
 Prepositional Phrase: She was in trouble.
 Infinitive Phrase: To live in a castle was her desire.
 Infinitive Phrase + Subject: He told the man to go home.
 Gerund Phrase: He kept them from running away.

Each of the nominal constructions was classified according to its function in the sentence. The following functions were listed:

Subject: What she wished became true.

Object: She saw a beautiful castle.

Indirect Object: The fish had given the selfish woman her wish.

Subject Complement: It was a beautiful castle.

Object Complement: The surprise made it a lucky day for her.

Appositive: She had received a castle, a huge castle.

Object of Preposition: She was not thankful for her good fortune.

Adverbial Noun: It lasted only a little while.

The sentence-combining transformations producing adverbial constructions were subdivided into three types:

1. Adverb Clauses: Each adverb clause was listed under the appropriate traditional categories of time, place, manner, cause, condition, and comparison. Examples of the reduced clause of comparison occurred several times in the sample. They were included in the comparison category. The "more the merrier" type occurred only twice and so it was excluded from the count. The "Adjective Complement" category was added to the list of Adverb clauses to accommodate clauses modifying a predicate adjective, e.g., She was not satisfied with what she had.

2. Sentence Adverbials: The constructions considered in this category were those which modified the whole sentence rather than one constituent of the sentence.

Absolute Construction: The weather being fine, the fisherman went out to fish.

Interjected Clause: The fisherman, I think, was the one that was unselfish.

3. Adverbial Phrases: The adverbial infinitive phrase and the adverbial prepositional phrase were considered, as illustrated by the following:

Adverbial Infinitive: The fisherman went to ask the fish for a castle.

Adverbial Prepositional Phrase: The fisherman was glad for his wife's sake.

The sentence-combining transformations producing co-ordinate structures were subdivided into three categories: co-ordinate modifiers, co-ordinate nominals, and co-ordinate predicates.

Co-ordinate Modifiers:

Adjectival: thin, old man

Adverbial: The bears fell out of the boat and into the river.

Co-ordinate Nominals: The fisherman and his wife lived in a hut.

Co-ordinate Predicates: The smallest cub stayed behind and got lost.

(Co-ordinate predicates were listed according to their predicate pattern, e.g., Verb, Verb-Object, Verb-Object-Complement; Verb-Adjective Complement; and Verb-Indirect Object-Object.)

Because one of the purposes of this study was to find out more about how children from varying ethnic backgrounds exhibit dialectical patterns in writing which deviate from standard English usage, it was necessary to analyze the language samples for deviations.

The error analysis employed in this study is essentially that used by Bateman and Zidonis (1966) in their study of grade nine and ten students. In adapting

their technique of error analysis to the lower grade levels of this study, it was necessary to expand their range of co-occurrence errors in the analysis.

The grammatical errors analyzed in this study were classified according to five kinds of errors occurring in the subjects' use of obligatory generative and transformational rules.

Class I Error: Misapplication of a transformational operation, e.g., a relative clause may be misplaced: The wife was greedy, which lived in the castle.

Class II Error: Use of one transformation when another is required, e.g., an infinitive phrase used instead of a noun clause: The man said to swim or come out of the water.

Class III Error: Use of a transformation when none is required, e.g., a deletion transformation when it is not permitted: Such ideas have and can be found.

Class IV Error: Omission of a required transformation, e.g., omission of a deletion transformation: The man who was in the boat he was a fisherman. (This error is most common in the use of a redundant subject.)

Class V Error: Co-occurrence error --- mutually exclusive grammatical elements co-occurring, e.g., Fragment: The bears falling from the boat. (The phrase structure rules require a finite verb in the predicate.)
Inconsistencies in discourse, form, number, and tense were considered co-occurrence errors:

Discourse: The wife said the cottage is too small.

Form:

Verb: "swimmed" for "swam"

Preposition: "in" for "into"

Modifier: "happy" for "happily"

Number: The bears was in the boat.

Tense: (within the T-unit) They rowed the boat and tip.

A few other inconsistency usage errors occurred.

Inconsistency of gender appeared a few times in such

expressions as "her wife" and "his husband", but these occurred only in the language of the youngest subjects and was perhaps more a confusion of kinship terms than grammatical carelessness. The other co-occurrence error that appeared only two or three times was the use of the double negative. Since these errors were so rare in occurrence, they were omitted from consideration in this study.

Statistical Treatment of the Data

After the total language samples had been analyzed, a frequency count for each variable was made for each subject. All the data were punched on to IBM cards.

The data were analyzed by analysis of variance procedures employing a 3 x 2 x 2 factorial design. The independent variables -- ethnic-linguistic community, grade, and sex -- were tested for significance for each of the grammatical variables. Significance levels were considered at both the .05 and .01 levels.

The ratios worked out for subordinate clause index and the mean clause length were subjected to a significance of proportions test.

Further analysis of variance tests were run, blocking on ability levels (high, middle, low) for each of the major indices of language development:

1. Number and length of T-units
2. T-units beginning with co-ordinate conjunctions

3. Number of subordinate clauses

4. The first six main-clause patterns listed in rank order of occurrence.

5. Number of sentence-combining transformations and all of the major sub-classifications

This enabled the investigator to examine more closely differences in linguistic performance within ability levels.

Descriptive statistics are presented in tabular form in Chapter IV for all the grammatical categories which provided important data for comparison among the sub-samples.

CHAPTER IV

ANALYSIS OF THE DATA

Before presenting the analyses, a brief review of the basic design and procedures is presented below.

The major purpose of this study was to investigate the language of children representing varying ethnological-linguistic communities in Manitoba for relative linguistic maturity and for dialectical variations. The investigator was also interested in examining some of the variables which have been found by some investigators to influence language development, e.g., ethnic-linguistic background, grade level, sex, and ability.

Written language samples, 4340 T-units produced by 144 grade four and six children from nine schools in three distinctly different ethno-linguistic communities, were segmented and analyzed to supply pertinent data for measurement according to accepted indices of language development, e.g., length of response, subordination ratio, mean clause length, frequency of sentence-combining transformations.

Examination of descriptive statistical trends and analysis of variance procedures were employed to investigate pertinent independent variables -- community, grade, sex, ability -- for possible linguistic trends.

The following data will be presented and analyzed:

A. Data relevant to the major linguistic indices:

1. Number of T-units
2. Mean length of T-units
3. Number of subordinate clauses
4. Subordinate clause ratio
5. Mean clause length
6. Number of sentence-combining transformations
7. Number of T-units beginning with co-ordinating

conjunctions

8. Number of mazes

B. Data relevant to syntactic structures:

1. Frequency of main-clause patterns

C. Data relevant to sentence-combining transformations:

1. Nominal transformations
2. Adverbial transformations
3. Co-ordinate transformations

D. Data relevant to dialectical variations:

1. Error analysis
2. Unidiomatic expressions
3. Diversity of syntactic structures

PRESENTATION AND ANALYSIS OF DATA

Major Linguistic Indices

Number of T-units. Table 4:01 presents the mean number of T-units produced across sample and among sub-samples.

TABLE 4:01

DESCRIPTIVE DATA FOR NUMBER OF T-UNITS

A C R O S S T O T A L S A M P L E	Mono Sub-sample	Grade 4	Male $\bar{x} = 26.58$ SD = 6.35
		$\bar{x} = 28.25$ SD = 8.00	Female $\bar{x} = 29.92$ SD = 9.36
		Grade 6	Male $\bar{x} = 29.29$ SD = 8.59
		$\bar{x} = 30.08$ SD = 7.49	Female $\bar{x} = 30.25$ SD = 6.59
	B-G Sub-sample	Grade 4	Male $\bar{x} = 26.00$ SD = 6.32
		$\bar{x} = 28.50$ SD = 8.52	Female $\bar{x} = 31.00$ SD = 9.91
		Grade 6	Male $\bar{x} = 29.42$ SD = 4.48
		$\bar{x} = 32.62$ SD = 7.32	Female $\bar{x} = 35.83$ SD = 8.33
	B-F Sub-sample	Grade 4	Male $\bar{x} = 29.92$ SD = 8.51
		$\bar{x} = 31.83$ SD = 9.15	Female $\bar{x} = 33.75$ SD = 9.73
		Grade 6	Male $\bar{x} = 29.08$ SD = 6.37
		$\bar{x} = 29.58$ SD = 5.50	Female $\bar{x} = 30.08$ SD = 4.70
N = 144 $\bar{x} = 30.15$ SD = 7.78			

Table 4:01 indicates only a slight difference in mean number of T-units among sub-samples. Very little variability is indicated. Reference to raw data tables in Appendix A indicates that a total of 4340 T-units were written by the total sample. Of this total the Monolingual sub-sample produced 1400 T-units, the B-G sub-sample produced 1466 T-units, and the B-F sub-sample produced 1474 T-units.

Greater variation and variability occurs among the sub-groups. The B-F grade fours exceeded their counterparts in the other sub-samples in mean number of T-units. The B-G grade sixes wrote an average of three more T-units than their counterparts in the other two sub-samples. In all sub-samples the females were more prolific in producing T-units than the males.

Analysis of variance results related to mean number of T-units are presented in table 4:02.

TABLE 4:02
ANALYSIS OF VARIANCE FOR NUMBER OF T-UNITS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	69.650	34.828	0.59
Grade	1	55.125	55.125	0.94
Com x Gr	2	250.078	125.039	2.14
Sex	1	396.797	396.797	6.78**
Com x Sex	2	104.531	52.266	0.89
Gr x Sex	1	19.313	19.313	0.33
Com x Gr x Sex	2	37.875	18.938	0.32
Within cells	132	7728.625	58.550	

** Significant at .01 level

The table indicates a significant difference at the .01 level for the sex variable in favour of the females across the total sample.

It is important to note that since the number of T-units produced, indirectly influences the frequency of grammatical categories occurring within T-units, no significant differences are shown for two main effects -- community and grade. The significant superiority of females in producing T-units will have to be kept in mind when assessing the sex variable in all measures relating to frequency counts of elements within T-units.

Table 4:03 presents the descriptive data relevant to another important variable -- ability. The table shows the means and standard deviations for number of T-units produced within sub-samples among ability levels.

TABLE 4:03

DESCRIPTIVE DATA FOR NUMBER OF T-UNITS WRITTEN BY LOW, MIDDLE, AND HIGH ABILITY LEVELS WITHIN SUB-SAMPLES

Ability level	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
High	31.98	6.88	27.79	9.29	30.84	7.27	33.27	5.30
Middle	30.58	7.61	28.60	8.15	29.62	8.15	33.18	8.04
Low	27.64	8.41	26.53	8.43	31.18	7.84	29.50	6.58

The greatest differences occur between the low and middle tertiles within the Monolingual and B-F sub-samples. This is reflected in the sample means.

Significant differences among ability levels are shown in Table 4:04 on the basis of an analysis of variance test.

TABLE 4:04

ANALYSIS OF VARIANCE FOR NUMBER OF T-UNITS
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	70.812	35.406	0.60
Ability	2	467.695	233.847	3.94*
Com x Ability	4	131.889	32.972	0.56
Within cells	135	8011.871	59.347	

* Significant at .05 level

The table indicates a significant difference at the .05 level among ability levels favouring the high level. The greater part of the differential occurs between the low and middle tertiles. Once again, this significant difference in number of T-units produced by the ability levels must be taken into consideration in subsequent measures of frequency of grammatical categories which are dependent on the T-unit.

Mean length of T-units. Table 4:05 shows descriptive data relevant to mean T-unit length across and within sub-samples.

TABLE 4:05

DESCRIPTIVE DATA FOR MEAN LENGTH OF T-UNITS

A C R O S S T O T A L S A M P L E	Mono Sub-sample $\bar{x} = 8.92$ SD = 1.19	Grade 4 $\bar{x} = 8.74$ SD = 1.38	Male $\bar{x} = 8.70$ SD = 1.26
			Female $\bar{x} = 8.78$ SD = 1.54
		Grade 6 $\bar{x} = 9.10$ SD = 0.96	Male $\bar{x} = 9.13$ SD = 1.09
			Female $\bar{x} = 9.07$ SD = 0.86
	B-G Sub-sample $\bar{x} = 8.55$ SD = 1.18	Grade 4 $\bar{x} = 8.21$ SD = 1.00	Male $\bar{x} = 8.12$ SD = 1.03
			Female $\bar{x} = 8.31$ SD = 0.99
		Grade 6 $\bar{x} = 8.89$ SD = 1.27	Male $\bar{x} = 8.55$ SD = 1.39
			Female $\bar{x} = 9.23$ SD = 1.09
	B-F Sub-sample $\bar{x} = 8.05$ SD = 0.89	Grade 4 $\bar{x} = 7.89$ SD = 0.92	Male $\bar{x} = 7.97$ SD = 1.12
			Female $\bar{x} = 7.82$ SD = 0.72
		Grade 6 $\bar{x} = 8.20$ SD = 0.84	Male $\bar{x} = 8.43$ SD = 0.91
			Female $\bar{x} = 7.97$ SD = 0.73
N = 144 $\bar{x} = 8.51$ SD = 1.14			

The mean T-unit length of the B-G community approximates the sample mean. The Monolingual and B-F communities are respectively, to the same extent, above and below the sample mean. Thus, there appears to be a uniform decrease in mean T-unit length from the Monolingual to the B-G to the B-F community. There is very little sex differential within and across sub-samples. However, noticeable differences occur between grade levels. In every sub-sample grade six subjects excelled in length of T-units.

Analysis of variance results for mean T-unit length are presented in Table 4:06.

TABLE 4:06

ANALYSIS OF VARIANCE FOR MEAN LENGTH OF T-UNITS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	18.522	9.261	7.84**
Grade	1	7.339	7.339	6.21**
Com x Gr	2	0.946	0.473	0.40
Sex	1	0.085	0.085	0.07
Com x Sex	2	3.319	1.660	1.40
Gr x Sex	1	0.003	0.003	0.00
Com x Gr x Sex	2	1.072	0.536	0.45
Within cells	132	155.964		

** Significant at .01 level

The table reflects a very substantial differential among linguistic communities favouring the monolingual sub-sample significant at the .01 level. A differential between grades four and six in mean T-unit length is also significant at the .01 level.

Table 4:07 presents the descriptive data for mean T-unit length among ability tertiles across and among sub-samples.

TABLE 4:07

DESCRIPTIVE DATA FOR MEAN T-UNIT LENGTH FOR LOW, MIDDLE, AND HIGH ABILITY LEVELS WITHIN SUB-SAMPLES

Ability level	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
High	8.84	1.15	9.24	1.26	8.72	1.22	8.53	0.86
Middle	8.40	1.10	8.76	1.13	8.56	1.20	7.95	0.86
Low	8.27	1.13	8.76	1.18	8.35	1.16	7.66	0.77

The table indicates that there is a much greater difference in mean T-unit length between middle and high groups than between low and middle groups. This difference is noteworthy in the light of information concerning number of T-units written as shown in Table 4:03.

Across high ability levels, the monolingual community has an appreciably higher mean T-unit length than the other two communities. However, for the middle and low ability

levels the greatest difference occurs between the B-G community and the B-F community in favour of the former.

Analysis of variance data for mean T-unit length among ability levels are presented in Table 4:08.

TABLE 4:08

ANALYSIS OF VARIANCE FOR MEAN LENGTH OF T-UNITS
ACROSS ABILITY LEVELS AMONG SUB-SAMPLES

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	18.488	9.244	7.82**
Ability	2	8.282	4.141	3.50*
Com x Ability	4	1.407	0.352	0.30
Within cells	135	159.492	1.181	

** Significant at .01 level

* Significant at .05 level

The table indicates a significant difference at .05 level among ability levels favouring the high level.

Number of subordinate clauses. Table 4:09 presents the descriptive data relevant to the number of subordinate clauses produced.

TABLE 4:09

DESCRIPTIVE DATA FOR NUMBER OF SUBORDINATE CLAUSES

A C R O S S T O T A L S A M P L E	Mono Sub-sample	Grade 4	Male $\bar{x} = 10.83$ SD = 5.41
		$\bar{x} = 11.58$	Female $\bar{x} = 12.33$ SD = 5.60
		SD = 5.44	
	$\bar{x} = 11.42$ SD = 4.85	Grade 6	Male $\bar{x} = 10.58$ SD = 4.54
		$\bar{x} = 11.25$	Female $\bar{x} = 11.92$ SD = 4.10
		SD = 4.29	
	B-G Sub-sample	Grade 4	Male $\bar{x} = 8.50$ SD = 4.85
		$\bar{x} = 10.62$	Female $\bar{x} = 12.75$ SD = 7.71
		SD = 6.66	
$\bar{x} = 11.35$ SD = 5.76		Grade 6	Male $\bar{x} = 9.75$ SD = 2.77
		$\bar{x} = 12.08$	Female $\bar{x} = 14.42$ SD = 5.21
		SD = 4.73	
N = 144 $\bar{x} = 10.80$ SD = 5.17	B-F Sub-sample	Grade 4	Male $\bar{x} = 9.17$ SD = 5.08
		$\bar{x} = 8.96$	Female $\bar{x} = 8.75$ SD = 4.47
		SD = 4.69	
	$\bar{x} = 9.62$ SD = 4.75	Grade 6	Male $\bar{x} = 10.08$ SD = 5.73
		$\bar{x} = 10.29$	Female $\bar{x} = 10.50$ SD = 3.97
	SD = 4.82		

The B-F sub-sample wrote a mean number of almost two less subordinate clauses than the other two sub-samples. Although B-F grade four and six females scored noticeably lower means than their counterparts in the other sub-samples, the superiority of females across the total sample is still evident in the mean number of subordinate clauses produced. It is also of interest to note the high variability within the B-G sub-sample. The grade four females have the highest mean and standard deviation among the grade fours. However, the grade six males have the lowest mean and standard deviation among all the grade sixes. The greatest variability within the B-F sub-sample occurs for grade six females.

Table 4:10 presents the analysis of variance for the mean number of subordinate clauses.

