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ABSTRACT
        This study examined oral-reading characteristics
associated with language development in second-grade children,
working on the suppositions that oral syntactic proficiency
influences a child's use of syntax while reading and that this
influence can be seen in oral reading, particularly in the contextual
appropriateness of errors. It was also presumed that statistical
control of word-recognition ability would help expose syntactic
proficiency in reading by, in effect, equating subjects on the
ability to use graphic cues and allowing the ability to use symbols
to vary independently. Using 90 second-grade subjects, the research
design had two parts: the exploration of the relationships among
language development, reading ability, intelligence, socioeconomic
status, and sex; and the correlation of oral reading behavior with
language development when the influence of word recognition ability
and intelligence is controlled. Results suggested that oral syntactic
proficiency as measured by Chomsky's Linguistic Instrument does not
relate to contextual appropriateness of oral-reading errors but,
rather, to correction behavior. (HOD)

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ORAL READING CHARACTERISTICS ASSOCIATED WITH

THE LANGUAGE DEVELOPMENT OF SECOND-GRADE CHILDREN

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Recent developments in oral reading error research have made it possible to infer what may be occurring in the reading process. Qualitative analysis of oral reading errors suggests, for example, a given reader's relative use of graphic and contextual cues. One would expect that such differences in reading strategy would be affected by differences in language development. This study explored that possibility by examining the oral reading characteristics associated with language development of second-grade children.

Various researchers have found language measures of one kind or another related to reading achievement. Evertts (1961), Barnes (1962), and Loban (1963) used structural analysis of language which had been segmented according to phonological and communication units in their studies of language and reading abilities of elementary-age children. Fry (1968) also based her analysis of the oral language of second-grade children on phonological and communication units but analyzed them with a measure of transformational rules. Brittain (1970) did not, however, analyze spontaneous speech but focused on inflectional competence using an adaptation of the Berko (1958) test which involves nonsense words and inflections. Chomsky (1971) also tested specific constructions suspected to develop late and found a moderate correlation between reading achievement and language competence with four syntactic structures. All of these researchers used standardized reading achievement tests to measure reading ability.

Early language acquisition and language-reading research like that done by Loban was based on analysis of spontaneous speech and a minimal unit such as phonological and communication units. Such analysis is questionable, however, because it often equates length and linguistic complexity, depends on the validity of its theoretical base, and is in most cases a strictly quantitative measure. Recent research utilizes tests of specific grammatical features suspected or known to develop late. In language acquisition research this approach has been used by Chomsky (1969, 1971), Kessel (1970) on ambiguity, Barrie-Blackley (1973) on time adverbs, McGrath and Kunze (1973) on tag questions, among others. There are also weaknesses in this approach to language evaluation: the individual interview is time-consuming, the interviewer and the environment in general can easily affect the outcome, and the test-taking situation can be quite artificial. This approach does not, however, depend as much on the validity of its theoretical base as does the spontaneous speech approach. In other words, the specific construction approach tests understanding of a particular grammatical

feature and does not involve a structural, transformational, or any other linguistic theory in the analysis to the degree that the spontaneous speech approach does. For this reason, it was decided to use the specific construction approach in this study.

Of the constructions previously tested in language acquisition research, those in the Chomsky (1971) study seemed to be the most appropriate because they had already been used in language-reading research, seemed to have an acquisition sequence, and had been re-tested partially or wholly by other researchers (Olds, 1968; Kessel, 1970; Kramer, Koff, and Luria, 1972; Cromer, 1970; Cambon and Sinclair, 1974; Kelleher, 1973; Houston, 1973; and D'Asaro, 1974). Chomsky tested 36 children from six to ten years old on eight specific syntactic construction, three of which she had tested in an earlier study (Chomsky, 1969). Of the eight constructions, four seemed to be acquired in sequence: ask/tell, promise, easy to see, and and/although. In testing the ask/tell construction, Chomsky had two children ask and tell each other what to feed a doll. This task involved three aspects of the verbs ask and tell: (a) the distinction between ask and tell before simple complement clauses: Ask/tell X[1] what time it is or Ask/tell X the color of the doll's dress; (b) the distinction between ask and tell before complex complement clauses: Ask/tell X what food to give her now; and (c) the distinction between ask and tell in deleted subject recovery with complex complement clauses. In (c) tell adheres to the minimum distance principle. For example in the sentence Tell X what food to give her now, the subject of give is X, the closest noun phrase (NP) and consistent with the minimum distance principle; in the sentence Ask X what food to give her now, the subject of give is the farthest NP, you (or I). In other words, the child who had acquired this construction responded by asking the other child, "What food shall I give her now?" The child who did understand the difference between ask and tell but had not yet learned the difference between them in subject retrieval before complex complement clauses repeated, "What food to give her now," or more commonly, asked, "What do you want to give her now?" (For further information about this construction, see Chomsky, 1969, chap. 2.) In addition a picture identification section was included in the Chomsky interview which tested the two aspects of ask/tell related to complex complementary clauses.

