THE RELATIONSHIP BETWEEN WIDE READING AND LISTENING COMPREHENSION OF WRITTEN LANGUAGE

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ABSTRACT

This study was the first to examine the relationship between wide reading and listening comprehension in the first language. It answered two questions concerning this relationship. First, higher levels of wide reading were associated with stronger listening comprehension ability. Second, there was indirect evidence to suggest that wide readers may be increasing their listening comprehension ability. One hundred and twenty fourth graders were measured on general language ability, estimated amount of wide reading, and reading-related language ability. A hierarchical regression logic was used to isolate the relationship between wide reading and reading-related language development. Further research that more directly investigates the relationship between wide reading and reading-related language development is called for.

Few, if any, reading theorists or researchers would question the importance of oral language facility for learning to read. The use of the language-experience approach, the insistence on natural language patterns in the books to which emerging and beginning readers are exposed, even the practice of reading books aloud to young children, all assume that orality usually serves as the foundation on which reading is built. Another common educational practice that assumes a relationship between language and reading development has been the use of a measure of listening comprehension as part of a reading assessment. Two of the major standardized diagnostic reading tests include measures of listening comprehension (Durrell
& Catterson, 1980; Spache, 1981). Most of the commercially available informal reading inventories also contain directions for obtaining a listening comprehension level (Bader, 1983; Burns & Roe, 1993; Ekwall & Shanker, 1993; Johns, 1994; Rakes, Choate, & Waller, 1983; Silvaroli, 1986; Stieglitz, 1992; Woods & Moe, 1989). In other words, such educational practices as these follow from an apparent consensus among reading and language authorities, as well as practitioners, that reading development somehow builds on language development.

Before learning to read most children have already acquired complex oral language abilities. Language development, however, continues least through adolescence (Chomsky, 1972; Goodluck, 1991; Karmiloff-Smith, 1979; Larson & McKinley, 1987; Menyuk, 1988; Nippold, 1988a, 1988b; Nippold, Schwarz, & Undlin, 1992; Scott, 1988; Skarakis-Doyle & Mentis, 1991). Since evidence supports continued language development, it is logical to ask about relationships between language and reading beyond age seven. Does language continue to be the basis of reading? Does reading influence language development? These questions served as the impetus for a study that investigated whether wide reading (high quantity with at least some variety) is related to the later language development of children as they progress through school. The study was based on the assumptions that (a) there are ordinarily important differences between oral and written language, (b) fourth graders will seldom have had enough exposure to formal oral language (e.g., lectures and speeches) for it to contribute significantly to later language development, and (c) almost all children beyond first grade are exposed to written language much more through reading than being read to (i.e., it is likely that conversations heard represent most of oral language exposure).

Likenesses and Differences Between the Language of Written Text and the Language of Conversation

Although both conversation and written text are language containing words and thought units for communicating, written text is not simply oral expression written down. Norris (1991), for example, suggests using written text as the basis for remediation with children who are experiencing language difficulties because written language more often contains elements of language that are especially troublesome to these children, including abstract vocabulary, complex syntactic structures, inflectional morphological forms, cohesion, inference, temporal relationships, and different types of discourse structure.

The nature of the differences between conversation and written language has been documented and summarized from the reading theorists’ perspective by Graesser, Golding, and Long (1991), and from the language theorists’ perspective by Kamhi and Catts (1989). Common differences between conversation and written language are delineated in both perspectives.

Typically, conversation is interactive and less planned than written language. Written language is normally experienced by the reader individually. The reader cannot ask questions for clarification or get immediate responses from the sender...
of the message, and hence, the text must bear the full burden of the communication.

Another difference between oral and written communication is in function. The function of conversation is usually social in nature, whereas written language principally conveys information.

Conversation and written language also differ in how they use paralinguistic and prosodic features. Although the paralinguistic features of voice quality (e.g., hoarseness, male/female, etc.) may not affect the actual meaning of oral language, it does affect the listener’s attitudes toward what is said. Written language analogously can use punctuation to signal intonation and stress, but oral language is much more efficient in conveying these features.

There are grammatical differences between oral and written language as well. Oral language often involves many words to convey very little new information. Written language is typically more lexically dense (however, see Halliday, 1987, for a differing opinion), with more idea units integrated even within clauses (Graesser et al., 1991).