TABLE 4:10

ANALYSIS OF VARIANCE FOR NUMBER OF SUBORDINATE CLAUSES

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	99.261	49.630	1.92
Grade	1	24.167	24.167	0.93
Com x Gr	2	24.021	12.010	0.46
Sex	1	138.062	138.062	5.34*
Com x Sex	2	124.541	62.271	2.41
Gr x Sex	1	1.184	1.184	0.05
Com x Gr x Sex	2	1.518	0.759	0.03
Within cells	132	3412.410	25.852	

* Significant at .05 level

Table 4:10 indicates a significant difference between sexes at the .05 level.

Table 4:11 presents the descriptive data for number of subordinate clauses among ability levels.

TABLE 4:11

DESCRIPTIVE DATA FOR NUMBER OF SUBORDINATE CLAUSES
ACROSS ABILITY LEVELS AMONG SUB-SAMPLES

Ability level	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
High	13.19	5.82	13.12	5.63	13.41	6.92	13.00	4.99
Middle	10.35	3.99	11.18	3.52	10.56	4.65	9.42	3.82
Low	8.73	4.69	9.87	4.97	9.87	5.04	6.29	3.07

The table indicates a decreasing number of subordinate clauses written from high to middle to low ability levels. The greatest difference occurs between middle and high within each sub-sample, although within the B-F sub-sample there is a marked difference between the middle and low ability levels. Little difference occurs across ability levels among sub-samples except for the B-F low-ability level which is noticeably lower than corresponding levels in the other sub-samples.

Analysis of variance results for mean number of subordinate clauses among ability levels are presented in Table 4:12.

TABLE 4:12

ANALYSIS OF VARIANCE FOR NUMBER OF SUBORDINATE CLAUSES
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	100.074	50.037	2.11
Ability	2	494.286	247.143	10.43**
Com x Ability	4	63.060	15.765	0.67
Within cells	135	3199.227	23.698	

** Significant at .01 level

The difference among ability levels across sub-samples is significant at the .01 level in favour of high, middle, low groups in descending order.

Table 4:13 indicates the subordinate clause ratio for community, sex, and grade level.

TABLE 4:13

DESCRIPTIVE DATA FOR SUBORDINATE CLAUSE RATIO
ACROSS SAMPLE AND AMONG SUB-SAMPLES

Source	Sample	Mono	B-G	B-F
Sub-samples		1.39	1.36	1.31
Grade Four	1.35			
Male		1.41	1.33	1.31
Female		1.41	1.41	1.26
Grade Six	1.36			
Male		1.35	1.33	1.35
Female		1.39	1.40	1.35
Male	1.34			
Female	1.37			

The table indicates the amount of subordination in a ratio per T-unit. The Monolingual community incorporated subordinate clauses into their T-units 39 per cent of the time as compared to 36 per cent for the B-G community and 31 per cent for the B-F community. Except for the B-F community, grade fours were slightly superior to grade sixes in amount of subordination.

Mean clause length. Table 4:14 presents descriptive data relevant to mean clause length.

TABLE 4:14

DESCRIPTIVE DATA FOR MEAN CLAUSE LENGTH
ACROSS SAMPLE AND AMONG SUB-SAMPLES

Source	Sample	Mono	B-G	B-F
Sub-samples		6.41	6.23	6.13
Grade Four	6.12			
Male		6.19	6.12	6.10
Female		6.22	5.89	6.21
Grade Six	6.40			
Male		6.74	6.42	6.26
Female		6.51	6.48	5.91
Male	6.31			
Female	6.22			

The table indicates a decrease in mean clause length in descending order from Monolingual to B-G to B-F communities. An increase occurs with increase in grade level across the total sample and within sub-samples with the exception of grade six females in the B-F community. It is of interest that unlike the pattern for most of the other indices of language development used in this study the males are superior to the females in mean length of clauses.

Number of sentence-combining transformations. Table 4:15 presents the mean number of sentence-combining transformations occurring in the sample and variability of response within sub-samples.

TABLE 4:15

DESCRIPTIVE DATA FOR NUMBER OF SENTENCE-COMBINING
TRANSFORMATIONS

A C R O S T O T A L S A M P L E	Mono Sub-sample	Grade 4	Male $\bar{x} = 30.67$ SD = 10.25
		$\bar{x} = 33.83$	Female $\bar{x} = 37.00$ SD = 14.32
		SD = 12.60	
	$\bar{x} = 37.15$ SD = 11.71	Grade 6	Male $\bar{x} = 39.08$ SD = 11.29
		$\bar{x} = 40.46$	Female $\bar{x} = 41.83$ SD = 8.63
		SD = 9.93	
	B-G Sub-sample	Grade 4	Male $\bar{x} = 27.92$ SD = 9.67
		$\bar{x} = 31.71$	Female $\bar{x} = 35.50$ SD = 16.21
		SD = 13.61	
$\bar{x} = 35.94$ SD = 14.84	Grade 6	Male $\bar{x} = 31.17$ SD = 9.26	
	$\bar{x} = 40.17$	Female $\bar{x} = 49.17$ SD = 14.59	
	SD = 15.08		
N = 144 $\bar{x} = 34.80$ SD = 12.97	Grade 4	Male $\bar{x} = 29.67$ SD = 12.62	
	$\bar{x} = 30.54$	Female $\bar{x} = 31.42$ SD = 12.49	
	SD = 12.31		
$\bar{x} = 31.31$ SD = 11.63	Grade 6	Male $\bar{x} = 33.25$ SD = 12.95	
	$\bar{x} = 32.08$	Female $\bar{x} = 30.92$ SD = 9.36	
	SD = 11.11		

The data indicate the Monolingual group writing more sentence-combining transformations than either of the Bilingual groups. However, the greatest differential occurs between the B-G and B-F groups. The lower score for the B-F group is accounted for mainly by the paucity of transformations occurring in the grade six female sub-group. The B-G grade six females, on the other hand, wrote the highest number of sentence-combining transformations of all the sub-groups in the sample. The grade four and six females of the B-G sub-sample show a very high variability.

The analysis of variance for number of sentence-combining transformations is shown in Table 4:16

TABLE 4:16
ANALYSIS OF VARIANCE FOR NUMBER OF SENTENCE-COMBINING TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	910.500	455.250	3.14*
Grade	1	1106.016	1106.016	7.64**
Com x Gr	2	307.641	153.820	1.06
Sex	1	1162.078	1162.078	8.03**
Com x Sex	2	1049.907	524.953	3.63*
Gr x Sex	1	7.078	7.078	0.05
Com x Gr x Sex	2	407.016	203.508	1.41
Within cells	132	19113.301	144.798	

* Significance at .05 level

** Significance at .01 level

After examining the descriptive data, it is not surprising that an analysis of variance shows a significant difference for the three main effects: community at the .05 level favouring the Monolingual community; grade at the .01 level favouring grade six; and sex at the .01 level favouring the females. A significant interaction occurs for community by sex at the .05 level. The interaction can be explained by a slight superiority of females in the B-G community over Monolingual females, and the vast difference between B-G and Monolingual males favouring the latter.

Data showing performance of ability levels in writing sentence-combining transformations appear in Table 4:17.

TABLE 4:17

DESCRIPTIVE DATA FOR NUMBER OF SENTENCE-COMBINING TRANSFORMATIONS AMONG ABILITY LEVELS

Ability level	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
High	39.98	12.58	41.13	12.56	40.00	15.41	38.73	9.38
Middle	34.04	11.95	37.35	8.85	34.12	15.27	31.00	10.96
Low	30.05	12.78	32.67	12.74	33.27	13.66	23.79	10.15

Across the sample there is a fairly uniform decrease in number of sentence-combining transformations from level to level in descending order. The differential among subsamples is slight across high ability levels, slightly more pronounced in the middle ability level, and irregular

in the low ability level where the Monolingual and B-G sub-samples are very close but the B-F sub-sample drops markedly.

Table 4:18 shows the analysis of variance for the number of sentence-combining transformations written by the three ability levels.

TABLE 4:18

ANALYSIS OF VARIANCE FOR NUMBER OF SENTENCE-COMBINING TRANSFORMATIONS AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	919.750	459.875	3.02*
Ability	2	2430.358	1215.179	7.99**
Com x Ability	4	348.332	87.083	0.57
Within cells	135	20536.969	152.126	

* Significance at .05 level

** Significance at .01 level

The table shows the ability levels to be significantly different at the .01 level in production of sentence-combining transformations favouring the high ability level.

Although there is little variation in the number of T-units written by the various groups in the sample, as was shown in Table 4:01, a calculation was made of how many sentence-combining transformations per T-unit were written by each group. The data resulting from these calculations

appear in Table 4:19.

TABLE 4:19

DESCRIPTIVE DATA FOR NUMBER OF SENTENCE-COMBINING
TRANSFORMATIONS PER T-UNIT ACROSS
SAMPLE AND AMONG SUB-SAMPLES

Source	Sample	Mono	B-G	B-F
Sub-samples		1.27	1.18	1.02
Grade Four	1.08			
Male		1.15	1.07	0.99
Female		1.24	1.15	0.93
Grade Six	1.22			
Male		1.31	1.06	1.14
Female		1.38	1.37	1.03
Male	1.12			
Female	1.18			

The ratios shown in the table substantiate the inferences drawn from the descriptive data (Tables 4:15 and 4:16). One interesting difference is evident. The B-G grade six females wrote a higher number of sentence-combining transformations than the Monolingual grade six females but since the two groups wrote an unequal number of T-units, the former comparison is not as accurate as this ratio which shows them almost equal.

Number of T-units beginning with co-ordinating conjunctions.

Table 4:20 presents the descriptive data for the number of T-units beginning with co-ordinating conjunctions.

TABLE 4:20

DESCRIPTIVE DATA FOR T-UNITS BEGINNING WITH
CO-ORDINATING CONJUNCTIONS

A C R O S S T O T A L S A M P L E	Mono Sub-sample $\bar{x} = 7.35$ SD = 4.69	Grade 4 $\bar{x} = 6.25$ SD = 4.46	Male $\bar{x} = 4.29$ SD = 2.81
			Female $\bar{x} = 7.58$ SD = 5.47
		Grade 6 $\bar{x} = 8.46$ SD = 4.75	Male $\bar{x} = 9.25$ SD = 5.64
			Female $\bar{x} = 7.67$ SD = 3.73
	B-G Sub-sample $\bar{x} = 7.81$ SD = 4.34	Grade 4 $\bar{x} = 7.46$ SD = 4.44	Male $\bar{x} = 7.50$ SD = 3.63
			Female $\bar{x} = 7.42$ SD = 5.30
		Grade 6 $\bar{x} = 8.17$ SD = 4.30	Male $\bar{x} = 7.17$ SD = 3.64
			Female $\bar{x} = 9.17$ SD = 4.82
	B-F Sub-sample $\bar{x} = 9.08$ SD = 4.70	Grade 4 $\bar{x} = 9.83$ SD = 5.98	Male $\bar{x} = 8.50$ SD = 4.08
			Female $\bar{x} = 11.17$ SD = 7.37
		Grade 6 $\bar{x} = 8.33$ SD = 2.87	Male $\bar{x} = 9.08$ SD = 3.18
			Female $\bar{x} = 7.58$ SD = 2.43
N = 144 $\bar{x} = 7.92$ SD = 4.48			

Very little difference is evident in the performance of the sub-samples and the corresponding sub-groups. The B-F sub-sample shows a noticeably higher frequency generally and especially in the grade four female sub-group. There is also evidence of high variability within the B-F sub-sample. The grade four female group has the highest mean and the highest standard deviation in the whole sample. The grade four males of the Monolingual sub-sample have a very low mean and variability.

The results of an analysis of variance test for the number of T-units beginning with co-ordinating conjunctions are shown in Table 4:21.

TABLE 4:21

ANALYSIS OF VARIANCE FOR T-UNITS BEGINNING WITH
CO-ORDINATING CONJUNCTIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	77.042	38.521	1.86
Grade	1	8.024	8.024	0.39
Com x Gr	2	85.520	41.760	2.02
Sex	1	17.361	17.361	0.84
Com x Sex	2	1.266	0.633	0.03
Gr x Sex	1	40.116	40.116	1.94
Com x Gr x Sex	2	79.178	39.589	1.91
Within cells	132	2730.501	20.686	

No significant differences are indicated from the table.

The descriptive data relating to the performance of ability tertiles in the number of T-units beginning with co-ordinating conjunctions are presented in Table 4:22.

TABLE 4:22

DESCRIPTIVE DATA FOR NUMBER OF T-UNITS BEGINNING
WITH CO-ORDINATING CONJUNCTIONS
ACROSS AND AMONG ABILITY LEVELS

Ability level	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
High	7.94	4.07	6.50	3.92	8.06	3.34	9.33	4.69
Middle	8.33	4.49	8.00	4.54	8.44	4.79	8.53	4.41
Low	7.95	5.34	7.53	5.71	6.87	4.94	9.57	5.35

A surprising similarity in both variation and variability occurs across the sample and among sub-samples. Except in the B-F sub-sample, the middle ability level wrote slightly more T-units beginning with co-ordinating conjunctions than did the low and high ability levels.

Table 4:23 presents the analysis of variance for the number of T-units beginning with co-ordinating conjunctions among ability levels.

TABLE 4:23

ANALYSIS OF VARIANCE FOR T-UNITS BEGINNING WITH
CO-ORDINATING CONJUNCTIONS AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	84.355	42.178	1.96
Ability	2	3.787	1.894	0.09
Com x Ability	4	45.825	11.456	0.53
Within cells	135	2909.845	21.554	

No significant differences appear in the table.

Because there was a slight variation in the number of T-units written by the various sub-groups, the ratio of T-units beginning with co-ordinating conjunctions per T-unit was computed. The results are shown in Table 4:24

TABLE 4:24

DESCRIPTIVE DATA FOR NUMBER OF T-UNITS BEGINNING WITH
CO-ORDINATING CONJUNCTIONS, PER T-UNIT
ACROSS AND AMONG SUB-SAMPLES

Source	Sample	Mono	B-G	B-F
Sub-samples		.25	.22	.30
Grade Four	.27			
Male		.19	.29	.28
Female		.25	.24	.33
Grade Six	.27			
Male		.31	.24	.31
Female		.25	.26	.25
Male	.27			
Female	.27			

The ratios across sample by grade and by sex are seen to be perfectly uniform. However, in the sub-groups there is some variation. The B-F sub-sample has a higher ratio than the other sub-samples. The lowest extreme occurs in the Monolingual grade four group and the highest extreme occurs in the B-F grade four female group. The ratio presented in this table represents one of the negative indices of language maturity.

Number of mazes. Because so few mazes occurred in the total sample there was insufficient data to enable a valid comparison on this index.

Summary table of major linguistic indices. Table 4:25 provides a summary of data relating to the major linguistic indices of language development.

TABLE 4:25

SUMMARY TABLE OF MEANS AND RATIOS ACROSS
THE SAMPLE AND AMONG SUB-SAMPLES
FOR MAJOR LINGUISTIC INDICES

Source	Sample	Mono	B-G	B-F
Mean number of T-units	30.15	29.17	30.56	30.71
**Mean length of T-units.....	8.51	8.92	8.55	8.05
Number of subordinate clauses....	10.80	11.42	11.35	9.62
Subordinate clause index.....	1.35	1.39	1.36	1.31
Mean clause length	6.26	6.41	6.23	6.13
*Number of sent-comb. transformations...	34.80	37.15	35.94	31.31
Number of sent-comb. transf. per T-unit	1.16	1.27	1.18	1.02
Number of T-units beg. with co. conj.	8.08	7.35	7.81	9.08
Number of T-units beg. with co.conj. per T-unit.....	0.28	0.25	0.22	0.30

** Significant at .01 level for community variable
* Significant at .05 level for community variable

Syntactic Structures

The relative mean frequencies of main-clause patterns are listed in rank order of occurrence in Table 4:26.

TABLE 4:26

MEAN FREQUENCIES OF MAIN-CLAUSE PATTERNS
ACROSS SAMPLE AND AMONG SUB-SAMPLES

Main-clause pattern (abbrev.)	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
SV	12.06	4.50	11.29	3.91	12.62	4.42	12.25	5.09
SVO	11.53	4.41	11.04	4.24	11.81	5.09	11.73	3.86
SVCa	2.11	1.66	2.17	1.89	2.08	1.56	2.08	1.56
SVIO	1.22	1.16	1.48	1.15	1.12	1.12	1.17	1.19
THERE VS	1.08	1.12	0.88	1.02	0.81	1.00	1.54	1.20
SVCn	0.92	0.95	1.12	1.00	0.96	0.99	0.69	0.80
PASSIVE	0.25	0.71	0.25	0.60	0.21	0.50	0.29	0.91
COMMAND	0.24	0.63	0.19	0.57	0.15	0.50	0.38	0.76
PARTIAL	0.15	0.50	0.10	0.59	0.17	0.43	0.17	0.48
QUESTION	0.13	0.65	0.04	0.20	0.08	0.35	0.27	0.05
IT VS	0.08	0.36	0.10	0.37	0.08	0.28	0.06	0.43
ADV VS	0.05	0.22	0.02	0.14	0.06	0.24	0.06	0.24
SVOCn	0.04	0.20	0.06	0.24	0.04	0.20	0.02	0.14
SVOCa	0.03	0.18	0.02	0.14	0.06	0.24	0.02	0.14

Only the first six main-clause patterns listed in the table occurred in sufficient numbers to allow valid comparisons among the sub-samples. More detailed analysis of these follows.

Subject-Verb Pattern (SV). Table 4:27 presents an analysis of variance for the SV main-clause pattern data.

TABLE 4:27

ANALYSIS OF VARIANCE FOR SUBJECT-VERB
MAIN-CLAUSE PATTERN

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	45.393	22.697	1.16
Grade	1	10.020	10.020	0.51
Com x Gr	2	70.064	35.032	1.80
Sex	1	69.440	69.440	3.56
Com x Sex	2	41.060	20.530	1.05
Gr x Sex	1	26.710	26.710	1.37
Com x Gr x Sex	2	63.724	31.862	1.63
Within cells	132	2573.167	19.494	

No significant differences occur although the sex variable approaches significance at the .05 level favouring the females.

Table 4:28 presents an analysis of variance for SV main-clause patterns occurring among ability levels.