The second construction, promise, also involved retrieval of the most distant NP and was therefore an exception to the minimum distance principle. For example, in the sentences Bozo promises Donald to lie down, and Bozo told Donald to lie down, it is Donald (the nearest NP) who lies down in the told construction but Bozo (the farthest NP) who lies down in the promise construction. The child who had not yet acquired knowledge of this

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1 X is used in the Language Development Interview to indicate the second child, S stands for the child being tested.

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particular exception associated with promise interpreted both
sentences alike; it was Donald who laid down. The props for
this section of the interview were two dolls, Bozo the Clown
and Donald Duck, which the children manipulated according to
their understanding of the sentences. .

The third construction, easy to see, involved retrieval of
the deleted object as well as the subject of the infinitival
verb. In the sentence The doll is easy to see, it was necessary
to retrieve both the subject (someone else) and the object (the
doll) of see. Chomsky placed a doll with eyes that opened and
closed before the child with the doll's eyes closed. The child
was asked if the doll was easy or hard to see and why. The child
who had not yet acquired this construction answered, "Hard to
see, because her eyes are closed," thinking that it was the doll
who did the seeing.

The fourth construction examined was and/although. Two
pairs of sentences using and/although were read to the child:
The cowboy scolded the horse for running away, and/although I
would have done the same. Then the interviewer asked, "What would
I have done?" With and sentences, the answer is scolded and with
although sentences the answer is run away, i.e., there is a dif-
ferent verb referent of done the same following and and although.

This study used an adaptation of the Chomsky interview of
these four constructions to investigate differences in oral read-
ing behavior according to language development level of second-
grade children. First the relationships among language develop-
ment, reading ability, intelligence, socioeconomic status, and
sex of 90 children were examined in order to determine the con-
tribution of each variable. This correlational analysis was
followed by the selection of children within the second grade
reading range who read aloud four stories at their instructional
reading level. After their errors were analyzed, oral reading
characteristics were compared according to language development
levels established by the Chomsky interview adaptation.

Since previous research indicates that intelligence makes a
significant contribution to the language-reading relationship
(Barnes, 1962; Fry, 1968; Ribovich, 1975; Harris, 1975), its in-
fluence was statistically controlled in this comparison of oral
reading behavior according to language development level. In
addition, the influence of isolated word recognition ability was
controlled as a way of isolating language and reading ability as
much as possible. Isolated word recognition ability is the
ability to identify a single word out of context; its control
should expose a child's ability to obtain meaning from larger
language units. It is at this level that language ability is
probably most important to fluent reading.

With intelligence and word recognition ability controlled,
it was expected that there would be a difference in contextual
appropriateness of errors according to language development
level, that the oral reading errors of high language develop-

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ment children would be more contextually appropriate than those
of low language development children. This expectation was
based on the assumption that high language development children
have more knowledge of language, particularly language constraints
and redundancy, and that they use that knowledge while reading
to produce fewer contextually inappropriate errors. No difference
in graphic appropriateness of errors was expected, especially
with the influence of word recognition ability statistically
controlled. Likewise, no difference in correction behavior was
expected.

METHODOLOGY

The research design had two parts: part one explored the
relationships among language development, reading ability, in-
telligence, socioeconomic status, and sex; part two examined
the correlation of oral reading behavior with language develop-
ment when the influence of word recognition ability and intelli-
gence is controlled.

Part One

Selection of Subjects
Subjects for part one were 90 second-grade students from
West Cedar and Margaretta Carey Elementary Schools in Waverly,
Iowa, a town of approximately 7.000 people. All children spoke
Standard Midwestern as a first language; those with extreme
speech or hearing disorders were not included. Subjects were
between seven years - seven months and eight years - six months
old.

Collection of Data
Language development: The interview. The purpose of the
Language Development Interview was to establish a language
development stage for each subject, using Chomsky's Linguistic
Interview and Stages of Development as models. The four con-
structions tested were: ask/tell, promise, easy to see, and
and/although. The only major changes made in the Chomsky ask/
tell section were made in changing the task from feeding a
doll to shopping for groceries. A Colorforms grocery store with
flat plastic shapes of Charlie Brown, groceries, and a grocery
cart seemed more interesting and less sex role-related than
Chomsky's feeding of a doll.
The format of the promise section was identical to Chomsky's:
(a) check on understanding of the word promise, (b) practice
with props and task demands, and (c) the test itself. Palermo
and Molfese (1972) have questioned the adequacy of the check on
the understanding of promise. And, in a pilot administration of
this interview children did have difficulty responding to ques-
tions like, "Can you tell me what you would say to your friend
if you promise him that you'll call him up this afternoon?"