TABLE 4:28

ANALYSIS OF VARIANCE FOR SV MAIN-CLAUSE PATTERN
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	45.270	22.635	1.10
Ability	2	39.052	19.526	0.95
Com x Ability	4	42.782	10.695	0.52
Within cells	135	2770.078	20.519	

Table 4:28 indicates no significant differences among ability levels.

Subject-Verb-Object Pattern (SVO). The analysis of variance results for the SVO main-clause pattern data are shown in Table 4:29.

TABLE 4:29
ANALYSIS OF VARIANCE FOR SUBJECT-VERB-OBJECT
MAIN-CLAUSE PATTERN

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	17.183	8.591	0.46
Grade	1	48.993	48.993	2.61
Com x Gr	2	38.543	19.272	1.02
Sex	1	66.683	66.683	3.55
Com x Sex	2	37.767	18.883	1.00
Gr x Sex	1	0.264	0.264	0.01
Com x Gr x Sex	2	88.298	44.149	2.35
Within cells	132	2482.166	18.804	

No significant differences are indicated from the table. However, a definite trend toward significance for grade, favouring grade six, is evident. The apparent trend for sex favouring the females is not valid because they wrote significantly more T-units than the males across the total sample.

The analysis of variance for occurrence of SVO main clauses among ability levels appears in Table 4:30.

TABLE 4:30

ANALYSIS OF VARIANCE FOR SVO MAIN-CLAUSE PATTERN
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	18.879	9.439	0.48
Ability	2	103.264	51.632	2.64
Com x Ability	4	17.738	4.435	0.23
Within cells	135	2643.652	19.583	

The apparent trend favouring the high ability level must be minimized because of the differential in the number of T-units produced by the three ability levels (See Table 4:03).

Subject-Verb-Adjective Complement Pattern (SVCa).

The SVCa pattern is third in rank order of occurrence but its frequency is only about one-fifth of the SV and SVO patterns.

Table 4:31 presents an analysis of variance for SVCa main-clause patterns occurring in the sample.

TABLE 4:31

ANALYSIS OF VARIANCE FOR SUBJECT-VERB-ADJECTIVE
COMPLEMENT MAIN-CLAUSE PATTERN

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	0.224	0.112	0.04
Grade	1	7.113	7.113	2.61
Com x Gr	2	3.721	1.860	0.68
Sex	1	1.002	1.002	0.37
Com x Sex	2	8.165	4.082	1.50
Gr x Sex	1	0.998	0.998	0.37
Com x Gr x Sex	2	15.169	7.584	2.78
Within cells	132	359.833	2.726	

A definite trend favouring grade six is evident.

Table 4:32 presents an analysis of variance for the SVCa main-clause pattern occurrences among ability levels.

TABLE 4:32

ANALYSIS OF VARIANCE FOR SVCa MAIN-CLAUSE PATTERN
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	0.361	0.180	0.06
Ability	2	14.169	7.085	2.49
Com x Ability	4	2.359	0.590	0.21
Within cells	135	384.118	2.845	

The table indicates no significant differences for the SVCa main-clause pattern.

Subject-Verb-Indirect Object-Direct Object Pattern (SVIO).

Table 4:33 indicates the analysis of variance for SVIO patterns.

TABLE 4:33

ANALYSIS OF VARIANCE FOR SUBJECT-INDIRECT OBJECT-DIRECT OBJECT MAIN-CLAUSE PATTERN

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	5.264	2.632	1.98
Grade	1	0.111	0.111	0.08
Com x Gr	2	2.680	1.340	1.01
Sex	1	0.000	0.000	0.00
Com x Sex	2	2.041	1.021	0.77
Gr x Sex	1	1.778	1.778	1.34
Com x Gr x Sex	2	5.848	2.924	2.20
Within cells	132	175.167		

A slight trend favouring the Monolingual community is evident from the table.

The analysis of variance for SVIO pattern occurrences among ability levels is presented in Table 4:34

TABLE 4:34

ANALYSIS OF VARIANCE FOR SVIO MAIN-CLAUSE PATTERN
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	5.778	2.889	2.20
Ability	2	10.393	5.197	3.96*
Com x Ability	4	1.361	0.340	0.26
Within cells	135	177.181	1.313	

*Significant at .05 level

The significant difference at the .05 level favouring the high ability group must again be seen in the light of Table 4:03.

There-Verb-Subject Pattern (There VS). Table 4:35 presents an analysis of variance for There VS patterns.

TABLE 4:35

ANALYSIS OF VARIANCE FOR THERE-VERB-SUBJECT
MAIN-CLAUSE PATTERN

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	15.681	7.840	6.68**
Grade	1	0.007	0.007	0.01
Com x Gr	2	3.597	1.797	1.53
Sex	1	2.007	2.007	1.71
Com x Sex	2	1.014	0.507	0.43
Gr x Sex	1	0.007	0.007	0.01
Com x Gr x Sex	2	2.930	1.465	1.25
Within cells	132	154.917	1.174	

** Significant at .01 level

The table indicates a significant difference at the .01 level among communities. The reason for the difference is evident from the data of Table 4:25 which shows the B-F community writing a markedly higher number of There VS patterns than the other two communities. This finding represents a pattern of occurrence which is in reverse of the usual order for communities in this study.

Table 4:36 presents an analysis of variance for the There VS pattern of main clauses among ability levels.

TABLE 4:36

ANALYSIS OF VARIANCE FOR THERE VS MAIN-CLAUSE PATTERN
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	15.252	7.626	7.07**
Ability	2	7.098	3.549	3.29*
Com x Ability	4	12.368	3.092	2.87*
Within cells	135	145.654	1.079	

** Significance at .01 level

* Significance at .05 level

The table indicates a significant differential among ability levels. The low ability level wrote a notably higher number of There VS patterns than the other two ability groups. Reference to the descriptive data further helps to explain the significant interaction of community by ability at the .05 level. The increase in frequency of

There VS patterns in the B-F community from low to middle to high ability levels followed a trend which varied inversely from that of the other two communities.

Subject-Verb-Complement (SVCn). The analysis of variance for SVCn main-clause pattern occurrences is presented in Table 4:37.

TABLE 4:37

ANALYSIS OF VARIANCE FOR SUBJECT-VERB-COMPLEMENT
MAIN-CLAUSE PATTERN

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	4.681	2.340	2.82
Grade	1	7.563	7.563	9.12**
Com x Gr	2	3.042	1.521	1.83
Sex	1	1.174	1.174	1.42
Com x Sex	2	0.264	0.132	0.16
Gr x Sex	1	1.174	1.174	1.42
Com x Gr x Sex	2	0.847	0.424	0.51
Within cells	132	109.417	0.829	

** Significant at .01 level

A significant difference at the .01 level occurs between grades favouring the grade six subjects. Differences among communities approach the .05 level of significance favouring the Monolingual community.

Table 4:37 presents an analysis of variance for the SVCn main-clause pattern occurring among ability levels.

TABLE 4:38
ANALYSIS OF VARIANCE FOR SVCn PATTERN
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	4.405	2.203	2.55
Ability	2	7.232	3.616	4.19*
Com x Ability	4	0.695	0.174	0.20
Within cells	135	116.626	0.864	

* Significant at .05 level

The differential among ability levels is shown to be significant at the .05 level favouring the high ability level. The significance level is high enough to offset the advantage of the high ability level in having written more T-units than the other ability levels (See Table 4:03). A definite trend is indicated for the community variable and favours the Monolingual community.

Number of Sentence-Combining Transformations

The data relating to total number of sentence-combining transformations have been presented in tables 4:15 to 4:19.

In this section the sub-classifications of sentence-combining transformations will be presented to facilitate a closer examination of specific variables related to specific linguistic functions:

I Nominal Transformations

a) Type

(1) Headed Nominal Transformations

- (a) Noun + Noun (N+N)
- (b) Noun + Adjective (N+Adj)
- (c) Noun + Possessive (N+Poss)
- (d) Noun + Relative Clause (N+Rel.Cl.)
- (e) Noun + \emptyset Relative Clause (N+ \emptyset Rel.Cl.)
- (f) Noun + Prepositional Phrase (N+P.P.)
- (g) Noun + Infinitive Phrase (N+Inf.P.)
- (h) Noun + Participial Phrase (N+Pt.P.)
- (i) Noun + Adverb (N+Adv)

(2) Non-headed Nominal Transformations

- (a) Noun Clause (N.C.)
- (b) Noun Clause - Direct Discourse (N.C.D.D.)
- (c) Prepositional Phrase (P.P.)
- (d) Infinitive Phrase (Inf.P.)
- (e) Infinitive Phrase + Subject (I.P.+S)
- (f) Gerund Phrase (G.P.)

b) Function

- (1) Subject (Subj)
- (2) Object (Obj)
- (3) Indirect Object (Ind. Obj.)
- (4) Subject Complement (Subj. Comp.)
- (5) Object Complement (Obj. Comp.)
- (6) Appositive (Appos)
- (7) Object of Preposition (Obj. of Prep.)
- (8) Adverbial Noun (Adv. Noun)

Table 4:39 presents the descriptive data for nominal transformations occurring across the total sample and among sub-samples. The transformations are listed in rank order of occurrence for each sub-classification.

TABLE 4:39

SUMMARY OF DESCRIPTIVE DATA FOR NOMINAL TRANSFORMATIONS AND THEIR FUNCTIONS
IN RANK ORDER OF OCCURRENCE

Source	Sample \bar{x}	SD	\bar{x}	Mono SD	\bar{x}	B-G \bar{x}	SD	B-F \bar{x}	SD
NOMINAL TFS.	22.48	9.14	23.56	8.05	22.73	10.27	21.15	8.98	
Type									
Headed									
N+Poss.	4.33	2.31	4.52	2.13	4.06	2.46	4.42	2.35	
N+Adj.	2.53	2.04	3.12	2.22	2.25	1.67	2.21	2.10	
N+Rel.Cl.	1.53	1.55	1.60	1.41	1.29	1.75	1.69	1.48	
N+P.P.	1.19	1.17	1.19	0.98	1.25	1.25	1.15	1.27	
N+Pt.P	0.88	1.05	0.88	0.94	1.06	1.24	0.71	0.87	
N+N	0.40	0.96	0.50	1.01	0.38	1.10	0.31	0.72	
N+Ø Rel.Cl.	0.26	0.54	0.23	0.47	0.31	0.62	0.23	0.52	
N+Inf.P.	0.12	0.54	0.04	0.20	0.23	0.86	0.08	0.28	
N+Adv.	0.05	0.22	0.02	0.14	0.10	0.31	0.02	0.14	
Non-headed									
N.C.	3.74	2.61	4.54	2.58	4.33	2.46	2.35	2.23	
Inf.P.	2.20	1.92	2.10	1.61	2.79	2.34	1.71	1.60	
I.P.+S.	1.92	1.65	1.98	1.60	1.60	1.69	2.19	1.65	
N.C.D.D.	1.69	2.28	1.17	1.89	1.40	2.10	2.50	2.61	
P.P.	0.85	1.13	1.06	1.17	0.71	1.22	0.79	0.97	
G.P.	0.53	0.90	0.46	0.80	0.71	1.01	0.42	0.87	
Function									
Obj.	13.56	5.97	13.73	5.56	14.52	6.83	12.44	5.34	
Subj.	4.51	2.95	4.73	2.61	4.33	3.47	4.46	2.76	
Obj. of Prep.	2.27	1.87	2.62	1.94	2.06	1.85	2.12	1.82	
Subj. Comp.	0.90	1.20	1.08	1.05	0.77	1.22	0.83	1.31	
Ind. Obj.	0.80	0.73	0.90	0.86	0.63	0.70	0.88	0.61	
Obj. Comp.	0.14	0.45	0.19	0.49	0.15	0.50	0.08	0.35	
Appos.	0.13	0.38	0.17	0.43	0.15	0.41	0.08	0.28	
Adv. Noun	0.07	0.28	0.04	0.20	0.13	0.39	0.04	0.20	

It is of interest to examine in greater detail those categories which produced sufficient data for valid comparison. The order of presentation will follow the order in Table 4:39.

Nominal Transformations

a) Headed Nominals

- (1) Noun + Possessive
- (2) Noun + Adjective
- (3) Noun + Relative Clause
- (4) Noun + Prepositional Phrase

b) Non-headed Nominals

- (1) Noun Clause
- (2) Infinitive Phrase
- (3) Infinitive Phrase + Subject
- (4) Noun Clause - Direct Discourse

c) Functions of Nominal Transformations

- (1) Object
- (2) Subject
- (3) Object of Preposition

Table 4:40 presents the descriptive data for number of nominal sentence-combining transformations occurring across the sample and among sub-samples.

TABLE 4:40

DESCRIPTIVE DATA FOR NUMBER OF NOMINAL
SENTENCE-COMBINING TRANSFORMATIONS

A C R O S S T O T A L S A M P L E	Mono Sub-sample	Grade 4	Male $\bar{x} = 19.42$ SD = 6.58
		$\bar{x} = 21.21$	Female $\bar{x} = 23.00$ SD = 8.64
		Grade 6	Male $\bar{x} = 24.50$ SD = 8.57
		$\bar{x} = 25.92$	Female $\bar{x} = 27.33$ SD = 7.06
	$\bar{x} = 23.56$		
	SD = 8.05		
	B-G Sub-sample	Grade 4	Male $\bar{x} = 16.17$ SD = 5.92
		$\bar{x} = 18.67$	Female $\bar{x} = 21.17$ SD = 9.82
		Grade 6	Male $\bar{x} = 20.50$ SD = 5.73
		$\bar{x} = 26.79$	Female $\bar{x} = 33.08$ SD = 10.71
	$\bar{x} = 22.73$		
	SD = 10.27		
B-F Sub-sample	Grade 4	Male $\bar{x} = 19.92$ SD = 10.23	
	$\bar{x} = 21.25$	Female $\bar{x} = 22.58$ SD = 8.77	
	Grade 6	Male $\bar{x} = 22.83$ SD = 10.34	
	$\bar{x} = 21.04$	Female $\bar{x} = 19.25$ SD = 6.70	
$\bar{x} = 21.15$			
SD = 8.98			
N = 144			
$\bar{x} = 22.34$			
SD = 9.33			

The table indicates a slight superiority for the Monolingual community though the variability is greater for the Bilingual communities, especially the B-G community. The high mean of the B-G grade six female group indicate a superiority in producing nominal transformations. In every community except the B-F community, there was a decided increase in the use of nominal transformations with grade level.

Table 4:41 presents the analysis of variance for nominal sentence-combining transformations among three communities and between grades and sexes.

TABLE 4:41
ANALYSIS OF VARIANCE FOR NOMINAL TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	140.203	70.102	0.95
Grade	1	556.172	556.172	7.51**
Com x Gr	2	348.328	174.164	2.35
Sex	1	612.563	612.563	8.27**
Com x Sex	2	625.125	312.563	4.22*
Gr x Sex	1	5.016	5.016	0.07
Com x Gr x Sex	2	370.594	185.297	2.50
Within cells	132	9778.289	74.078	

** Significance at .01 level

* Significance at .05 level

Table 4:41 indicates a significant difference at the .01 level for grade favouring grade six, and a significant difference at the .01 level for sex favouring the females. Some of the large differential between the sexes must be ascribed to the greater volubility of the females in producing T-units. The interaction between community and sex can be explained by a reversal in the B-F community of a decided female superiority in both of the other communities. The B-F grade six female recorded an extremely low number of nominal transformations with an accompanying low variability.

The analysis of variance for nominal transformations among ability levels is recorded in Table 4:42.

TABLE 4:42

ANALYSIS OF VARIANCE FOR NOMINAL TRANSFORMATIONS
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	134.000	67.000	0.87
Ability	2	1084.134	542.067	7.05**
Com x Ability	4	427.490	106.873	1.39
Within cells	135	10373.719	76.842	

** Significance at .01 level

The table indicates a significant difference at the .01 level among ability levels favouring the high tertile. It

may be recalled that the low ability level wrote fewer T-units than the middle and high levels which were fairly comparable in the number of T-units they produced. Reference to descriptive data reveals that the major difference in writing nominal transformations among ability levels occurs between the middle and high levels.

Headed Nominals

Noun + Possessive (N+Poss). Table 4:43 presents the analysis of variance for N+Poss transformations.

TABLE 4:43

ANALYSIS OF VARIANCE FOR N+POSS TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	5.542	2.771	0.58
Grade	1	8.029	8.029	1.69
Com x Gr	2	46.933	23.467	4.95**
Sex	1	21.779	21.779	4.59*
Com x Sex	2	44.683	22.342	4.71**
Gr x Sex	1	1.363	1.363	0.29
Com x Gr x Sex	2	9.841	4.921	1.04
Within cells	132	625.833	4.741	

* Significance at .05 level

** Significance at .01 level

The females wrote significantly (at the .05 level) more Noun + Possessive transformations than the males, though it must be remembered that females also wrote more T-units initially. Reference to the descriptive data shows that the performance of the B-F grade six females helps to account for both interactions noted in the table. They decisively reversed the pattern of the other two communities in which grade six subjects were superior to grade four subjects and grade six females were superior to grade six males.

Noun + Adjective (N+Adj). Table 4:44 presents the analysis of variance for N+Adj transformations.

TABLE 4:44

ANALYSIS OF VARIANCE FOR N+ADJ TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	25.724	12.862	3.52*
Grade	1	9.001	9.001	2.47
Com x Gr	2	34.666	17.333	4.75**
Sex	1	4.001	4.001	1.10
Com x Sex	2	18.166	9.083	2.49
Gr x Sex	1	5.444	5.444	1.49
Com x Gr x Sex	2	16.889	8.445	2.31
Within cells	132	481.999	3.652	

* Significance at .05 level

** Significance at .01 level

The significant difference for community at the .05 level results from the superior performance in this category of the Monolingual community over the Bilingual communities. A trend toward superiority of the grade six children is evident. The significant interaction is owing to high performance by the Monolingual grade six females and the countering low performance of the B-G and B-F grade six females.

Noun + Relative Clause (N+Rel.Cl.). The results of an analysis of variance test for N+Rel.Cl. transformations are shown in Table 4:45.

TABLE 4:45

ANALYSIS OF VARIANCE FOR N+REL CLAUSE TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	4.181	2.091	0.91
Grade	1	16.001	16.001	7.00**
Com x Gr	2	9.874	4.937	2.16
Sex	1	0.445	0.445	0.19
Com x Sex	2	7.930	3.965	1.73
Gr x Sex	1	0.999	0.999	0.44
Com x Gr x Sex	2	2.626	1.313	0.57
Within cells	132	301.833	2.287	

** Significance at .01 level

The table indicates a significant difference at the .01 level for grade favouring grade six.

Noun + Prepositional Phrase (N+P.P.). Table 4:46 presents an analysis of variance for N+P.P. transformations.

TABLE 4:46
ANALYSIS OF VARIANCE FOR N+PP. TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	0.264	0.132	0.10
Grade	1	10.028	10.028	7.68**
Com x Gr	2	3.014	1.507	1.15
Sex	1	0.695	0.695	0.53
Com x Sex	2	3.430	1.715	1.31
Gr x Sex	1	0.999	0.999	0.77
Com x Gr x Sex	2	3.792	1.896	1.45
Within cells	132	172.333	1.306	

** Significance at .01 level

As in the N+Rel.Cl. category a significant difference at the .01 level for grade, favouring grade six, occurred in the writing of the N+P.P. transformations.

Non-headed Nominals

Noun Clause. Table 4:47 presents the analysis of variance for Noun Clause transformations.

TABLE 4:47
ANALYSIS OF VARIANCE FOR NOUN CLAUSE TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	139.933	69.967	12.08**
Grade	1	0.342	0.342	0.06
Com x Gr	2	12.098	6.049	1.04
Sex	1	31.175	31.175	5.38*
Com x Sex	2	8.181	4.091	0.71
Gr x Sex	1	10.565	10.565	1.82
Com x Gr x Sex	2	4.621	2.310	0.40
Within cells	132	764.583	5.792	

** Significant at .01 level

* Significant at .05 level

A significant difference at the .01 level is shown for community favouring the Monolingual and B-G communities over the B-F community. The females wrote significantly (at the .05 level) more noun clauses than the males, but they also wrote significantly more T-units initially.

The Noun Clause transformation occurrences were tested for variance among ability tertiles. The analysis of variance is presented in Table 4:48.

TABLE 4:48

ANALYSIS OF VARIANCE FOR N.C. TRANSFORMATIONS
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	135.452	67.726	11.86**
Ability	2	57.257	28.628	5.02**
Com x Ability	4	16.153	4.037	0.71
Within cells	135	770.600	5.708	

** Significance at .01 level

The table indicates a significant differential at the .01 level among ability levels favouring the high ability tertile. The descriptive data show that there was a uniform increase of noun clause transformations from low to middle to high ability levels.

Infinitive Phrase (Inf.P.). Table 4:49 presents the analysis of variance results for Infinitive Phrase transformations.

TABLE 4:49

ANALYSIS OF VARIANCE FOR INF.P. TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	28.848	14.424	4.53*
Grade	1	16.674	16.674	5.24*
Com x Gr	2	20.597	10.298	3.23*
Sex	1	5.063	5.063	1.59
Com x Sex	2	6.125	3.062	0.96
Gr x Sex	1	0.840	0.840	0.26
Com x Gr x Sex	2	30.598	15.299	4.80**
Within cells	132	420.416	3.185	

* Significance at .05 level

** Significance at .01 level

The significant differential at the .05 level for the community variable favoured the B-G community. Grade six was favoured at the .05 level of significance over grade four in the number of Infinitive Phrase transformations produced. The community by grade interaction occurred mainly because of the decided variation of the B-G community from the highly similar pattern of the other two communities. Contrasted to the comparable means of both grade levels in the latter two communities, the B-G grade six group wrote considerably more Infinitive Phrase transformations than the grade four group. The community by grade by sex interaction can be explained by two noticeable reversals of the

female and grade six superiority. Both the B-G and B-F communities showed males surpassing females in grades four and six respectively. Furthermore, B-F grade four females surpassed the B-F grade six females.

Infinitive Phrase + Subject (I.P.+S). Table 4:50 presents the analysis of variance for I.P.+S transformations.

TABLE 4:50
ANALYSIS OF VARIANCE FOR I.P.+S. TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	8.390	4.195	1.71
Grade	1	21.008	21.008	8.55**
Com x Gr	2	6.721	3.361	1.37
Sex	1	9.508	9.508	3.87*
Com x Sex	2	10.721	5.361	2.18
Gr x Sex	1	0.839	0.839	0.34
Com x Gr x Sex	2	8.723	4.362	1.78
Within cells	132	324.250	2.456	

** Significant at .01 level

* Significant at .05 level

The table indicates a significant difference at the .01 level for grade, favouring grade six. The significant difference at the .05 level for sex, favouring females is again minimized by the differential in the number of T-units produced (See Table 4:01).

Noun Clause - Direct Discourse (N.C.D.D.). Table 4:51 presents an analysis of variance for Noun Clause - Direct Discourse transformations.

TABLE 4:51

ANALYSIS OF VARIANCE FOR N.C.D.D. TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	48.792	24.396	5.15**
Grade	1	27.563	27.563	5.82*
Com x Gr	2	6.125	3.062	0.65
Sex	1	5.063	5.063	1.07
Com x Sex	2	12.041	6.021	1.27
Gr x Sex	1	10.562	10.562	2.23
Com x Gr x Sex	2	10.042	5.021	1.06
Within cells	132	624.749	4.733	

* Significance at .05 level

** Significance at .01 level

The table indicates significant differences occurring for community and grade. The frequency of N.C.D.D. transformations were in reverse order from the Noun Clause occurrences, i.e., the B-F group wrote the highest number of N.C.D.D. transformations followed by the B-G group and then the Monolingual group. The grade four subjects wrote significantly more N.C.D.D. transformations than the grade six subjects.

The analysis of variance results for N.C.D.D. transformations among ability levels are presented in Table 4:52.

TABLE 4:52
ANALYSIS OF VARIANCE FOR N.C.D.D. TRANSFORMATIONS
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	38.495	19.248	4.35*
Ability	2	29.948	14.974	3.39*
Com x Ability	4	31.702	7.926	1.79
Within cells	135	596.891	4.421	

* Significance at .05 level

The table indicates a .05 level of significance for the ability variable differential. The pattern of differences is in reverse order of the usual occurrences for nominal transformations and thus favours the low ability level on a negative index.

Functions of Nominal Transformations

Object function. Table 4:53 presents an analysis of variance for nominal transformations employing the object function.

TABLE 4:53
ANALYSIS OF VARIANCE FOR OBJECT FUNCTION

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	106.166	53.083	1.65
Grade	1	162.551	162.551	5.06*
Com x Gr	2	136.506	68.253	2.12
Sex	1	242.833	242.833	7.56**
Com x Sex	2	128.728	64.364	2.00
Gr x Sex	1	6.691	6.691	0.21
Com x Gr x Sex	2	63.721	31.860	0.99
Within cells	132	4242.234	32.138	

* Significance at .05 level

** Significance at .01 level

Definite trends are indicated by the table. The main effects of grade and sex show significant differences at the .05 and .01 levels respectively. Across the sample grade sixes and females employed significantly more object functions than their counterparts.

Subject function. Table 4:54 presents the analysis of variance for nominal transformations used in the subject function.

TABLE 4:54
ANALYSIS OF VARIANCE FOR SUBJECT FUNCTION

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	3.943	1.967	0.24
Grade	1	10.564	10.564	1.31
Com x Gr	2	51.542	25.771	3.19*
Sex	1	19.510	19.510	2.42
Com x Sex	2	42.513	21.256	2.63
Gr x Sex	1	3.063	3.063	0.38
Com x Gr x Sex	2	49.287	24.643	3.05*
Within cells	132	1065.583	8.073	

* Significance at .05 level

No clear trends are evident from the table. The B-F grade four group used the subject function more often than the grade six group and thus, in reversing the pattern set by the other two communities, caused an interaction of community by grade. The community by grade by sex interaction is caused by the vast superiority of the B-G grade six females over the males and the opposing pattern of grade six male superiority in the other two communities.

Object of Preposition function. Table 4:55 presents the analysis of variance for nominal transformations used as objects of prepositions.

TABLE 4:55
ANALYSIS OF VARIANCE FOR OBJECT OF PREPOSITION

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	9.126	4.563	1.35
Grade	1	14.064	14.064	4.17*
Com x Gr	2	1.040	0.520	0.15
Sex	1	3.675	3.675	1.09
Com x Sex	2	24.179	12.090	3.58*
Gr x Sex	1	0.061	0.061	0.02
Com x Gr x Sex	2	4.877	2.438	0.72
Within cells	132	445.416	3.374	

* Significance at .05 level

The significant difference at the .05 level between grade levels favours grade six. The reason for the interaction is that, unlike the other communities, the B-F community shows the males as superior to the females in the number of object of preposition functions employed.

Adverbial Sentence-Combining Transformations

I Number of Adverbial Transformations:

a) Adverb Clauses

- (1) Time
- (2) Place
- (3) Manner
- (4) Cause
- (5) Condition
- (6) Comparison
- (7) Adjective Complement

b) Sentence Adverbial

- (1) Absolute Construction
- (2) Interjected Clause

c) Adverbial Phrase

Table 4:56 presents descriptive data for adverbial transformations across the total sample and among sub-samples. The transformations are listed in rank order of occurrence for each sub-classification.

TABLE 4:56
 SUMMARY OF DESCRIPTIVE DATA FOR ADVERBIAL TRANSFORMATIONS
 LISTED IN RANK ORDER FOR SUB-CLASSIFICATIONS

Source	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
ADVERBIAL STRUCTURES								
Adverb Clause	5.35	3.29	5.37	3.19	6.23	3.81	4.44	2.57
Time	3.67	2.83	4.02	3.01	4.15	3.14	2.83	2.11
Cause	2.22	2.06	2.48	2.11	2.60	2.24	1.56	1.66
Adjective Comp.	0.53	0.74	0.56	0.74	0.54	0.74	0.48	0.74
Condition	0.24	0.52	0.31	0.51	0.19	0.49	0.23	0.56
Comparison	0.23	0.59	0.17	0.43	0.31	0.80	0.21	0.46
Place	0.22	0.49	0.10	0.31	0.35	0.35	0.64	0.19
Manner	0.08	0.34	0.08	0.45	0.08	0.28	0.06	0.24
Sentence Adverbial	0.08	0.29	0.08	0.28	0.10	0.37	0.04	0.20
Absolute Const.	0.02	0.14	0.00	0.00	0.04	0.20	0.02	0.14
Interjected Cl.	0.01	0.12	0.02	0.14	0.00	0.00	0.02	0.14
Adverbial Phrase	1.70	1.45	1.56	1.47	1.98	1.41	1.56	1.46

The summary table indicates that the following categories presented sufficient data to warrant further examination and comparison:

Adverbial Transformations

a) Adverb Clauses

(1) Adverb Clauses of Time

b) Adverbial Phrases

Table 4:57 presents descriptive data for number of adverbial transformations occurring across the sample, among linguistic communities, between grades four and six, and between the sexes.

TABLE 4:57

DESCRIPTIVE DATA FOR NUMBER OF ADVERBIAL TRANSFORMATIONS

A C R O S S T O T A L S A M P L E	Mono Sub-sample $\bar{x} = 5.37$ SD = 3.19	Grade 4	Male $\bar{x} = 4.33$ SD = 2.90
		$\bar{x} = 5.29$ SD = 3.59	Female $\bar{x} = 6.25$ SD = 4.07
		Grade 6	Male $\bar{x} = 4.75$ SD = 2.80
		$\bar{x} = 5.46$ SD = 2.81	Female $\bar{x} = 6.17$ SD = 2.76
	B-G Sub-sample $\bar{x} = 6.23$ SD = 3.81	Grade 4	Male $\bar{x} = 5.17$ SD = 3.19
		$\bar{x} = 6.46$ SD = 4.24	Female $\bar{x} = 7.75$ SD = 4.88
		Grade 6	Male $\bar{x} = 4.58$ SD = 2.71
		$\bar{x} = 6.00$ SD = 3.39	Female $\bar{x} = 7.42$ SD = 3.50
	B-F Sub-sample $\bar{x} = 4.44$ SD = 2.57	Grade 4	Male $\bar{x} = 4.17$ SD = 2.37
		$\bar{x} = 3.54$ SD = 2.23	Female $\bar{x} = 2.92$ SD = 1.98
		Grade 6	Male $\bar{x} = 5.17$ SD = 3.10
		$\bar{x} = 5.33$ SD = 2.62	Female $\bar{x} = 5.50$ SD = 2.15
N = 144 $\bar{x} = 5.35$ SD = 3.29			

Table 4:57 indicates that the B-G sub-sample wrote the highest number of adverbial transformations with correspondingly highest standard deviation. The Monolingual sub-sample, which wrote the highest number of sentence-combining transformations as well as the highest number of nominal transformations, follows closely the B-G sub-sample in the number of adverbial transformations. The B-F sub-sample produced the lowest number of adverbial transformations. In all grades except B-F grade four, the females exceeded the males in the production of adverbial transformations.

Table 4:58 presents the analysis of variance for number of adverbial transformations occurring among communities, between grades, and between sexes.

TABLE 4:58

ANALYSIS OF VARIANCE FOR NUMBER OF
ADVERBIAL TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	77.098	38.549	3.93*
Grade	1	9.003	9.003	0.92
Com x Gr	2	32.376	16.188	1.65
Sex	1	61.362	61.362	6.25*
Com x Sex	2	62.517	31.258	3.18*
Gr x Sex	1	1.778	1.778	0.18
Com x Gr x Sex	2	6.677	3.338	0.34
Within cells	132	1295.833	9.817	

* Significance at .05 level

The analysis of variance indicates a significant difference among communities at the .05 level. Reference to descriptive data reveals a fairly uniform decrease in mean number of adverbial transformations from B-G to Monolingual to B-F sub-samples. The sex variable approaches the .01 level of significance favouring the females. The interaction of community and sex is explained by the great superiority of B-F grade four males over grade four females. This varies inversely from the pattern of the other communities.

Table 4:59 presents the analysis of variance results obtained for number of adverbial transformations produced among ability levels.

TABLE 4:59

ANALYSIS OF VARIANCE FOR ADVERBIAL TRANSFORMATIONS
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	75.242	37.621	3.98*
Ability	2	153.052	76.526	8.10**
Com x Ability	4	42.910	10.727	1.14
Within cells	135	1274.757	9.443	

* Significance at .05 level

** Significance at .01 level

The significance at the .01 level for the ability variable asserts the relative superiority of the high

over middle over low ability levels, with the biggest differential occurring between the middle and low tertiles. Again, this may, in part, be a reflection of the differential in number of T-units written originally by the respective levels.

Table 4:60 presents the analysis of variance for number of adverb clauses produced by the sample among sub-samples, between grade levels, and between sexes.

TABLE 4:60
ANALYSIS OF VARIANCE FOR NUMBER OF ADVERB CLAUSES

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	50.377	25.189	3.36*
Grade	1	14.695	14.695	1.96
Com x Gr	2	11.265	5.632	0.75
Sex	1	9.001	9.001	1.20
Com x Sex	2	60.792	30.396	4.05*
Gr x Sex	1	0.030	0.030	0.00
Com x Gr x Sex	2	9.177	4.589	0.61
Within cells	132	990.666	7.505	

* Significance at .05 level

Because the adverb clause category is the major component of the adverbial structures classification, it is not surprising that the analysis of variance of

the two categories is highly similar. The B-G community is favoured while the B-F community scores significantly lower than the Monolingual community. There is a greater difference between grades than between sexes in the writing of adverb clauses. The interaction of community and sex is again caused by the B-F grade six females writing substantially fewer adverb clauses than the males, a reversal from the pattern in the other communities.

Table 4:61 presents the analysis of variance for adverb clause transformations among ability levels.

TABLE 4:61
ANALYSIS OF VARIANCE FOR ADVERB CLAUSES
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	50.822	25.411	3.58 *
Ability	2	115.045	57.523	8.10 **
Com x Ability	4	23.354	5.837	0.82
Within cells	135	958.358	7.099	

* Significance at .05 level
** Significance at .01 level

The table indicates a significant difference at the .01 level among ability levels. The difference again favours the high ability level but this time there is a uniform difference among the three levels.

Within the adverb clause category, only the adverb clause of time was produced in sufficient quantity to permit further valid comparison of groups within the sample. Table 4:62 presents the analysis of variance for this variable.

TABLE 4:62

ANALYSIS OF VARIANCE FOR ADVERB CLAUSE OF TIME

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	31.057	15.529	3.80*
Grade	1	3.064	3.064	0.75
Com x Gr	2	12.665	6.332	1.55
Sex	1	0.009	0.009	0.00
Com x Sex	2	13.721	6.860	1.68
Gr x Sex	1	0.561	0.561	0.14
Com x Gr x Sex	2	5.168	2.584	0.63
Within cells	132	540.082	4.092	

* Significance at .05 level

The significant differences among communities at the .05 level follows the pattern in which there is a gradual decrease in occurrence from the B-G to Monolingual to B-F communities with the least variability in the B-F community.

An analysis of variance for the adverb clause of time produced among ability levels is presented in Table 4:63.

TABLE 4:63

ANALYSIS OF VARIANCE FOR ADVERB CLAUSE OF TIME
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	30.560	15.280	4.19*
Ability	2	60.855	30.427	8.35**
Com x Ability	4	22.169	5.542	1.52
Within cells	135	491.829	3.643	

* Significance at .05 level
** Significance at .01 level

The significant difference at the .01 level for the ability variable favours the high ability group. Reference to descriptive data shows the differential between the middle and low groups only slightly greater than the difference between high and middle groups.

Adverbial Phrase Transformations. This category includes the adverbial infinitive and the adverbial prepositional phrase. Table 4:64 presents the analysis of variance for the number of adverbial phrases produced in the sample.

TABLE 4:64
ANALYSIS OF VARIANCE FOR ADVERBIAL PHRASES

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	5.556	2.778	1.39
Grade	1	0.063	0.063	0.03
Com x Gr	2	5.166	2.583	1.29
Sex	1	18.063	18.063	9.04**
Com x Sex	2	6.500	3.250	1.63
Gr x Sex	1	0.173	0.173	0.09
Com x Gr x Sex	2	0.890	0.445	0.22
Within cells	132	263.750	1.998	

** Significance at .01 level

The only main effect indicating a significant difference is sex, at the .01 level, favouring the females.