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As a result, this question was replaced by two questions from
the earlier Chomsky (1969) interview: "What do you mean when
you make somebody a promise; what's special about a promise?"
This approach avoided the confusion of the previous question.
    The pilot administration of the interview also revealed
awkwardness in the use of the present tense promises on the
test items, e.g., Woodstock promises Snoopy to hop up and down.
Past tense promised was substituted and seemed to be more under-
standable.
    The final change in the Chomsky promise section involved
the task. The Colorforms grocery store plus figures of Snoopy,
Woodstock, and a ladder were used again. The children were to
manipulate Snoopy or Woodstock according to their understanding
of the promise sentences.
    Since Chomsky had only one test of the easy to see con-
struction, additional items were adapted from Cromer's (1970)
study and included in this study. The child was given two
large hand puppets, an alligator and a bear, and asked to act
out a series of sentences which described one animal biting the
other. These additional eight items included four easy to see
constructions and four whose infinitival subject was indeed the
subject of the sentence: The alligator is happy to bite as
opposed to The alligator is easy to bite.
    Three pairs of sentences rather than two were used in the
and/although section. Chomsky's use of two items to test each
construction seemed to be inadequate. In addition, the puppets
from the previous section were used as memory aids, since the
sentences in this section were so long and complicated. Chomsky
had children who could, read the sentences themselves. However,
since the main purpose of this part of the study was to deter-
mine the relationship between language and reading ability, it
was impossible to include reading in the Language Development
Interview. Instead, the alligator and bear puppets were used
as characters in the test sentences and the children were in-
structed to use them for memory aids.
    All four of the previously described constructions were
examined by the same interviewer in a 15 to 20 minute indivi-
dual interview. Audio tape recordings were made of the inter-
views for later scoring.
    Language development: Scoring procedure. The Language
Development Interview was scored from audio tape recordings
with the exception of the promise and easy to see sections.
The answers to these sections were demonstrated rather than
spoken aloud and were therefore scored during the interview.
    Each section of the interview contained five tests of the
specific constructions. It was assumed that the children had
acquired knowledge of the construction if they answered four
of the five correctly. Since the and/although section contained
only three items for each, two out of three correct was con-
sidered to indicate mastery of the construction.

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As was previously mentioned, the ask/tell section examined three aspects of the verbs; only the third, the distinction between ask and tell in deleted subject recovery with complex complement clauses, was directly relevant to this study as part of Chomsky's Stages of Development. As a result, only the answers to the last half of the ask/tell interview including the picture identification test were scored for this study.

The and/although section also required special consideration in scoring. Since the verb referent following although was the closest NP and seemed to follow the minimum distance principle, children could choose the right verb referent whether or not they had acquired the specific construction. Chomsky hypothesized that children go through an intermediary stage when they choose the far referent for both and and although, then complete the developmental sequence by returning to the near referent for although. For this reason, although was not scored "correct" unless and was also correct.

Chomsky's Language Development Sequence involved five stages: Stage I, acquisition of none of the construction; Stage II, acquisition of easy to see; Stage III, acquisition of promise; Stage IV, acquisition of ask/tell and and; and Stage V, acquisition of although. This sequential arrangement of stages was followed in this study.

Reading ability. In order to obtain a general estimate of reading ability the Primary Reading Profiles Level 2 Tests 3, 4, and 5 (Word Recognition, Word Attack, and Reading Comprehension respectively) were administered to all 90 subjects. The tests were given in two sessions on the same day (total time approximately 55 minutes). The reading comprehension grade level score was considered relevant for this study.

Intelligence. The Lorge-Thorndike Intelligence Test, Level 2, Nonverbal Battery was administered. This particular test was chosen because it is (a) relatively short (approximately 35 minutes), (b) a group test, and (c) nonverbal (does not require reading). An intelligence quotient equivalent was reported for each subject.

Socioeconomic status. Hodge-Siegel-Rossi (1966) Prestige Scores were used as a quantitative score for socioeconomic status for all subjects. Prestige scores rate the occupation of the head of household on a scale of 14 to 78.

Sex. For purposes of statistical analysis, sex of subject was reported as 1 or 2, male or female respectively.

Statistical Analysis

Since the purpose in part one was to determine the relationships among language development, reading ability, intelligence, socioeconomic status and sex, intercorrelations among all five variables were determined. Multiple correlations were then computed using reading ability as the dependent variable. The order in which the independent variables were entered into the equation was varied in order to compute the partial correlation of language development and reading ability with differing combinations of factors controlled.

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Part Two

Selection of Subjects

The purpose in part two was to explore the correlation of oral reading behavior with language development when the influence of word recognition ability and intelligence is controlled. This involved inventory of word recognition ability, oral reading of several selections by each subject, and comparison of the reading according to language development levels established in part one. Comparisons could not be made, however, unless the selections read were of approximately the same difficulty level for all subjects. For this reason, grade equivalent scores from the Primary Reading Profiles Comprehension Subtest were used to limit the range of reading ability to 2.3 to 3.3. Twenty-eight subjects remained after this selection process; one of the 28 was later excluded because of unusual oral reading difficulties (28% errors), leaving 27 subjects in part two.