Table 4:65 presents the analysis of variance for adverbial phrases produced among ability levels.

TABLE 4:65
ANALYSIS OF VARIANCE FOR ADVERBIAL PHRASES
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	5.631	2.816	1.34
Ability	2	1.165	0.583	0.28
Com x Ability	4	10.656	2.664	1.27
Within cells	135	283.479	2.100	

No significant differences are indicated for the ability variable in the relative frequencies of the adverbial phrase transformation.

Co-ordinate Sentence-Combining Transformations

I Number of Co-ordinate Transformations:

- a) Co-ordinate Modifiers
 - (1) Adjectival (Adj.)
 - (2) Adverbial (Adv.)
- b) Co-ordinate Nominals (Co-Nom.)
- c) Co-ordinate Predicates (Co-Pred.)
 - (1) Verb Pattern (V)
 - (2) Verb-Object Pattern (VO)
 - (3) Verb-Complement Pattern (VCn)
 - (4) Verb-Adjective Complement Pattern (VCa)
 - (5) Verb-Indirect Object-Object Pattern (VIO)

Table 4:66 presents descriptive data for number of co-ordinate transformations across the total sample and among sub-samples. The transformations are listed in rank order of occurrence for each sub-classification.

TABLE 4:66

SUMMARY OF DESCRIPTIVE DATA FOR CO-ORDINATE TRANSFORMATIONS
LISTED IN RANK ORDER FOR SUB-CLASSIFICATIONS

Source	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
CO-ORDINATE STR.	6.98	3.72	8.21	3.55	6.96	3.59	5.77	3.67
Modifiers	0.70	0.90	0.88	0.91	0.73	0.87	0.50	0.90
Adj.	0.44	0.78	0.73	0.98	0.23	0.47	0.38	0.73
Adv.	0.19	0.46	0.13	0.33	0.33	0.63	0.10	0.31
Co-Nom.	1.03	1.27	1.12	1.39	1.25	1.34	0.73	1.01
Co-Pred.	5.26	3.05	6.17	2.78	5.06	2.84	4.54	3.35
VO	2.25	1.81	2.75	1.66	2.21	1.89	1.79	1.79
V	1.92	1.52	2.21	1.57	1.90	1.29	1.65	1.64
VIO	0.82	1.07	0.81	1.20	0.81	0.96	0.83	1.06
VCa	0.14	0.44	0.23	0.52	0.08	0.40	0.10	0.37
VCn	0.03	0.22	0.04	0.20	0.00	0.00	0.06	0.32

The summary table indicates the following categories as having sufficient representation across the sample to enable further analysis.

Co-ordinate Transformations:

- a) Co-ordinate Nominals
- b) Co-ordinate Predicates
 - (1) Verb-Object Pattern
 - (2) Verb Pattern

Table 4:67 presents descriptive data relevant to the number of co-ordinate transformations produced.

TABLE 4:67

DESCRIPTIVE DATA FOR NUMBER OF
CO-ORDINATE TRANSFORMATIONS

A C R O S S T O T A L S A M P L E	Mono Sub-sample	Grade 4	Male	
			$\bar{x} = 6.92$ SD = 2.81	
		$\bar{x} = 7.33$ SD = 3.63	Female	
			$\bar{x} = 7.75$ SD = 4.39	
		$\bar{x} = 8.21$ SD = 3.55	Grade 6	Male
				$\bar{x} = 9.83$ SD = 3.27
	$\bar{x} = 9.08$ SD = 3.32		Female	
			$\bar{x} = 8.33$ SD = 3.34	
	B-G Sub-sample	Grade 4	Male	
			$\bar{x} = 6.58$ SD = 3.96	
		$\bar{x} = 6.58$ SD = 4.00	Female	
			$\bar{x} = 6.58$ SD = 4.21	
$\bar{x} = 6.96$ SD = 3.59		Grade 6	Male	
			$\bar{x} = 6.00$ SD = 2.89	
	$\bar{x} = 7.33$ SD = 3.17	Female		
		$\bar{x} = 8.67$ SD = 2.96		
B-F Sub-sample	Grade 4	Male		
		$\bar{x} = 5.58$ SD = 3.55		
	$\bar{x} = 5.83$ SD = 3.68	Female		
		$\bar{x} = 6.08$ SD = 3.94		
	$\bar{x} = 5.77$ SD = 3.67	Grade 6	Male	
			$\bar{x} = 5.25$ SD = 3.28	
$\bar{x} = 5.71$ SD = 3.75		Female		
		$\bar{x} = 6.17$ SD = 4.26		
N = 144				
$\bar{x} = 6.98$				
SD = 3.72				

The descriptive data table indicates a uniform decrease in number of co-ordinate structures produced, from the Monolingual to the B-G to the B-F community. Generally, the females produced more co-ordinate transformations than the males but there is one exception -- Monolingual grade six subjects. In the B-F community the grade four subjects produced slightly more co-ordinate structures than the grade six subjects.

Table 4:68 presents the analysis of variance for number of co-ordinate structures produced across the sample among communities, between grades four and six, and between sexes.

TABLE 4:68

ANALYSIS OF VARIANCE FOR NUMBER OF
CO-ORDINATE TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	142.623	71.312	5.46**
Grade	1	22.565	22.565	1.73
Com x Gr	2	21.126	10.563	0.81
Sex	1	11.672	11.672	0.89
Com x Sex	2	17.013	8.506	0.65
Gr x Sex	1	0.563	0.563	0.04
Com x Gr x Sex	2	37.629	18.815	1.44
Within cells	132	1723.751	13.059	

** Significance at .01 level

The analysis of variance indicates a significant difference among communities at the .01 level. The Monolingual community wrote the largest number of co-ordinate transformations. It was followed by the B-G community.

The analysis of variance results obtained for number of co-ordinate transformations among ability levels are presented in Table 4:69.

TABLE 4:69

ANALYSIS OF VARIANCE FOR CO-ORDINATE TRANSFORMATIONS
AMONG ABILITY LEVELS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	158.691	79.345	6.09**
Ability	2	24.293	12.147	0.93
Com x Ability	4	51.610	12.903	0.99
Within cells	135	1758.791	13.028	

** Significance at .01 level

The difference among ability levels is not significant for number of co-ordinate structures.

Co-ordinate nominals. Table 4:70 presents the analysis of variance for co-ordinate nominal transformations.

TABLE 4:70
ANALYSIS OF VARIANCE FOR NUMBER OF CO-ORDINATE
NOMINAL TRANSFORMATIONS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	7.097	3.549	2.40
Grade	1	4.340	4.430	2.93
Com x Gr	2	6.097	3.049	2.06
Sex	1	6.674	6.674	4.51*
Com x Sex	2	2.764	1.382	0.93
Gr x Sex	1	0.840	0.840	0.52
Com x Gr x Sex	2	7.764	3.882	2.62
Within cells	132	195.250	1.479	

* Significance at .05 level

Only the main effect of sex shows a significant difference at the .05 level favouring the females. However, both variables of community and grade are approaching a significant difference. These trends toward significance favour the B-G community and the grade six level.

Co-ordinate predicates. Table 4:71 indicates the analysis of variance for the number of co-ordinate predicates produced.

TABLE 4:71
ANALYSIS OF VARIANCE FOR NUMBER OF
CO-ORDINATE PREDICATES

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	66.010	33.050	3.63*
Grade	1	2.007	2.007	0.22
Com x Gr	2	17.353	8.676	0.95
Sex	1	2.007	2.007	0.22
Com x Sex	2	20.512	10.258	1.13
Gr x Sex	1	0.179	0.179	0.02
Com x Gr x Sex	2	22.087	11.044	1.21
Within cells	132	1203.250	9.116	

* Significance at .05 level

The significant differential for the community variable at the .05 level favouring the Monolingual community.

Table 4:72 presents the analysis of variance for the number of co-ordinate predicates with VO pattern.

TABLE 4:72
ANALYSIS OF VARIANCE FOR NUMBER OF
CO-ORDINATE PREDICATE VO PATTERNS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	22.168	11.084	3.44*
Grade	1	6.251	6.251	1.94
Com x Gr	2	6.165	3.083	0.96
Sex	1	3.363	3.363	1.04
Com x Sex	2	5.054	2.527	0.79
Gr x Sex	1	0.998	0.998	0.31
Com x Gr x Sex	2	0.168	0.084	0.03
Within cells	132	424.833	3.218	

* Significance at .05 level

As for the total number of co-ordinate structures, Table 4:68, the significant difference at the .05 level among communities for the VO pattern occurrence follows a regular decrease from the Monolingual to the B-G to the B-F community.

Table 4:73 presents the analysis of variance for the co-ordinate predicate V pattern occurrences.

TABLE 4:73
ANALYSIS OF VARIANCE FOR NUMBER OF
CO-ORDINATE PREDICATE V PATTERNS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	7.626	3.813	1.63
Grade	1	1.779	1.779	0.76
Com x Gr	2	3.179	1.590	0.68
Sex	1	4.696	4.696	2.01
Com x Sex	2	0.929	0.465	0.20
Gr x Sex	1	2.098	1.049	0.45
Com x Gr x Sex	2	2.098	1.049	0.45
Within cells	132	307.100	2.333	

Once again the pattern of differences among the communities parallels that of the total number of co-ordinate predicates, Table 4:68, but the differential is not significant in this sub-classification.

Dialectical Variations

Error Analysis. The following classification of errors was employed in this study.

- Class I Error: Misapplication of a transformation
- Class II Error: Use of one transformation when another is required.
- Class III Error: Use of a transformation when none is required
- Class IV Error: Omission of a required transformation
- Class V Error: Co-occurrence error

- a) Fragment
- b) Discourse
- c) Form
- d) Number
- e) Tense

Table 4:74 presents a summary of the total frequencies of errors which occurred across the sample and among the sub-samples for all the error classifications, listed in rank order of occurrence.

TABLE 4:74

SUMMARY OF ERRORS OCCURRING ACROSS TOTAL
SAMPLE AND AMONG SUB-SAMPLES

Class of error	Sample	Mono	B-G	B-F
V-Form	224	59	50	115
V-Discourse	164	37	50	77
V-Fragment	72	21	18	33
V-Tense	69	17	12	40
IV	43	23	10	10
V-Number	42	13	7	22
II	21	8	1	12
I	11	4	5	2
III	4	1	1	2
Totals	650	183	154	313

Although relatively few errors occurred, the table indicates certain trends. The preponderance of errors occurred in Class V with most of them falling into the "form" and "discourse" sub-classifications. The B-G community made the fewest errors in all but two categories (V-Discourse and I). The Monolingual community made slightly more errors than the B-G community but substantially fewer than the B-F community which made almost half of the total

number of errors. In only two categories (IV and I) did the B-F community have the least number of errors. The pattern, in which the B-G community shows a slight superiority over the Monolingual community and considerable superiority over the B-F community, is repeated for six of the nine types of errors, e.g., V-Form, V-Discourse, V-Fragment, V-Tense, V-Number, and II.

Table 4:75 presents descriptive statistics for the error classifications listed in rank order of occurrence.

TABLE 4:75
 SUMMARY OF DESCRIPTIVE DATA FOR ERROR ANALYSIS
 LISTED IN RANK ORDER OF OCCURRENCE

Error Class	Sample		Mono		B-G		B-F	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
V - Form	1.57	1.65	1.25	1.41	1.06	1.14	2.40	2.00
V - Discourse	1.14	1.85	0.77	1.34	1.04	1.79	1.60	2.26
V - Fragment	0.50	0.95	0.44	1.09	0.38	0.53	0.69	1.09
V - Tense	0.48	0.85	0.35	0.70	0.25	0.53	0.83	1.12
IV - Number	0.30	0.77	0.48	1.11	0.21	0.54	0.21	0.46
V - Number	0.29	0.74	0.27	0.68	0.15	0.62	0.46	0.87
II	0.15	0.39	0.17	0.43	0.02	0.14	0.25	0.48
I	0.08	0.27	0.08	0.28	0.10	0.31	0.04	0.20
III	0.03	0.16	0.02	0.14	0.02	0.14	0.04	0.20

Analysis of variance tests were done for all the error classifications but only the "form" and "discourse" classifications yielded sufficient data to allow valid comparisons among the sub-samples.

V-Form Error. Table 4:76 presents the analysis of variance for the V-Form error occurrences across the sample and among sub-samples.

TABLE 4:76
ANALYSIS OF VARIANCE FOR NUMBER OF V-FORM ERRORS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	50.014	25.007	10.30**
Grade	1	6.250	6.250	2.57
Com x Gr	2	3.792	1.896	0.78
Sex	1	4.695	4.695	1.93
Com x Sex	2	4.847	2.424	1.00
Gr x Sex	1	0.694	0.694	0.29
Com x Gr x Sex	2	0.515	0.257	0.11
Within cells	132	320.500	2.428	

** Significance at .01 level

A significant difference at the .01 level is indicated for community in favour of the B-G community. Reference to Table 4:74 shows that the greatest difference

occurred between the Monolingual and the B-F communities. A trend toward significance occurs for the grade variable, favouring the grade six group, and for the sex variable, favouring the female group.

V-Discourse Error. Table 4:77 presents the analysis of variance for the V-Discourse error occurrences across the sample and among sub-samples.

TABLE 4:77
ANALYSIS OF VARIANCE FOR NUMBER OF V-DISCOURSE ERRORS

Source of Variation	D.F.	Sum of Squares	Mean Square	F-Ratio
Community	2	17.347	8.674	2.56
Grade	1	4.694	4.694	1.39
Com x Gr	2	3.181	1.590	0.47
Sex	1	1.778	1.778	0.52
Com x Sex	2	12.931	6.465	1.91
Gr x Sex	1	0.250	0.250	0.07
Com x Gr x Sex	2	4.042	2.021	0.60
Within cells	132	446.100	3.386	

The table does not indicate any significant differences but a trend appears for the community variable. The trend favours the Monolingual community very slightly over the B-G community and more markedly over the B-F community.

Unidiomatic Expressions. Another kind of dialectical variation which became apparent to the investigator in the course of the language analysis was the tendency, especially for the bilingual subjects, to transliterate idiomatic usage characteristic of their mother tongue into their English expression. This produced some interesting samples of unidiomatic English.

These data were too subjective to allow for measurement and a sampling was, therefore, only listed.

Bilingual-German Community:

By the time they are till the canoe . . .

The fisherman is a bit of a poor husband.

Almer tied it on a rock.

Those two were an end ahead.

They went yet for a longer ride.

He got mad over him.

They tied the string lose.

He all the time went back.

Bilingual-French Community:

On the going they saw a canoe.

She wasn't still satisfied.

The man brought them at home.

They made it at the end.

She wanted for her husband to leave him go.

Monolingual-English Community:

The two bears were gonna lose him.

They seen a canoe.

If it would of tipped they would of . . .

The samples of unidiomatic expressions were collected mainly from the grade four level. Fewer examples of these errors occurred at the grade six level.

Aside from the obvious transliterations, the bilingual communities demonstrated some difficulty with the idiomatic use of prepositions in English. The few non-standard expressions listed for the Monolingual community are examples of careless usage.

Clausal Patterns. Tables 4:25 to 4:37 have already presented a comprehensive analysis of the clausal patterns occurring in the three communities of the sample.

The only syntactic pattern which shows a significant dialectical variation among linguistic communities is the "There VS" pattern (See Table 4:25). Little difference occurs between the Monolingual and the B-G communities, but a much greater use is made of the "There VS" pattern by the B-F community.

CHAPTER V

FINDINGS AND CONCLUSIONS

The specific purposes of this study were to answer the following questions:

1. To what extent do children of varying ethnic backgrounds exhibit differences in:
 - a) number and length of T-units
 - b) mean length of clauses
 - c) number of subordinate clauses
 - d) number of sentence-combining transformations
 - e) number of T-units initiated by co-ordinating conjunctions
 - f) number of mazes
 - g) diversity of syntactic structures
2. Is linguistic maturity a function of the subject's:
 - a) ethno-linguistic background
 - b) grade level
 - c) sex
 - d) intelligence
3. To what extent do children of varying ethnic backgrounds exhibit dialectical patterns in writing which deviate from standard English usage, and what are some of the specific deviations?

I. FINDINGS

Number of T-units

1. There was no significant difference among the three communities (Monolingual; Bilingual-German; Bilingual-French) in number of T-units written.

2. There was no significant difference between the two grade levels (four and six) in number of T-units written.

3. There was a significant difference for the sex variable at the .01 level, favouring the females, in number of T-units produced.

4. There was a significant difference at the .05 level in number of T-units produced among the three ability levels (low, middle, high). With increase in ability level there was an increase in number of T-units written. However, a greater difference occurred between low and middle levels than between middle and high levels.

Mean Length of T-units

1. There was a significant difference in mean length of T-units at .01 level among linguistic communities. The differential favoured the Monolingual community.

2. There was a significant difference in mean length of T-units at the .01 level between grade levels, favouring grade six subjects.

3. There was no significant difference in mean length of T-units for the sex variable.

4. There was a significant difference in mean length of T-units at the .05 level among ability levels. This difference favoured the high tertile. The greatest difference occurred between the middle and high levels.

Mean Clause Length

A test of significant proportions did not reveal a significant difference in mean clause length among communities. However, a clear trend favouring the Monolingual community is evident.

Number of Subordinate Clauses

1. There was no significant difference in number of subordinate clauses produced among communities.

2. There was no significant difference between grade levels in number of subordinate clauses.

3. There was a significant difference at the .05 level, favouring females, in number of subordinate clauses.

4. There was a significant difference at the .01 level among ability levels in number of subordinate clauses. The difference favoured the high ability level.

5. A test of significance of proportions did not reveal a significant difference among communities for the subordinate clause ratio.

Number of Sentence-Combining Transformations

1. There was a significant difference at the .05 level among linguistic communities in number of sentence-combining transformations, favouring the Monolingual community.

2. There was a significant difference at the .01 level between grade levels in number of sentence-combining transformations, favouring grade six.

3. There was a significant difference at the .01 level between sexes in number of sentence-combining transformations, favouring the female group.

4. There was a significant difference at the .01 level among ability levels in number of sentence-combining transformations, favouring the high ability level.

Number of Nominal Sentence-Combining Transformations

1. There was no significant difference among the linguistic communities in number of nominal transformations.

2. There was a significant difference at the .01 level between grade levels, favouring grade six, in number of nominal transformations.

3. There was a significant difference at the .01 level between sexes, favouring females.

4. There was a significant difference at the .01 level among ability levels, favouring the high level.

Sub-classifications of Nominal Transformations. The following significant findings were noted:

1. Differential for community variable:

a) significant at the .05 level, favoured the Monolingual community for number of Noun + Adjective sentence-combining transformations.

b) significant at the .01 level, favoured the Monolingual community for number of Noun Clause transformations.

c) significant at the .05 level, favoured the Bilingual-German community for number of Infinitive Phrase transformations.

d) significant at the .01 level, favoured the Bilingual-French community on a negative index for the number of Noun Clause - Direct Discourse sentence-combining transformation.

2. Differential for grade level variable:

a) significant at the .01 level, favoured grade six for number of Noun + Relative Clause transformations.

b) significant at the .01 level, favoured grade six for number of Noun + Prepositional Phrase transformations.

c) significant at the .05 level, favoured grade six for number of Infinitive Phrase transformations.

d) significant at the .01 level, favoured the

grade six level for number of Infinitive Phrase + Subject transformations.

e) significant at the .05 level, favoured grade four on a negative index for number of Noun Clause-Direct Discourse transformations.

3. Differential for sex variable:

a) significant at the .05 level, favoured females for Noun + Possessive transformations.

b) significant at the .05 level, favoured females for number of Noun Clause transformations.

4. Differential for ability variable: (Only the Noun Clause and Noun Clause-Direct Discourse categories were tested on the ability variable.)

a) significant at the .01 level, favoured high ability level for number of Noun Clause transformations.

b) significant at the .05 level, favoured low ability level on a negative index, in number of Noun Clause-Direct Discourse transformations.

Functions of nominal transformations

1. There was no significant difference among communities for any of the function categories.

2. There was a significant difference at the .05 level, favouring grade six, in number of object functions.

3. There was a significant difference at the .01 level, favouring females, in number of object functions.

4. There was no significant difference among ability levels for any of the function categories.

Number of Adverbial Sentence-Combining Transformations

1. There was a significant difference at the .05 level among linguistic communities, favouring the Bilingual-German community, in number of adverbial transformations.

2. There was no significant difference between grade levels in number of adverbial transformations produced.

3. There was a significant difference at the .05 level between sexes, favouring females, in number of adverbial transformations.

4. There was a significant difference at the .01 level, favouring the high level, among ability levels.

Sub-classifications of adverbial sentence-combining transformations. The following significant findings were noted:

1. Differential for community variable:

a) significant at the .05 level, favoured the Bilingual-German community for number of Adverb Clause transformations.

b) significant difference at the .05 level, favoured the Bilingual-German community in number of adverb clauses of time.

2. Differential for grade level variable:

There was no significant difference for any sub-classification of adverbial transformations.

3. Differential for sex variable:

There was a significant difference at the .01 level, favouring females, in number of adverbial phrases.

4. Differential for ability variable:

a) significant at the .01 level, favoured the high level, in number of adverb clauses.

b) significant at the .01 level, favoured the high level, in number of adverb clauses of time.

Number of Co-ordinate Sentence-Combining Transformations

1. There was a significant difference at the .01 level, favouring the Monolingual community, among linguistic communities, in number of co-ordinate structures.

2. There was no significant difference between grade levels in number of co-ordinate transformations.

3. There was no significant difference between sexes in number of co-ordinate transformations.

4. There was no significant difference among ability levels in number of co-ordinate transformations.

Sub-classifications of co-ordinate transformations.

The following significant findings were noted:

1. Differential for community variable:

a) significant at the .05 level, favoured the

Monolingual community, in number of co-ordinate predicates.

b) significant at the .05 level, favoured the Monolingual community, in number of co-ordinate predicate VO patterns.

A definite trend was noted among communities, favouring the Bilingual-German community, in number of co-ordinate nominal transformations.

2. Differential for grade level variable:

There was no significant difference for any of the sub-classifications of co-ordinate transformations between grade levels.

3. Differential for sex variable:

A definite trend was noted, favouring grade six, in number of co-ordinate nominal transformations.

4. Differential for ability variable:

There was no significant difference for any of the sub-classifications of co-ordinate transformations among ability levels.

Number of T-units Initiated by Co-ordinating Conjunctions

There was no significant difference for any of the variables in number of T-units introduced by co-ordinating conjunctions.

Number of Mazes

There was an insufficient occurrence of mazes to warrant valid comparisons among sub-samples.

Diversity of Syntactic Structures

1. Of the six main-clause patterns which provided adequate data for valid comparison among linguistic communities (SV, SVO, SVCa, SVIO, There VS, SVCn) only the There VS pattern showed a significant difference among communities at the .01 level, favouring the Bilingual-French community, on a negative index.

2. Of the six main-clause patterns listed for analysis, only the SVCn pattern showed a significant difference between grade levels, favouring grade six. The SVO and SVCa patterns showed a definite trend approaching significance, favouring grade six.

3. No significant difference occurred between the sexes for any of the clause patterns listed for analysis.

4. Of the six main-clause patterns listed for analysis, the There VS pattern showed a significant difference at the .05 level on a negative index, favouring the low ability level. The SVIO and SVCn patterns showed a significant difference at the .05 level, favouring the high ability level, on a positive index.

Dialectical Variations

Error Analysis. The only significant difference noted was among communities at the .01 level, favouring the Bilingual-French community, on a negative index in number of Class V-Form errors.

No significant difference was noted for Class V-Discourse error.

Although none of the other error classifications yielded sufficient data for valid comparison by analysis of variance, some trends were noted from a summary table (4:74) showing number of errors.

Subjects of the Bilingual-French community made the most errors in seven of the nine classifications and cumulatively accounted for 313 of the 650 errors made in the total sample.

Subjects of the Bilingual-German community made the fewest errors in seven of the nine error classifications and made a total of 154 of the total errors in the sample.

Subjects of the Monolingual community made the fewest errors in two of the nine error classifications and made a total of 183 errors.

Unidiomatic Expressions

Differences among the linguistic communities in

producing unidiomatic expressions consisted mainly of transliterations from the native language of the bilingual subjects and non-standard use of verbs and prepositions by the monolingual subjects. A preponderance of errors occurred in the grade four level.

Clausal Patterns

The few significant differences found among communities for clausal patterns have been listed under "Diversity of Syntactic Structures".

Summary Table of Significant Findings

Table 5:01 presents a summary of all the significant findings indicated by analysis of variance tests for differentials in the production of the various linguistic elements.

TABLE 5:01

SUMMARY TABLE OF SIGNIFICANT FINDINGS

Syntactic Elements	Variables			
	Community	Grade	Sex	Ability
No. of T-units			**F	*H
Mean length T-unit	**Mono	**6		*H
No. sub. clauses			**F	**H
No. of sentence-combining tfs	*Mono	**6	**F	**H
Nominal tfs		**6	**F	**H
N+Poss			*F	n.t.
N+Adj	*Mono			n.t.
N+Rel.Cl.		**6		n.t.
N+P.P.		**6		n.t.
Noun Cl.	**Mono		*F	**H
Inf.P.	*B-G	*6		n.t.
I.P.+S		**6		n.t.
N.C.D.D.	** <u>B-F</u>	* <u>4</u>		* <u>L</u>
Function:				
Object		*6	**F	
Obj.Prep.		*6		
Adverbial tfs	*B-G		*F	**H
Adverb Cl.	*B-G			**H
Time	*B-G			**H
Adv. Phrase			**F	
Co-ordinate Str.	**Mono			
Co-Nominals			*F	
Co-Preds	*Mono			
VO	*Mono			
Main-clause patt.				
There VS	** <u>B-F</u>			*L
SVIO				*H
SVCn		**6		*H
Errors				
V-Form	** <u>B-F</u>			n.t.
Mono	Monolingual community			
B-G	Bilingual-German			
B-F	Bilingual-French			
n.t.	Not tested			
	**	.01 level significance		
	*	.05 level significance		
	<u> </u>	negative index		

II. CONCLUSIONS

The major purpose of this study was to investigate differences in written language development of grade four and six children from three varying ethno-linguistic communities in Manitoba.

The study was not designed to discover new indices in measurement of language maturity or even to corroborate the effectiveness of modern techniques. However, it was of interest to the investigator to observe whether or not the findings of this study did, in fact, verify the validity of the indices of language development used by recent researchers.

Implicit in the major objective was an interest in examining some of the factors that influence language development. Especially pertinent to this study was the factor of ethno-linguistic background. Other variables such as grade level, sex, and ability were also considered.

A discussion of the conclusions will be related to three specific questions:

1. What are the differences among the ethno-linguistic communities in this study?
2. What differences are evident in the language development of monolingual and bilingual children?
3. To what degree do variables of ethno-linguistic background, grade level, sex, and intelligence, influence language development?

Differences Among Ethno-linguistic Communities

Hunt (1965) asserted that increase in T-unit length, in number of subordinate clauses, and in mean length of clauses were closely related to linguistic maturity. O'Donnell, Griffin and Norris (1967) supported Hunt's findings and added that the number of sentence-combining transformations occurring in children's language signalled the degree of maturity attained. This, of course, reflects the findings of both Strickland (1962) and Loban (1963) who discovered that the achievement of flexibility in the manipulation of syntactical patterns proved to be a measure of effectiveness and control of language.

The findings of this study tended to corroborate these indices as measures of maturity. Grade sixes, as well as the high ability levels in this study, wrote significantly longer T-units and significantly more sentence-combining transformations than the grade fours and the low ability levels. Though the subordinate clause index was only slightly higher for grade six, the high ability group wrote significantly more subordinate clauses than the low ability group. Grade six subjects also displayed a marked superiority in mean clause length over grade four subjects.

Considering these results and the fact that the Monolingual community showed marked superiority in all

these indices of language development, it seems reasonable to conclude that of the three communities studied, the Monolingual community possesses the greatest facility in written English and the greatest control of syntactic complexity. The Bilingual-German community follows the Monolingual community closely in the subordinate clause index and in number of sentence-combining transformations produced. The Bilingual-French community ranks lowest in all of the indices.

The relative linguistic control of syntax indicated on the positive indices of language development is partially substantiated by the measures obtained on the negative indices. In the number of T-units introduced by co-ordinating conjunctions, the B-F community exceeded the others, but, as indicated in Table 4:25, the Monolingual community followed and the B-G community had the least occurrences. This same pattern applied in the number of errors and in the number of mazes (Appendix A gives data for the latter.)

Therefore, it appears from looking at the positive and negative indices of written linguistic development, that the Monolingual community demonstrates considerably greater syntactic maturity than the B-F community and somewhat greater than the B-G community. The B-G community demonstrated the greatest syntactic maturity in all the

classifications considered on the negative index.

This suggests that, although the Monolingual community showed a higher competence in use of English syntactic structures, they, nevertheless, made more errors than the B-G subjects. On the other hand, the B-F subjects showed the least syntactic control and also made the most errors.

This study indicated a high degree of similarity among the communities in writing main-clause patterns. The only significant variation occurred in the "There VS" pattern. That the B-F subjects wrote significantly more of these patterns than the other subjects might well substantiate their syntactic weakness or, at least, their tendency to repeat a stereotyped pattern of expression.

It is of interest to note that the relative frequency of main-clause patterns (Table 4:26) is very similar to findings of O'Donnell (1967) in his sample of elementary school children. Though the SVO pattern occurred more often than the SV pattern in his sample, these two patterns occurred about eighty per cent of the time in both studies.

This study showed a much greater syntactic diversity among communities in the sub-classifications of sentence-combining transformations than in main-clause patterns.

The Monolingual community indicated significant superiority in the Noun + Adjective, and the Noun Clause categories of the nominal transformations. The Noun Clause

transformation, which is considered a significant index of language maturity by O'Donnell (1967), also showed a significant difference favouring high ability levels and may thus provide additional support to the conclusion already stated concerning Monolingual superiority.

It is true, however, that the Monolingual community had a higher mean deviation I.Q. score on the Pintner Ability Tests. Their superiority in language ability, may, in part, be ascribed to this ability differential.

The B-G community, which did not lag far behind the Monolingual community and which had a lower mean ability rating, may well be almost comparable in competence to the Monolingual community in their written language.

The Noun Clause-Direct Discourse transformation appears to be another negative index of language development. Grade four subjects exceeded grade six subjects in the production of this category and the low ability levels wrote significantly more of these transformations than the higher ability levels. That the B-F community wrote significantly more of these clauses than the other two communities once again points to a weakness in syntactic flexibility. Perhaps it only indicates that the B-F subjects were more inclined to imitate the dialogue of the filmstrip.

Hunt (1965), in his study, found a significant increase in frequency of adverbial transformations with

increase in grade level. The B-G community showed the greatest dexterity in writing adverbial transformations. The high ability levels also produced these constructions with the greatest frequency. This finding points up an interesting dialectical variation which may be influenced by transfer from the characteristic syntax of the mother tongue. It also points out an important variation from the over-all pattern of linguistic maturity among the three communities in this study.

Other studies (Hunt, 1965; O'Donnell, Griffin and Norris, 1967) have shown that the production of co-ordinate transformations does not provide a consistent index of language development. The findings of this study support that assertion. However, the Monolingual community employed more of these transformations than either of the bilingual communities.

Differences in Language Development between Monolinguals and Bilinguals

There is a paucity of research comparing syntactic performance between monolingual and bilingual children, yet there is a lack of agreement in the findings of the few studies that have been made. As has already been reported in the related literature chapter of this study, Carrow (1957) found monolinguals, except those in the high ability level, superior to bilinguals in linguistic ability.

This confirmed earlier studies (Arsenian, 1945; Smith, 1949). Other studies, however, produced evidence which showed bilinguals superior in language achievement (e.g., Pintner, 1932; Anastasi, 1953; Weinreich, 1953).

This study was not designed to concentrate on the monolingual-bilingual dichotomy. But since one of the three communities studied was monolingual and the other two bilingual, there was opportunity to observe differences and similarities on a dichotomous basis.

In all of the recognized major indices of language development, the monolinguals surpassed the bilinguals.

The amount of linguistic data, and the complexity of linguistic interrelationships, make a superficial statement indicating relative maturity of one group over another group in a global assessment of linguistic ability somewhat precarious. Close inspection of the raw data indicates, for example, some definite trends within the sub-samples which contradict the over-all survey. One of the bilingual groups (B-G grade six females) surpassed the Monolingual groups in all the major linguistic indices and obtained the lowest frequencies on all the negative indices. Another sub-group (B-F grade six females) demonstrated the opposite extreme.

The reason for these sharp variations from the larger pattern are not known. Certain variables, not specifically

examined in this study, might well have had a strong influence on differential language development. The extent of community activities conducted in English, the amount of exposure in the home or school environment to adult English communication, and the possibility that these variables have exerted a cumulative retardation (Deutsch, 1960) or acceleration of a child's language development, may, in part, account for varying linguistic maturity.

Apart from these trends and the variables not considered in detail, the over-all pattern appears to be clear. If the indices used in this study are valid, then the monolingual subjects can be said to have achieved a greater syntactic maturity than the bilingual subjects.

Factors Which Influence Language Development

Ethnic-linguistic Background. Researchers quoted earlier in this study asserted that minority status, as well as low socio-economic status, is closely related to poor language functioning (Bernstein, 1960; Deutsch, 1964; Ruddell and Graves, 1968). In this study socio-economic status was assumed to be comparable across the three sub-samples. Both bilingual sub-samples could, however, be accorded minority status in terms of the larger society and population numbers. But in the context

of rural homogeneous communities, the deprivation and discrimination associated with minority status in urban communities are not viable. However, linguistically, these rural communities have peculiar differences which distinguish them from the main stream of society. These dialectical differences may well inhibit their cultural and social mobility.

Considering the disparity between the two bilingual communities of this study, it appears that bilingualism per se cannot account for the more limited linguistic functioning of bilinguals. Other factors closely associated with ethnic-linguistic background may, however, contribute to the disparity not only between the monolingual and bilingual communities but also between the bilingual communities.

Researchers have shown that exposure to adult communication is a salient feature of language development (Milner, 1951; Kinstler, 1961). If the language spoken in the home is non-English, as is the case for the subjects of the bilingual communities in this study, then syntactic control may well be related to linguistic background. The quality and quantity of adult communication in English is an important variable which may influence the differential linguistic development among the communities of this study.

Grade Level. The consistent significant superiority of grade six subjects over grade four subjects in all of the significant indices of language development, both on the negative and positive scale, points to two conclusions: It confirms the validity of the indices as measures of linguistic ability, and it shows emphatically that, at least in this study, the grade six subjects are superior to the grade four subjects across the total sample.

Sex. The many significant differences shown in the findings as favouring the females must be qualified. All of the indices except mean T-unit length are dependent on the number of T-units produced originally. Females produced significantly more T-units than males. This is, of course, reflected in the significant superiority of the females, as shown in the findings. Mean T-unit length is considered by Hunt(1965) as the most reliable index of language development. On this index the males and females showed a high comparability (F-ratio = 0.07).

Findings related to the sex variable in linguistic maturity are, therefore, inconclusive.

Intelligence. In spite of a small differential in the number of T-units written by the three ability levels, the findings show a valid and consistent superiority

of the high groups in all of the major linguistic indices both for the positive and negative indices. This finding helps to verify the validity of the language indices used in this study and shows emphatically that intelligence is a variable which influences language development.

III. IMPLICATIONS FOR FURTHER RESEARCH

The present study has consisted of a relatively intensive study of syntactical control and flexibility of children from varying ethnic-linguistic communities. Although it has provided some clear answers to several questions, related questions requiring further research have been intimated.