Collection of Data

Language Development. The language development stages established in part one were used in part two.

Intelligence. The Lorge-Thorndike intelligence quotient scores from part one were used in part two.

Isolated word recognition. Standard Reading Inventory (SRI) word lists were used to obtain isolated word recognition levels for each part two subject. The score reported for each subject was the level of at least 80% accuracy. This score was then transformed to a strictly numerical scale of 1 to 11, representing the 11 reading levels of the SRI word lists.

Oral Reading. Just before administration of the word recognition inventory, each child read aloud four unfamiliar stories which were audio tape recorded for later scoring. Story 1 was 212 words long and the Botel (1962) readability was 2-1; Story 2 was 134 words long with 2-2 readability; Story 3 was 77 words long with 3-1 readability; and Story 4 was 109 words long, also with 3-1 readability. Order of administration was controlled so that half the subjects read Story 1 first and half read Stories 3 and 4 first.

Scoring Procedure

Since the language development and intelligence data were already scored in part one and the word recognition scoring relatively simple, the major scoring effort in part two involved the oral reading data. One major concern of oral reading analysis is scorer reliability. Hood (1976) has explored this concern and projected reliabilities for various numbers of judges. On the basis of her projections, four judges -- all graduate students -- were hired and trained for oral reading error analysis.

Procedures used for scoring were the same as those described in Hood (1976) except that whenever several errors were made on

a single test word, only the last error was scored.   Following
the training period of 15 3/4 hours, the judges independently
scored the oral reading of each subject and recorded their scores
on Data Preparation Worksheets which were then prepared for
computer analysis.
        The subject scores wcre the means over the four judges for
each of the following error scores: the total number of errors
expressed as a percent of the total number of words (Total Errors);
the number ´ ´ errors not contextually appropriate at the passage
level and r... corrected, expressed as a percent of the total
number of words and assumed to represent loss of meaning (Meaning
Loss); the percent of errors beginning with the same letter as
the test word (Similar); the percent of errors corrected by the
reader (Corrected); the percent of errors in each of four cate-
gories of contextual appropriateness: those appropriate in the
passage as a whole (Pass-Context), appropriate in the sentence
but not the passage (Sen-Context), appropriate considering the
preceding but not the following context (Pre-Context), and not
contextually appropriate (Not-Context); the percent of errors
corrected in each of the four categories of contextual appro-
priateness (Corrected-Not, Pre, Sen, and Pass); the percent of
graphically similar and different errors corrected (Corrected-
Sim and Diff).

Statistical Analysis
        Statistical analysis in part two involved intercorrelations
and multiple correlations. Intercorrelations were determined
among language development, word recognition ability, intelli-
gence, reading ability, and the 14 oral reading categories.
Then multiple correlations were computed between language devel-
opment and oral reading with word recognition and intelligence
controlled.

RESULTS AND DISCUSSION

Part One

Language Development
        The Language Development Interview. The results of the
Language Development Interview confirmed with only a few excep-
tions the finding reported in Chomsky's study. For the second-
graders in this study the four constructions, ask/tell, promise,
easy to see, and and/although, were still in the process of acqui-
sition.
        The first construction tested, the ask/tell construction,
had been acquired by 32 of the 90 children. Of those 32, how-
ever, 12 (38%) passed the conversational but not the picture
identification portion. This finding was inconsistent with
Chomsky's. Of her 36 subjects, five (14%) had passed the pic-
ture identification but not the conversational portion; these

Chomsky calls "transition children." In other words, Chomsky found that performance on the picture identification and conversational portions usually coincided; when they did not, picture identification ability was usually acquired first. In this study there were 17 "transition children", but 12 of these children had acquired conversational ability first. There is no obvious explanation for this difference. However, since the conversational portion of the Language Development Interview included more test items and was generally more difficult than the picture identification portion, it was decided to consider these 12 children "successful" on the ask/tell construction. (For more information on the comparative difficulty of the conversation and the picture identification portions, see Chomsky, 1969, pp. 98-101.)

The promise construction had been acquired by 59 children and the easy to see construction had been acquired by 72. The one question from Chomsky's interview, "Is this doll easy or hard to see," was missed by only one child. This means that the test items fashioned after Cromer's (1970) were more discriminating than the Chomsky question, i.e., only one child would have failed easy to see had the section included only Chomsky's one test.