The ability to use and manipulate syntax can be measured fairly objectively and accurately by the indices used in this study. However, to assay fairly linguistic maturity requires additional measurements of a stylistic component. The student's choice of words, his rhetorical sensitivity, and his over-all effectiveness in communication are variables which could provide additional information about linguistic ability. A study designed to investigate the relationship between syntactic dexterity and stylistic effectiveness could, no doubt, provide valuable knowledge

to supplement what is already known about language development and language maturity.

This study pointed to some interesting linguistic differences in written syntactic structures among three linguistic communities. Clear-cut differences were noted in the monolingual-bilingual dichotomy. It would be of further interest to pursue this study in urban areas and in schools which include both monolingual and bilingual children.

A further investigation of differences in oral syntactic structures could yield answers to some of the unanswered questions of this study. For example, it might show to what extent deviations from standard English in written language are a perpetuation of faulty oral expression.

The two grade levels examined in this study showed interesting differentials in language development. However, to better assess stages of language growth or retardation characteristic of elementary school children, the range of grades studied should be expanded.

It would also be of value to delineate more specifically the sex variable in order to ascertain the relative maturity in language development of boys and girls.

IV. IMPLICATIONS FOR THE CURRICULUM

If it is true that the wide disparity among the ethno-linguistic communities of this study are partly related to the quantity and quality of adult spoken English communication in the home, community, and school environment of the individual child, then it would seem advisable for the school to take note of the speech practices of the community it serves. Emphasis on activities requiring effective oral communication in the school curriculum could have a salutary effect on the linguistic development of the children, especially for those who are exposed to a meagre quantity of adult speech in their home and community activities.

This study has demonstrated a method of analyzing children's language for relative maturity and for diagnosing what weaknesses and deficiencies occur in their writing. Using this method, teachers can determine the specific language needs of groups or individuals. She can determine to what extent the child has learned to manipulate syntax, what sentence patterns predominate in his writing, what transformations are missing and perhaps not within the range of his competence, and what errors are evident in his arrangement of syntactic elements.

If it is true that when a child enters first grade he

is already familiar with the basic sentence structure of the language, then it would appear that the teacher should concentrate on developing and refining the child's ability to manipulate syntactic structures. This study indicated that the ability to write sentence-combining transformations increases with increase in grade level. Through careful guidance from a teacher, a child could be introduced early to the art of building and compacting sentences by transforming syntax.

Children, like those in the B-G community of this study, who stay within a careful, "safe" framework in their writing will make few errors but they will also be restricted in their syntactical range. Monolingual children have reasonable control of syntax when they first come to school. Both of these groups could benefit from a program of instruction which is less concerned with a prescriptive emphasis on "correct" writing and more geared to encourage children to explore the interesting possibilities of manipulating syntax to achieve new and more flexible syntactical effectiveness.

More studies, of course, are needed to determine the heirarchy of difficulty (O'Donnell, 1965) involved in the production of various grammatical structures. Instructional materials could thus be

designed to best develop systematically the child's ability to achieve control and flexibility in syntactic expression.

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APPENDIX

APPENDIX A

RAW DATA TABLES

Explanation of Columnar Headings

1. Case Number
2. Age
3. Sex
4. Deviation I.Q.
5. Ability Level
6. Community (Sub-sample)
7. School
8. Grade
9. Number of T-units
10. Mean T-unit Length
11. Number of Coordinating Conjunctions
12. Number of Subordinate Clauses
13. Number of Sentence-Combining Transformations
14. Number of Mazes

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
073	10.2	F	116	H	3	1	4	34	7.3	9	7	27	0
074	11.2	F	98	L	3	1	4	38	7.1	7	8	40	1
075	12.3	F	74	L	3	1	4	46	8.0	25	9	46	0
076	10.3	F	116	H	3	1	4	38	8.2	12	15	48	1
077	11.9	M	76	L	3	1	4	31	7.6	6	7	28	0
078	11.6	M	82	L	3	1	4	39	6.2	14	9	24	1
079	11.4	M	102	M	3	1	4	26	6.1	11	3	11	0
080	10.3	M	100	M	3	1	4	39	8.0	4	9	46	0
081	9.7	F	103	M	3	2	4	27	6.6	7	7	14	0
082	9.5	F	113	H	3	2	4	34	9.4	23	11	35	0
083	9.6	F	99	M	3	2	4	50	7.3	20	15	45	0
084	9.6	F	101	M	3	2	4	36	7.6	10	14	30	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
085	10.9	M	102	M	3	2	4	32	8.9	16	11	39	0
086	9.4	M	115	H	3	2	4	24	9.2	9	13	32	1
087	11.8	M	80	L	3	2	4	14	7.9	6	1	10	0
088	10.2	M	114	H	3	2	4	41	7.5	4	20	47	0
089	10.4	F	101	M	3	3	4	34	7.9	3	4	30	0
090	9.8	F	93	L	3	3	4	15	8.3	6	3	11	0
091	10.1	F	93	L	3	3	4	20	7.9	6	2	17	0
092	9.8	F	93	L	3	3	4	33	8.2	6	10	34	0
093	10.1	M	106	M	3	3	4	23	9.6	5	10	34	0
094	10.3	M	118	H	3	3	4	34	8.9	13	12	39	0
095	8.9	M	120	H	3	3	4	36	7.2	7	11	31	0
096	11.3	M	96	L	3	3	4	20	8.2	7	4	15	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
097	9.0	F	116	H	2	4	4	42	10.2	14	32	66	0
098	9.9	F	107	M	2	4	4	40	7.8	14	13	42	0
099	10.3	F	102	M	2	4	4	25	7.0	4	6	21	0
100	9.6	F	110	M	2	4	4	23	8.9	4	12	27	0
101	10.8	M	119	H	2	4	4	25	8.7	13	7	23	0
102	9.9	M	113	H	2	4	4	29	9.4	13	19	44	0
103	12.5	M	99	M	2	4	4	23	9.3	7	8	32	0
104	10.0	M	121	H	2	4	4	27	8.7	9	10	30	0
105	10.3	F	120	H	2	5	4	36	8.3	8	18	42	0
106	10.0	F	109	M	2	5	4	24	7.9	2	9	31	0
107	11.1	F	86	L	2	5	4	21	8.3	5	4	19	0
108	10.3	F	94	L	2	5	4	36	7.9	11	17	33	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
109	13.5	M	80	L	2	5	4	21	9.7	7	11	39	0
110	10.7	M	90	L	2	5	4	23	7.5	6	6	22	0
111	10.5	M	90	L	2	5	4	19	6.6	1	4	19	0
112	12.0	M	80	L	2	5	4	16	6.7	5	1	10	0
113	9.9	F	128	H	2	6	4	36	7.8	5	9	32	0
114	10.1	F	107	M	2	6	4	44	9.8	17	16	61	0
115	10.7	F	98	M	2	6	4	12	7.8	1	4	11	0
116	11.3	F	83	L	2	6	4	38	7.6	4	13	41	0
117	10.6	M	129	H	2	6	4	26	7.6	4	5	19	0
118	9.8	M	104	M	2	6	4	37	7.9	10	14	34	1
119	9.6	M	119	H	2	6	4	30	7.7	5	6	35	0
120	10.3	M	112	H	2	6	4	36	7.4	10	11	28	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
121	10.4	F	118	H	1	7	4	44	11.7	14	27	75	2
122	9.6	F	100	L	1	7	4	28	7.7	15	8	22	0
123	11.0	F	81	L	1	7	4	18	8.9	1	8	21	2
124	10.0	F	112	M	1	7	4	37	8.0	14	13	40	1
125	10.3	M	103	L	1	7	4	26	9.9	2	12	35	0
126	11.1	M	88	L	1	7	4	22	10.0	7	9	27	0
127	10.8	M	102	L	1	7	4	32	8.9	2	14	39	0
128	10.5	M	122	H	1	7	4	33	9.6	5	24	51	0
129	9.7	F	124	H	1	8	4	34	8.9	12	16	45	0
130	9.9	F	123	H	1	8	4	29	8.5	2	16	45	0
131	9.5	F	114	M	1	8	4	47	6.6	11	8	36	0
132	9.8	F	131	H	1	8	4	19	11.2	3	14	31	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
133	11.7	M	98	L	1	8	4	19	7.2	6	3	15	0
134	10.9	M	97	L	1	8	4	20	7.4	4	9	17	0
135	9.4	M	111	M	1	8	4	27	7.1	4	9	25	0
136	10.3	M	114	M	1	8	4	25	9.0	3	8	31	0
137	9.4	F	124	H	1	9	4	32	7.1	7	11	29	0
138	10.5	F	126	H	1	9	4	21	9.9	1	9	32	0
139	10.3	F	110	L	1	9	4	23	7.8	3	7	29	0
140	9.9	F	118	M	1	9	4	27	9.1	8	11	39	0
141	9.9	M	114	M	1	9	4	31	9.8	9	12	38	0
142	9.7	M	129	H	1	9	4	18	8.2	1	7	21	0
143	9.7	M	111	M	1	9	4	27	10.3	10	16	34	0
144	9.8	M	116	M	1	9	4	39	7.0	6	7	35	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
145	11.8	F	109	M	3	1	6	22	8.2	5	11	29	0
146	13.0	F	84	L	3	1	6	31	7.1	10	9	25	0
147	11.8	F	96	M	3	1	6	22	7.7	6	4	19	0
148	11.9	F	88	L	3	1	6	30	7.1	9	6	18	0
149	11.8	M	113	M	3	1	6	24	7.5	5	5	19	0
150	12.4	M	99	M	3	1	6	22	7.6	7	6	20	0
151	12.0	M	114	H	3	1	6	37	9.2	9	20	50	0
152	11.6	M	89	L	3	1	6	21	7.2	6	3	19	0
153	11.9	F	106	M	3	2	6	38	7.5	13	14	36	0
154	12.7	F	98	M	3	2	6	29	8.0	9	10	31	0
155	11.7	F	120	H	3	2	6	33	8.3	9	18	38	1
156	12.1	F	105	M	3	2	6	27	8.9	6	7	28	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
157	12.3	M	124	H	3	2	6	26	7.5	8	10	25	1
158	12.8	M	97	M	3	2	6	34	8.1	13	10	34	0
159	12.1	M	114	H	3	2	6	26	8.9	5	2	33	0
160	12.8	M	78	L	3	2	6	30	7.9	13	9	27	0
161	12.3	F	114	M	3	3	6	35	7.5	6	12	33	0
162	12.3	F	105	M	3	3	6	34	9.3	7	14	52	0
163	11.9	F	117	H	3	3	6	32	8.7	5	13	38	1
164	13.7	F	83	L	3	3	6	29	7.0	6	8	26	0
165	12.3	M	105	M	3	3	6	33	8.6	9	13	40	0
166	14.2	M	80	L	3	3	6	25	9.3	13	10	28	1
167	12.1	M	118	H	3	3	6	29	9.6	8	14	45	0
168	12.5	M	125	H	3	3	6	42	9.8	13	19	59	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
169	13.5	F	81	L	2	4	6	37	9.5	8	15	65	0
170	13.8	F	94	L	2	4	6	21	10.0	6	12	34	0
171	12.5	F	93	L	2	4	6	36	9.8	7	19	50	0
172	11.3	F	102	M	2	4	6	34	9.1	5	11	35	0
173	12.5	M	104	M	2	4	6	24	11.8	8	12	46	0
174	12.5	M	111	M	2	4	6	28	8.5	7	7	28	0
175	11.7	M	118	H	2	4	6	28	7.7	8	7	25	0
176	13.9	M	81	L	2	4	6	39	8.4	9	10	36	0
177	11.5	F	117	H	2	5	6	39	8.1	8	12	44	0
178	12.9	F	85	L	2	5	6	35	7.9	22	6	32	0
179	12.6	F	117	H	2	5	6	58	8.6	10	21	75	0
180	12.3	F	101	M	2	5	6	35	8.9	15	21	68	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
181	12.2	M	100	M	2	5	6	31	7.9	12	8	26	0
182	11.7	M	92	L	2	5	6	26	9.3	3	11	32	1
183	12.7	M	92	L	2	5	6	30	9.0	2	10	42	0
184	12.3	M	92	L	2	5	6	31	6.8	7	9	24	0
185	12.7	F	122	H	2	6	6	31	11.8	6	18	59	1
186	10.3	F	129	H	2	6	6	33	9.8	8	18	45	0
187	11.3	F	117	H	2	6	6	37	9.3	9	14	48	0
188	12.6	F	103	M	2	6	6	34	8.0	6	6	35	0
189	11.3	M	111	H	2	6	6	27	7.4	5	12	30	0
190	12.6	M	102	M	2	6	6	36	9.5	10	16	38	0
191	12.7	M	105	M	2	6	6	24	7.0	13	6	11	0
192	12.3	M	111	H	2	6	6	29	9.4	2	9	35	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
193	12.3	F	104	M	1	7	6	29	9.7	3	15	52	0
194	12.3	F	98	L	1	7	6	25	8.3	5	4	30	0
195	11.8	F	111	M	1	7	6	41	8.7	17	19	56	1
196	11.8	F	119	H	1	7	6	27	7.9	9	7	28	0
197	11.9	M	93	L	1	7	6	31	10.4	16	10	52	1
198	12.3	M	99	L	1	7	6	52	8.4	21	24	63	0
199	12.4	M	109	M	1	7	6	34	8.7	2	9	44	0
200	14.6	M	101	L	1	7	6	25	7.7	8	7	29	0
201	11.5	F	118	H	1	8	6	27	9.8	5	11	50	0
202	11.8	F	111	M	1	8	6	44	8.2	6	16	47	0
203	13.1	F	98	L	1	8	6	21	10.7	8	14	36	0
204	13.1	F	99	L	1	8	6	33	8.0	8	9	37	0

RAW DATA TABLE

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
205	12.1	M	112	M	1	8	6	21	10.7	6	11	37	0
206	11.5	M	125	H	1	8	6	36	7.5	8	7	36	0
207	12.9	M	113	M	1	8	6	21	8.7	7	7	27	0
208	12.2	M	119	H	1	8	6	27	10.6	3	12	48	1
209	11.7	F	118	H	1	9	6	31	9.4	11	14	46	0
210	11.5	F	119	H	1	9	6	31	9.3	8	12	41	0
211	11.7	F	111	M	1	9	6	25	9.5	4	10	38	0
215	11.7	F	116	H	1	9	6	29	9.4	8	12	41	0
212	12.5	M	101	L	1	9	6	23	10.1	7	10	38	0
213	11.8	M	115	M	1	9	6	27	8.7	16	9	23	0
214	11.8	M	116	H	1	9	6	34	8.9	7	11	39	0
216	11.8	M	110	M	1	9	6	28	9.2	10	10	33	0

APPENDIX B

LINGUISTIC ANALYSIS SHEET

Part I

Part II

LINGUISTIC ANALYSIS SHEET

PART I

_____	1, 2, 3	Code Number
_____	4, 5, 6	Age
_____	7	Sex (M-1, F-2)
_____	8	School
_____	9	Grade (Gr. 4-1, 6-2)
_____	10, 11, 12	Deviation I.Q.
_____	13	Dev. I.Q. (Low-1, Middle-2, High-3)
_____	14	Dev. I.Q. (Low-1, High-2)
_____	15	Sub-sample code (Mono-1, B-G-2, B-F-3)
_____	16	Number of Siblings
_____	17	Ordinal Position (Only-1, Youngest-2, Middle-3, Oldest-4)
_____	18	Monolingual-1, Bilingual-2
_____	19	Reading Comprehension (Low-1, High-3)
_____	20 -- 23	Reading Comp. Z-score
_____	24	Paragraph Meaning (Low-1, High-3)
_____	25 -- 28	Paragraph Meaning Z-score
_____	29	Vocabulary (Low-1, High-3)
_____	30 -- 33	Vocabulary Z-score

LINGUISTIC ANALYSIS SHEET PART II

___ 34,35 No. of T-units _____
 ___ 36-38 Mean length _____
 ___ 39,40 Beg. with co.conj. _____

___ 41,42 No. of sub.cl. _____
 ___ 43 No. of mazes _____
 ___ 44 Attention claim. _____

SYNTACTIC STRUCTURES

___ 45,46 SV _____
 ___ 47,48 SVO _____
 ___ 49 SVCn _____
 ___ 50 SVCA _____
 ___ 51 SVIO _____
 ___ 52 SVOCn _____
 ___ 53 SVOCa _____
 ___ 54 Adv.VS _____
 ___ 55 There VS _____
 ___ 56 It VS _____
 ___ 57 Passive _____
 ___ 58 Command _____
 ___ 59 Question _____
 ___ 60 Partial _____

___ 61,62 SENT.-COMB. TFTNS _____

___ 63,64 NOMINAL TFTNS
 HEADED NOMINAL TFTNS

___ 65 N+N _____
 ___ 66 N+Adj. _____
 ___ 67 N+Poss. _____
 ___ 68 N+Rel.Clause _____
 ___ 69 N+O Rel.Clause _____
 ___ 70 N+Prep.Phr. _____
 ___ 71 N+Inf.Phr. _____
 ___ 72 N+Part.Phr. _____
 ___ 73 N+Adverbial _____

NON-HEADED NOMINAL TFTN

___ 74 D.Disc.(Nn.Cl.) _____
 ___ 75 Noun Cl. _____
 ___ 76 Prep.Phr. _____
 ___ 77 Infin.Phr. _____
 ___ 78 Infin.Phr.+Subj. _____
 ___ 79 Gerund Phr. _____

FUNCTION OF NOMINAL TFTNS

___ 34,35 Subject _____
 ___ 36,37 Object _____
 ___ 38 Indirect Obj. _____
 ___ 39 Subj. Comp. _____
 ___ 40 Obj. Comp. _____
 ___ 41 Appositive _____
 ___ 42 Obj. of Prep. _____
 ___ 43 Adv. Noun _____

ADVERBIAL STRUCTURES

___ 44,45 ADVERBIAL STRUCTURES
 ___ 46,47 Adverb Clause _____
 ___ 48 Time _____
 ___ 49 Place _____
 ___ 50 Manner _____
 ___ 51 Cause _____
 ___ 52 Condition _____
 ___ 53 Comparison _____
 ___ 54 Adj. Comp. _____

SENTENCE ADVERBIALS

___ 55 Absolute Const. _____
 ___ 56 Interjected Cl. _____
 ___ 57 Adverbial Phrase
 Adv. Infin. _____
 Adv. Prep.Phr. _____

COORDIN. STRUCTURES

___ 58,59 COORDIN. STRUCTURES
 ___ 60 Modifiers _____
 ___ 61 Adjectival _____
 ___ 62 Adverbial _____
 ___ 63 CO NOMINALS _____
 ___ 64,65 CO PREDICATES _____
 ___ 66 V _____
 ___ 67 VO _____
 ___ 68 VCn _____
 ___ 69 VCa _____
 ___ 70 VIO _____

ERROR ANALYSIS

___ 71 No. I _____
 ___ 72 No. II _____
 ___ 73 No. III _____
 ___ 74 No. IV _____
 ___ 75 No. V-discourse _____
 ___ 76 No. V-form _____
 ___ 77 No. V-number _____
 ___ 78 No. V-tense _____
 ___ 79 No. V-fragment _____

APPENDIX C

FOUR EXHIBITS OF LANGUAGE SAMPLES

Exhibit 132 Mono (above average)

Exhibit 108 B-G (average)

Exhibit 151 B-F (above average)

Exhibit 164 B-F (below average)

Information presented:

1. Original written sample
2. Typescripts of T-units showing:
 - a) Segmentation of language
 - b) Analysis of language

Code No. 132 Sub-sample Code No. 1 (Mono) Grade 4

In your own words tell the story of "The Fisherman and His Wife."