The and construction had been acquired by 49 children and the although construction by three. One would expect more children to have acquired although. Of Chomsky's subjects in the 7-7 to 8-6 age range, one (of eight) had acquired although. The children in this study, however, did not read the test sentences themselves, so the two studies were not completely comparable. In addition there were noticeable problems in the construction and administration of the and/although section: (a) the mixture of fantasy (the personification of the alligator and the bear) with reality (what would I, the interviewer, have done), which lead some children to believe that they could create an answer rather than locate it in the test sentence; (b) the difficulty for the interviewer of using a consistent and correct intonational pattern when reading the sentences to the child; (c) the ease with which a listener can miss the and or although; and (d) the difficulty level of the past conditional phrase would have done. Some of these problems may be avoided in future research by using test items like: Charlie Brown laughed at Woodstock for eating ice cream and/but Snoopy's going to do the same thing. What's Snoopy going to do?

Table 1 summarizes the results of the Language Development Interview. The decreasing number of children passing the test sections as one moves from easy to although confirms predictions based on the Chomsky (1971) study. The results also verify that the Language Development Interview is a valid test of the acquisition of easy to see, promise, and ask/tell. Changes must be made, however, in the and/although section before it will be a usable part of the interview.

Table 1

Results of Language Development Interview and Sequence

Construction	No. Having Acquired Construction	Stage	No. in Stage
None	—	I	18
Easy to See	72	II	21
Promise	59	III	23
And	49	IV	16
Ask/Tell	32	V	12
Although	3	VI	0

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The Language Development Sequence. Chomsky's Language Development Sequence was not strictly applicable to the results of this study. First, the acquisition of ask/tell and and did not converge. Because 49 children had acquired and while only 32 had acquired ask/tell, it was decided to separate Stage IV with and remaining as Stage IV and ask/tell becoming Stage V. This means a possible six stages of development in this study as opposed to five in the Chomsky study.

Second, there were 38 children whose knowledge of the specific constructions did not follow the developmental model. Theoretically, these exceptions to the model suggest that the Language Development Sequence is best used as a gross indication of acquisition sequence and not as an evaluation of a single child's progress. However, for the purposes of this study, a language development stage was specified for these 38 subjects by assigning the number of the stage before interruption in the sequence. In other words, if a child had acquired easy to see and and but not promise, the last stage before interruption, Stage II, was assigned as the child's Stage of Development. This means that Table 1 must be interpreted with care. For instance, of the 18 children in Stage I, only four had not acquired any of the four constructions; the other 14 were assigned to Stage I because they missed easy to see but had acquired other constructions in the sequence. Similarly, 12 of the Stage II subjects, 11 of Stage III, and one of Stage IV were classified in each particular stage because of interruptions in sequence.

Reading Ability
        The Primary Reading Profiles reading comprehension grade equivalent scores ranged from 0.6 to 6.0 with a mean of 3.0.

Intelligence
        The Lorge-Thorndike intelligence quotient equivalents ranged from 75 to 133 with a mean of 108.

Socioeconomic Status
        Hodge-Siegel-Rossi Prestige Scores ranged from 17 to 78 with a mean of 40.

Sex
        Of the 90 children in part one there were 50 girls and 40 boys.

Correlations
        Table 2 presents simple correlations of language development (LD), reading ability (RA), intelligence (IQ), socioeconomic status (SE), and sex. These results indicate a strong, positive relationship between intelligence and reading ability (.64). The correlation coefficient for reading and language development is similar to that found by Chomsky (.38 in this

Reading Ability (RA), Intelligence (IQ),

Socioeconomic Status (SE), and Sex

	LD	RA	IQ	SE	SEX[a]
LD	—	$.38^{**}$	$.37^{**}$	$.21^{*}$	.13
RA		—	$.64^{**}$	.12	$.31^{*}$
IQ			—	.15	.16
SE				—	-.08
SEX					—

** $p < .05$

* $p < .10$

[a]Since sex is scored 1 male, 2 female, positive correlation indicates females have higher reading ability

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study compared with Chomsky's .39 by Kendall rank ordering).
The coefficient for intelligence and language development is
not as high as might be expected (.37), however the non-verbal
instrument used would minimize the relationship. In her study,
Chomsky used the Wechsler Intelligence Scale for Children and
reported correlations with both verbal and performance scales;
they were .63 and .47 respectively.

Table 3 presents the partial correlations of language devel-
opment and reading ability with differing combinations of the
variables controlled. When socioeconomic status and sex effects
are controlled, the partial correlation between language develop-
ment and reading ability is not appreciably less than the simple
correlation. However, when intelligence is controlled, either
alone or in combination with socioeconomic status and/or sex,
r drops below the .05 level of statistical significance.

Part Two

Language Development
Of the 27 subjects in part two, five were in Stage I, 11 in
Stage II, three in Stage III, five in Stage IV, three in Stage V,
and none in Stage VI of the Language Development Sequence.

Intelligence
The intelligence quotient scores for the 27 children ranged
from 88 to 125 with a mean of 105 and standard deviation of 8.98.

Isolated Word Recognition
The children's isolated word recognition abilities ranged
from primer to fifth grade reading levels and averaged 5 on
the numeric scale of 1 - 11, which corresponds to a reader
level of second-grade, second semester (2-2). Standard deviation
was 1.72.

Oral Reading
Table 4 presents the mean, range, standard deviation and
scorer reliability for each of the 14 oral reading categories.
The range of total errors, from one to 10 per 100 words, is
within that recommended for instructional level by Betts (1946,
p. 449), Johnson and Kress (1965, p. 8), and McCracken (1967,
p. 54). In other words, the difficulty level of the material
read was appropriate for oral reading error analysis.

Scorer reliability for the 14 oral reading categories
ranged from .60 to .99. This range is similar to that esti-
mated by Hood (1976) for four scorers: .81 to .99.

Correlations
Statistical analysis of the part two data involved inter-
correlations and multiple correlations of language development,
intelligence, word recognition, and the 14 oral reading cate-

Table 3

Partial Correlations of Language Development and
Reading Ability with Differing Combinations
of Remaining Variables Controlled

Variable(s) Controlled	r
NONE	.38**
SE	.37**
SEX	.36**
SEX, SE	.34**
IQ	.20*
IQ, SE	.20*
IQ, SEX	.19*
IQ, SEX, SE	.18*

** $p < .05$

* $p < .10$

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Table 4

Mean, Range, Standard Deviation, and Scorer Reliability for

Each Oral Reading Category

Category	Mean	Range	S.D.	Reliability
Total Errors	.06	.01-.10	.03	.99
Meaning Loss	.02	.00-.05	.01	.98
Similar	.50	.29-.82	.15	.97
Corrected	.34	.11-.56	.13	.96
Not-Context	.27	.12-.49	.10	.94
Pre-Context	.30	.11-.50	.0ᶜ	.85
Sen-Context	.24	.05-.41	.09	.80
Pass-Context	.18	.04-.33	.08	.88
Corrected-Sim	.35	.00-.79	.17	.95
Corrected-Diff	.34	.06-.69	.14	.94
Corrected-Not	.40	.08-1.00	.23	.88
Corrected-Pre	.45[a]	.21-.82[a]	.15[a]	.88[a]
Corrected-Sen	.19[b]	.00-.63[b]	.16[b]	.93[b]
Corrected-Pass	.25[b]	.00-.88[b]	.19[b]	.82[b]

[a]One subject had no Pre-Context errors to correct, thus
the data for this category are based on 26 subjects.

[b]Three subjects had no Sen- or Pass-Context errors, thus
the data for these categories are based on 24 subjects.

gories.   Table 5 presents intercorrelations of some of these
variables.   The restricted reading ability range is reflected
in the low correlation between language development and reading
ability: .13 here as compared with .38 in part one.   One would
expect the same to occur between intelligence and reading ability,
but it does not; the correlation remains high at .66.   Lang-
uage development is significantly related only to intelligence
and not to word recognition ability or total oral reading errors.
The remaining significant correlation is between the percent
of total errors and word recognition ability.   Since the total
errors category is a measure of word recognition ability in con-
text, it would be expected that there would be a significant
relationship between it and isolated word recognition ability.

Tables 6 and 7 present simple and partial correlations of
language development, intelligence, and word recognition with
the oral reading categories.   Table 6 includes the categories
for total errors, graphic similarity, and contextual appropriate-
ness.   Table 7 includes the categories for correction and meaning
loss.   The four language development columns in both tables
represent first the simple correlations with language develop-
ment, and then partial correlations with word recognition con-
trolled, partials with intelligence controlled, and finally
partial correlations with both intelligence and word recognition
controlled.

Table 6 reveals no significant relationships between total
errors, graphic similarity, or contextual appropriateness and
either intelligence or language development.   The only sta-
tistically significant correlations are between word recognition
and total errors, graphic similarity of errors, contextually
inappropriate errors, and errors appropriate at the passage
level.   It is important to note that controlling for word rec-
ognition did not significantly change the correlations with
language development.

Table 7 reveals a significant relationship between intel-
ligence and two of the correction categories (Corrected-Sim and
Corrected-Pre) and between word recognition and three of the
categories (Corrected-Pre, Corrected-Pass, and Meaning Loss).
Simple correlations of language development are significant
only for corrections appropriate within the error sentence.
Again as in Table 6, partial correlations demonstrate that even
with the influence of word recognition controlled, the relation-
ship of language with the correction categories does not change.
However when the contribution of intelligence is removed, lang-
uage development is significantly related to general correction
behavior, correction of graphically dissimilar errors, correc-
tion of errors appropriate to the preceding context, and correc-
tion of errors appropriate within the error sentence.   All of
these correlations are negative, which means that higher lang-
uage development levels are related to lower proportions of
corrections.