One day a poor fisherman caught a talking fish. He did not keep but threw it back into the ocean. When he got home his wife told him he should go down to the ocean and wish for a cottage. When he returned home a cottage stood in the huts place. When he came home the wife said the cottage was not big enough and to ask for a castle. When they had the castle to live in the wife said he should become king. But the fisherman refused so the queen became king.

Explain in a few sentences what you think of the fisherman's wife.

I think the fisherman's wife was greedy.

Explain in a few sentences what you think of the fisherman.

I think the fisherman was satisfied with his life even though he was poor.

In your own words tell the story of the three Bruins.

Almer who is mad at his brothers decides to let the boat float away giving his brothers a scare. But the current pulls them into the rappidts and they are carried swiftly down the river. Halfway down the river one of the bears fall out. The other two go down the river. The one bear that fell out reaches shore safley. The two bears in the canoe go over the waterfall.

Write in a few sentences what you think happened after the canoe turned over.

I think the two bears reached shore safley.

Do you think this is a true story? Yes.

Write in a few sentences why you think so (or don't think so).

It could have happened because a bear could have played with the rope and pulled it off the rock.

Code No. 132

SVO

Almer who is mad at his brothers decides to let the boat

N+Rel.Cl.	adv. prep.phr.	Inf.Phr.
Subj.		Obj.

float away giving his brothers a scare. 19

Inf.Phr.+Subj.	Ger.Phr.
Obj.	Apposition

SVO

But the current pulls them into the rappidts 8

co.conj.

SV

And they are carried swiftly down the river. 8

co.conj.

SV

Halfway down the river one of the bear fall out. 11

V-Number

SV

The other two go down the river. 7

SV

The one bear that fell out reaches shore safely 9

N+Rel.Cl.
Subj.

SV

The two bears in the canoe go over the waterfall. 10

N+P.P.
Subj.

Code No. 132

SVO
I think the two bears reached shore safely. 8

Noun Cl.
Obj.

SV
It could have happened because a bear could have played

Adverb Cl.
Cause

with the rope and pulled it off the rock. 19

Co.Pred.
VO

SVO
One day a poor fisherman caught a talking fish. 9

N+Adj.
Subj.

N+Pt.
Obj.

SVO
He did not keep but threw it back into the ocean. 11

Error III

Co.Pred.
VO

When he got home his wife told him he should go down to

Adverb Cl.
Time

N+Poss.
Subj.

Noun Cl.
Obj.

the ocean and wish for a cottage. 20

Co.Pred.
VO

Code No. 132

SVO
When he returned home a cottage stood in the huts place. 11

Adverb Cl.
Time

N+Poss.
Obj. Prep.

SVO
When he came home the wife said the cottage was not big

Adverb Cl.
Time

Noun Cl.
Obj.

enough and to ask for a castle. 20

Error II

Co.Pred. Inf.Phr.
other Obj.

SVO
When they had the castle to live in the wife said he

Adverb Cl.
Time

adv.inf.

Noun Cl.
Obj.

should become king. 15

SV
But the fisherman refused. 4

co.conj.

SVCn
So the queen became king. 5

co.conj.

SVO
I think the fisherman's wife was greedy. 7

Noun Cl. N+Poss.
Obj. Subj.

Code No. 132

SVO
I think the fisherman was satisfied with his life even

Noun Cl.
Obj.

adv.prep.phr.

though he was poor. 14

Adverb Cl.
Cond.

Code No.108 Sub-sample Code No. 2 (B-G) Grade 4

In your own words tell the story of "The Fisherman and His Wife."

The fisherman went fishing one day. When he had caught a fish it said let me go so he let it go. Then he went home and the women asked didn't you ask the fish anything? No answerd her husbun then go back and say I want a cottage. So he went to the fish and said, my wife wants a cottage. The the fish said, go back your wife is in the cottage. So he ran home. Then she said this cottage is to small. So she wanted a castle. Then she said go tell the fish I want a castle. So the fish said go back and your wife will be in the castle.

Explain in a few sentences what you think of the fisherman's wife.

She wanted new things. She wasn't pleased with all of it.

Explain in a few sentences what you think of the fisherman.

He was a kind man.

In your own words tell the story of the three Bruins.

They tried to go over a log but the one couldn't make it, so he said wait for me but the other two just kept on running. When the last bear started off those two were a end ahead. When they came to a boat. The two jumped in. When the last one came he chewed off the rope. Then he jumped in to. Then the boat started sailing alover the lake. When they had gone an end they came to falls. There they went up and down the falls. Then the on fell out that came last to the boat and he swam across to shore walked up the hill but the other two just sailed on and on untill it came to an end.

Write in a few sentences what you think happened after the canoe turned over.

The other two had to swim to shore to.

Code No. 108

Do you think this is a true story? No

Write in a few sentences why you think so (or don't think so).

Because they went on a boat. They also talked.
They played to like people.

Code No. 108

S V
The fisherman went fishing one day. 6

"adv.inf."

S V O
When he had caught a fish it said let me go 11

Adv. Cl.
Time

Noun Infinitive Phr.
Cl. with subj.
Obj. Obj.

S V O
so he let it go. 5

co. Infinitive Phr.
conj. with subj.
Object

S V
Then he went home 4

S V O
and the women asked didn't you ask the fish anything? 11

co. V-d Noun Cl.
conj. Obj.

Other
No answered her husband 4
V-d

N+poss.
Subj.

Command
then go back and say I want a cottage. 9
V-d

Co.Pred. Noun Cl.
VO Obj.

Code No. 108

S V
So he went to the fish and said, my wife wants a cottage. 13
V-discourse

co.
conj.

Co.Pred.
VO

N+poss.
Subj.

Noun Cl.
Obj.

S V O
The the fish said go back 6
V-discourse
Noun Cl.
Obj.

S V
your wife is in the cottage 6

N+poss.
Subj.

S V
So he ran home. 4

co.
conj.

S V O
Then she said this cottage is to small. 8
V-discourse
Noun Cl.
Object

S V O
So she wanted a castle. 5

co.
conj.

Code No. 108

S V O
 Then she said go tell the fish I want a castle. 11
 V-discourse
 Noun Cl. Noun Cl.
 Obj. Obj.

S V O
 So the fish said go back 6
 V-d
 co. Noun Cl.
 conj. Obj.

S V
 and your wife will be in the castle. 8
 co. N+poss.
 conj. Subj.

S V O
 She wanted new things. 4
 N+Adj.
 Obj.

S V Ca
 She wasn't pleased with all of it. 8
 adv. prep. phr.

S V Cn
 He was a kind man. 5
 N+adj.
 Cn

Code No. 108

S V O
They tried to go over a log 7

Infin. Phr.
Obj.

S V
but the one couldn't make it. 7

co.
conj.

S V O
so he said wait for me 6

V-discourse
co. Noun Cl.
conj. Obj.

S V
but the other two just kept on running. 8

co. "adv. inf."
conj.

S V
When the last bear started off those two were a end ahead. 12

Adv. Cl.
Time

V-form
unidiomatic
expression

S V
When they came to a boat the two jumped in. 10

Adv. Cl.
Time

Code No. 108

S V O
When the last one came he chewed off the rope. 10

Adv. Cl.
Time

S V
Then he jumped in to. 5

S V O
Then the boat started sailing alover the lake. 8

Gerund Phr.
Obj.

S V
When they had gone an end they came to falls. 10

Adv. Cl. unidiomatic
Time expression

S V
There they went up and down the falls. 8

Co. Mod.
Adv.

S V
Then the on fell out that came last to the boat 11

Error I
Noun + Rel. Cl.
Subj.

S V
and he swam across to shore walked up the hill 10

co. conj. Error IV
Co.Pred, V

Code No. 108

S V

but the other two just sailed on and on untill it came

co.
conj.

Co.Mod.
Adv.

Adv. Cl.
Time

to an end. 15

S V

The other two had to swim to shore to. 9

S V

[Because] they went on a boat. 5

S V

They also talked. 3

S V

They played to like people. 5

Adv. Cl.
Compar. (reduced)

Code No. 151 Sub-sample Code No. 3 (B-F) Grade 6

In your own words tell the story of "The Fisherman and His Wife."

Once upon a time a fisherman lived in a hut. He caught an extraordinary fish. He was really a prince in a deep spell. He set the fish free. Then the wife told him, "Why didn't you ask him something?" He repeated, "What should I ask him?" "Ask him for a cottage," she said. He asked him for a cottage and then the wife told him to have a castle because the cottage was too small. They got the castle and the fisherman didn't want to be king so the wife said, "I shall then be king, go ask him." He asked the fish for his wife to be king. And then the fisherman told his wife that she doesn't need anything else. She responded, "Well, we'll see about that."

Explain in a few sentences what you think of the fisherman's wife.

She is not very kind. She makes her husband do everything instead of her asking the fish. She looks and I think she is a very mean woman.

Explain in a few sentences what you think of the fisherman.

He is very nice and kind. He is not at all like his wife. The proof that he is kind is that he is set free that fish.

In your own words tell the story of the three Bruins.

Three little bear cubs were passing a log. They didn't like water. Once in a while they turned over and nearly fell in the water. There were two men that were in a canoe. Elmer wanted to get even with them because they left him behind. So he unattached the rope from the rock and they went in the rapids. Elmer was sorry he did that because he didn't know that the waters were in a rush. They came to the farther end of the rapids and the water came faster and faster. At last they

Code No. 151

came to the roaring of the rapids and it stopped there.

Write in a few sentences what you think happened after the canoe turned over.

I think that they swam and swam for a period of time until they reached elmer.

Do you think this is a true story? no

Write in a few sentences why you think so (or don't think so).

Because I don't think that little cubs like that can do everything possible what was on the film.

Code No. 151

SV
Once upon a time a fisherman lived in a hut. 10

SV
He caught an extraordinary fish. 6

N+Adj.
Obj.

SVCn
He was really a prince in a deep spell. 9

N+P.P. N+Adj.
Cn Obj.Prep.

SVO
He set the fish free. 5

Inf.Phr.+Subj.
Obj.

SVIO
Then the wife told him, "Why didn't you ask him something?" 12

Noun Cl.
Obj.

SVO
He repeated, "What should I ask him?" 7

Noun Cl.
Obj.

Other
"Ask him for a cottage," she said. 7

Noun Cl.
Obj.

Code No. 151

SVIO
He asked him for a cottage 6

SVO
and then the wife told him to have a castle because
co.conj. Inf.Phr.+Subj. Adverb Cl.
Obj. Cause

the cottage was too small 16

SVO
they got the castle 4

SVO
and the fisherman didn't want to be king 9
co.conj. Inf.Phr.
Obj.

SVO
so the wife said, "I shall then be king, go ask him." 12
Noun Cl.
Obj.

SVIO
He asked the fish for his wife to be king. 11
N+Poss. Inf.Phr.+Subj.
Obj.Prep. Obj.

Code No. 151

SVO
The fish said, "Your wife is now king." 8

Noun Cl.
Obj.

SVIO
And then the fisherman told his wife that she doesn't
V-Tense

N+Poss. Noun Cl.
Ind.Obj. Obj.

need anything else. 14

SVO
She responded, "Well, we'll see about that." 8

Att. Noun Cl.
Claim. Obj.

SVCa
She is not very kind. 5

SVO
She makes her husband do everything instead of her

N+Poss. Inf.Phr.+Subj. Ger. Phr.
Obj. Obj. Obj. Prep.

asking the fish. 12

Code No. 151

SV
She looks 2

SVO
and I think she is a very mean woman.

co.conj. Noun Cl. N+Adj.
 Obj. Cn

SVCa
He is very nice and kind. 6

Co.Mod.
Adj.

SVCn
He is not at all like his wife. 8

P.P. N+Poss.
Cn Cn

SVCn
The proof that he is kind is that he set free that fish. 13

N+Rel.Cl. Noun Cl.
Subj. Cn

SVO
Three little bear cubs were passing a log. 8

N+N
Subj.

Code No. 151

SVO
They didn't like water. 5

SV
Once in a while they turned over and nearly fell in the water. 13
V-Form
Co.Pred.
V

There VS
There were two men that were in a canoe. 9
N+Rel.Cl.
Subj.

SVO
Elmer wanted to get even with them because they left
Inf.Phr. Adverb Cl.
Obj. Cause
him behind. 12

SVO
So he unattached the rope from the rock 8
co.conj.

SV
and they went in the rapids. 6
co.conj.

Code No. 151

SVCa

Elmer was sorry he did that because he didn't know that

Noun Cl.	Adverb Cl.
Obj.	Cause

the waters were in a rush. 18

Noun Cl.	P.P.
Obj.	other

SV

They came to the farther end of the rapids 9

N+P.P.
Obj.Prep.

SVCa

and the waters came faster and faster. 7

co.conj.	Co.Mod.
	Adv.

SV

At last they came to the roaring of the rapids 10

Ger. Phr.
Obj.Prep.

SV

and it stopped there. 4

co.conj.

Code No. 151

SVO

I think that they swam and swam for a period of time

Noun Cl.	Co.Pred.
Obj.	V

until they reached Elmer. 16

Adverb Cl.
Time

SVO

Because I don't think that little cubs like that can

Noun Cl.	N+P.P.
Obj.	Obj.

do everything possible what was on the film. 18

N+Rel.Cl.
Obj.

Code No. 164 Sub-sample Code No. 3 (B-F) Grade Code 2 (6)

In your own words tell the story of "The Fisherman and His Wife."

One their was a fireman he was fishing and caught the prince. The fish said let me go. So the fisherman let him go. We he gauth home he told his wife what had happened. She ask if he ask for anything. Then he went to ask the prince for a new cottage then went he came home. His wife send him to ask for a castle. The she ask her husband to be king he said no. So she said that she would be king. So the fisherman whent to ask and the fish said she was king.

Explain in a few sentences what you think of the fisherman's wife.

She was always asking for things.

Explain in a few sentences what you think of the fisherman.

He was nice to the fish because he let it go.

In your own words tell the story of the three Bruins.

Once there were three bruins in a canoe. one untied the rop. Than came a big waterfall. One of the bruins fell off the canoe. And climb on a hill. The others staide in the canoe. They were scared but didn't jump off. The bruins were lost. Then they came to a waterfall and the canoe turned over.

Write in a few sentences what happened after the canoe turned over.

When the canoe turned over the two bruins fell and drown. They were never seen again.

Do you think this is a true story? Yes

Write in a few sentences why you think so (or don't think so).

Yes, because the bruins can do lots one thing.

Code No. 164

There VS
Once there were three bruins in a canoe 8

SVO
one untied the rop. 4

Adverb VS
Then came a big waterfall. 6

N+Adj.
Subj.

SV
One of the bruins felle off the canoe. And climb on a hill. 13

N+P.P.
Subj.

V-Tense
Co.Pred.
V

SV
The others staide in the canoe. 6

SVCa
They were scared 3

SV
but they dindn't jump off. 6

co.conj.

SVCa
The bruins were lost. 4

Code No. 164

SV
Then they came to a waterfall 7

SV
and the canoe turned over. 5

co. conj.

SV
When the canoe turned over the two bruins felle and drown. 11

Adverb Clause	V-Tense
Time	Co. Pred.
	V

SV
They were never seen again. 5

Yes, [because] the bruins can do lots one things. 8

N+P.P.
Obj.

There VS
One their was a fireman 5

SV
he was fishing and caught the prince. 7

Co. Pred.
VO

SVO
The fish said let me go. 6

V-Discourse	
Noun Cl.	Inf. P. + Subj.
Obj.	Obj.

SVO
So the fisherman let him go. 6

co. conj. Inf. P. + Subj.
Obj.

Code No. 164.

SVIO
 We he go gauth home he told his wife what had happened. 11

Adverb Cl.	N+Poss.	Noun Cl.
Time	Ind. Obj.	Obj.

SVO
 She ask if he ask for anything? 7

V-Tense	V-Tense
Noun Cl.	
Obj.	

SV
 Then he went to ask the prince for a new cottage 11

"adv. inf."

SVO
 then went he came home. His wife send him to ask for a castle. 14

Adverb Cl.	N+Poss.	Inf.Phr. +Subj.
Time	Subj.	Obj.

SV
 The she ask her husband to be king 8

V-Tense	Noun+Poss.	Inf.Phr.+Subj.
	Subj.	Obj.

SVO
 he said no. 3

SVO
 So she said that she would be king. 8

co.conj.	Noun Cl.
	Obj.

Code No. 164

SV
 So the fisherman went to ask 6
 co.conj. "adv.inf."

SVO
 and the fish said she was king. 7
 co.conj. Noun Cl.
 Obj.

SVO
 She was always asking for things. 6

SVCa
 He was nice to the fish because he let it go. 11
 adv. prep. phr. Adverb Cl. Inf.Phr.+Subj.
 Cause Obj.