Table 5

Intercorrelations of Language Development (LD), Reading
Ability (RA), Intelligence (IQ), Word Recognition (WR), and
Total Oral Reading Errors (TE)

	LD	RA	IQ	WR	TE
LD	—	.13	.46**	-.03	.11
RA		—	.66**	.05	-.24
IQ			—	.17	-.22
WR				—	-.64**
TE					—

**$p < .05$

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Table 6

Simple and Partial Correlations of Language Development (LD),

Intelligence (IQ), and Word Recognition (WR)

with Selected Oral Reading Categories

Oral Reading Categories	IQ	WR	LD	LD^a	LD^b	LD^c
Total Errors	-.22	-.64**	.11	.12	.24	.21
Similar	-.08	-.60**	.07	.08	.13	.07
Not-Context	-.20	-.41**	.06	.05	.17	.14
Pre-Context	.18	.18	.05	.04	-.04	-.07
Sen-Context	.05	.08	.00	.00	-.03	-.04
Pass-Context	-.01	.67**	-.09	-.09	-.09	-.02

[a]Partial correlation with word recognition controlled.

[b]Partial correlation with intelligence controlled.

[c]Partial correlation with intelligence and word recognition controlled.

**p < .05

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Table 7

Simple and Partial Correlations of Language Development (LD),

Intelligence (IQ), and Word Recognition (WR)

with Oral Reading Correction Categories

Oral Reading Categories	IQ	WR	LD	LD[a]	LD[b]	LD[c]
Corrected	.31	.11	-.17	-.17	-.37*	-.36*
Corrected-Sim	.39**	.14	.04	.04	-.17	-.16
Corrected-Diff	.11	.16	-.31	-.31	-.40**	-.39**
Corrected-Not	.26	.21	-.02	.01	-.16	-.14
Corrected-Pre	.48**	.39**	-.05	-.04	-.34*	-.32*
Corrected-Sen	.02	-.14	-.41**	-.41**	-.41**	-.49**
Corrected-Pass	.05	-.32*	-.18	-.20	-.23	-.29
Meaning Loss	-.16	-.36*	-.01	-.02	.07	.03

[a]Partial correlation with word recognition controlled.

[b]Partial correlation with intelligence controlled.

[c]Partial correlation with intelligence and word recognition controlled.

**$p < .05$

*$p < .10$

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The basic supposition of this study was that oral syntactic proficiency influences a child's use of syntax while reading and that this influence can be seen in oral reading, particularly in contextual appropriateness of errors. It was also presumed that statistical control of word recognition ability would help expose the use of syntactic proficiency in reading by in effect equating subjects on the ability to use graphic cues and allowing the ability to use syntax to vary independently.

The results of this study suggest, however, that oral syntactic proficiency as measured by Chomsky's Linguistic Interview does not relate to contextual appropriateness of oral reading errors but rather to correction behavior. Children at higher levels of language development corrected less in general, corrected graphically dissimilar errors less, and corrected less at two of the four levels of contextual appropriateness, namely Corrected-Pre and Corrected-Sen, than did children at lower levels. Perhaps one could infer that higher language development children are correcting internally errors that they do not correct orally, in other words that these children are using language redundancy to arrive at a correct internal interpretation of a story.

This proposition needs, however, to be tested by further research, using additional language measures and an assessment of reading comprehension. The Chomsky Linguistic Interview may be most useful in a theoretical development of the existence of language acquisition stages rather than as a measure of language development for children. It is also important to note that the tasks in the Linguistic Interview are not strictly syntactic and do involve semantic, conceptual development. It is likely, therefore, that the interview measures an aspect of what is usually included in the construct of verbal IQ. These possibilities need to be considered in further research.

REFERENCE LIST

Barnes, M.D.   An analysis of the oral language of second grade
    children with emphasis upon patterns of sentence structure
    and verbs, and their relationship to factors of reading age,
    mental age, sex, and socio-economic status (Doctoral dis-
    sertation, Indiana University, 1962). Dissertation Abstracts,
    1963, 23, 2815. (University Microfilms No. 62-5773)

Barrie-Blackley, S. Six-year-old children's understanding of
    sentences adjoined with time adverbs. Journal of Psycho-
    linguistic Research, 1973, 2, 153-165.

Berko, J. The child's learning of English morphemes. Word,
    1958, 14, 150-177.

Betts, E.A. Foundations of reading instruction. New York:
    American Book Co., 1946.

Botel, M. Botel predicting readability levels. Chicago:
    Follett, 1962.

Brittain, M.M. Inflectional performance and early reading
    achievement. Reading Research Quarterly, 1970, 6, 34-48.

Cambon, J., and Sinclair, H. Relations between syntax and
    semantics: Are they 'easy to see'? British Journal of
    Psychology, 1974, 65, 133-40.

Chomsky, C. The acquisition of syntax in children from 5 to 10.
    Cambridge, Massachusetts: M.I.T. Press, 1969.

Chomsky, C. Linguistic development in children from 6 to 10.
    U.S.O.E. Final Report Project No. BR-9-A-055, Contract No.
    OEG-1-9-090055-0114(010), U.S. Department of Health, Edu-
    cation, and Welfare, June, 1971.

Cromer, R. "Children are nice to understand': Surface struc-
    ture clues for the recovery of a deep structure. British
    Journal of Psychology, 1970, 61, 397-408.

D'Asaro, L. Comprehension of certain syntactic structures in
    5 to 10 year old children (Doctoral dissertation, Califor-
    nia School of Professional Psychology, Los Angeles, 1973).
    Dissertation Abstracts International, 1974, 34, 5185B-5186B.
    (University Microfilms No. 74-7925)

Evertts, E. An investigation of the structure of children's oral
    language compared with silent reading. (Doctoral disserta-
    tion, Indiana University, 1961). Dissertation Abstracts, 1962,
    22, 3038. (University Microfilms No. 62-184)

Fry, M.   A transformational analysis of the oral language struc-
    ture used by two reading groups at the second grade level
    (Doctoral dissertation, University of Iowa, 1967).   Disserta-
    tion Abstracts, 1968, 28, 3021A.   (University Microfilms No.
    68-929)

Harris, M.   Second grade syntax attainment and reading achieve-
    ment (Doctoral dissertation, University of Pittsburgh, 1974).
    Dissertation Abstracts International, 1975, 35, 7635A.   (Uni-
    versity Microfilms No. 75-13,189)

Hodge, R.W., Siegel, P.M., and Rossi, P.H.   Occupational prestige
    in the United States: 1925-1963.   In R. Bendix and S.M.
    Lipset (Eds.) Class, Status, and Power.   New York: The Free
    Press, 1966, pp. 322-334.

Hood, J.   Qualitative analysis of oral reading errors: The inter-
    judge reliability of scores.   Reading Research Quarterly, 1976,
    11, 577-598.

Hornby, P.   The differential effect of word order, syntactic
    structure, and contrastive stress on one aspect of sentence
    meaning as a function of age.   Unpublished doctoral disser-
    tation, University of Chicago, 1970.

Houston, S.   Syntactic complexity and information transmission
    in first-graders: A cross-cultural study.   Journal of
    Psycholinguistic Research, 1973, 2, 99-114.

Johnson, M.S., and Kress, R.A.   Informal reading inventories.
    Newark, Delaware: International Reading Association, 1965.

Kelleher, R.   Testing, teaching, and retesting syntactic struc-
    tures in children from 5 to 10.   Linguistics, 1973, 115, 15-38.

Kessel, F.S.   The role of syntax in children's comprehension from
    ages 6 to 12.   Monographs of the Society for Research in Child
    Development, Series 139, No. 35, September, 1970.

Kramer, P., Koff, E., and Luria, A.   The development of compe-
    tence in an exceptional language structure in older children
    and young adults.   Child Development, 1972, 43, 121-130.

Loban, W.D.   The language of elementary school children.   Cham-
    paign, Illinois: National Council for Teachers of English, 1963.

McCracken, R.A.   The informal inventory as a means of improving
    instruction.   In T.C. Barrett (Editor), The evaluation of
    children's reading achievement.   Newark, Delaware: Interna-
    tional Reading Association, 1967, pp. 79-96.

McGrath, C., and Kunze, L. Development of phrase structure rules involved in tag questions elicited from children. *Journal of Speech and Hearing Research*, 1973, 16, 498-512.

Olds, H. *An experimental study of syntactical factors influencing children's comprehension of certain relationships* (Center for Research and Development on Educational Differences, Report No. 4). Cambridge, Massachusetts: Harvard University Publications Office, 1968.

Palermo, D.S., and Molfese, D.L. Language acquisition from age five onward. *Psychological Bulletin*, 1972, 78, 409-428.

Ribovich, J. First-grade children's comprehension of selected oral language syntax and its relationship to reading comprehension (Doctoral dissertation, University of Maryland, 1975). *Dissertation Abstracts International*, 1975, 36, 3391A. (University Microfilms No. 75-29,129)

TEST REFERENCES

Lorge-Thorndike Intelligence Tests. I. Lorge, R.L. Thorndike, and E. Hagen. New York: Houghton Mifflin, 1964.

Primary Reading Profiles. J.B. Stroud, A.M. Hieronymus, and P. McKee. New York: Houghton Mifflin, 1968.

Standard Reading Inventory. R.A. McCracken. Klamath Falls, Oregon: Klamath Printing Co., 1966.

Oral Reading Characteristics Associated with the
Language Development of Second-Grade Children (HYP)

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In order to investigate qualitative oral reading dif-
ferences associated with language development, tape recordings
of oral reading were evaluated from two groups of second-grade
readers representing two levels of language development as
determined by the Chomsky (1971) Linguistic Interview. The
analysis of errors revealed that children in the higher language
group corrected less particularly at the sentence and passage
levels and that they corrected graphically dissimilar miscues
less than the lower language group, suggesting that with in-
creased language sophistication children make corrections "in
their heads" and do not find it necessary to be verbally
accurate in order to comprehend.