These differences, however, should not be taken to mean that there is always a clear-cut distinction between written and oral language. According to Tannen (1985), some features of a more oral tradition can be found in written text, whereas some more literate features can be found in spoken language. She notes that the real distinction is not necessarily between orality and literacy, but may be found in the “relative focus on involvement” (p. 127). Conversation focuses on interpersonal involvement since context is shared and relationship with the communication partner is the focus rather than the message or information that can be relayed (Tannen, 1985). From a linguistic perspective, Biber (1988) similarly proposed that written and oral language fall on continuous multiple dimensions of linguistic features rather than being placed on a strict dichotomy. Therefore, some speaking can be more written-like (e.g., speeches), whereas some writing can be more spoken-like (e.g., the narrative in young children’s books).

The Relationship Between Language Growth and Reading Growth

We assume that conversation and written language are sufficiently different to warrant a distinction between general, oral language development (ability to produce and understand oral language structures) and reading-related language development (ability to comprehend written language structures). Yet, this distinction must not be taken to mean that there are not also important commonalities and relationships between the two.

Primacy of speech over print. Oral language comprehension ordinarily precedes written language comprehension. That is, most children are exposed to years of oral language prior to learning to read. Studies of listening comprehension have tended to support the primacy of oral language in learning to comprehend written language. In this research, listening comprehension instruction has usually brought
about improvements in both listening and reading comprehension scores (Pearson & Fielding, 1982; Sticht, Beck, Hauke, Kleinman, & James, 1974; Sticht & James, 1984), demonstrating an orality-to-literacy transfer.

This view of the relationship between oral and reading-related language development—that language development ordinarily occurs orally and then literacy is built on and derives from that base—has been and remains the predominant one. Walter Loban (e.g., 1976) has probably been the principal language arts educator who has defended the primacy-of-oral-language view. Buckley (1992) credits Loban’s view of the primacy of oral language with providing the rationale for today’s integrated language arts education.

**Primacy of print over speech.** Though not predominant, the primacy-of-print-over-speech view has been argued by Stubbs (1980). He reasons that written language has achieved social primacy in a culture if there is evidence that written language influences oral language. For this evidence, Stubbs (1980) cites well-known examples of common pronunciations altered over time to reflect the spelling of the particular word (e.g., *often* historically pronounced without voicing the /t/, but now frequently pronounced with the /t/). It is rare that the reverse is true, where established spellings of words are influenced to change by pronunciations (Stubbs, 1980).

Sticht and James (1984) argued for a reciprocal relationship between reading and listening comprehension development that they termed “literacy to oracy [orality] transfer.” Unfortunately, they cited no cross-modality or other intervention research that has specifically investigated the existence of these reciprocal effects. In light of current research on the relationship between reading and language development, Kamhi and Catts (1989) also argue for the minority primacy-of-print-over-speech view. They conclude that “the relationship between spoken and written language is dynamic and reciprocal” (p. xiii).

Krashen (1989) provides more support for the reciprocal relationship between spoken and written language with his Input Hypothesis (IH). The IH assumes that we learn language by “incidental learning.” In other words, as the child focuses on meaning, he or she acquires the form of the language incidentally, without consciously learning it. In the context of current research on second language learning, Krashen’s IH has received empirical support in studies that used large amounts of simple reading to increase the oral language abilities of the children in the second language (Elley, 1991; Elley & Mangubhai, 1983; Neuman & Koskinen, 1992; Tudor & Hafiz, 1989).

**WIDE READING**

In several investigations over the past decade, wide reading has been implicated as a major avenue of learning a number of knowledges and abilities once
considered to increase primarily as the result of either maturation or direct teaching (Krashen, 1993). Several studies have indicated that wide reading may be the principal avenue of meaning vocabulary learning (Herman, Anderson, Pearson, & Nagy, 1987; Nagy, Anderson, & Herman, 1987; Nagy, Herman, & Anderson, 1985; West, Stanovich, & Mitchell, 1993). Other studies have suggested that wide reading of books may be a major means of learning both sight words and spelling words (A. Cunningham & Stanovich, 1990; Stanovich & West, 1989). Two studies have found wide reading to predict reading comprehension growth beyond the variance explained by reading comprehension itself measured in earlier grades (Anderson, Wilson, & Fielding, 1988; Cipielewski & Stanovich, 1992).

Rationale for the Study

This study investigated the relationship between wide reading and listening comprehension of written language. The study was primarily designed to investigate the following research question: “Are higher levels of wide reading associated with greater ability to comprehend written language read aloud?” In a search of the literature, no studies were found that investigated the relationship between wide reading and listening comprehension of written language in the child’s first language. A second research question was: “Is there indirect evidence to suggest that wide readers may be increasing their listening comprehension ability by their reading?”

To directly determine directionality, longitudinal and intervention studies would be needed. These types of studies, however, are time consuming and expensive to conduct without first determining whether there is a statistically and educationally significant relationship between wide reading and listening comprehension of written language (Underwood, 1975). Although determining the directionality of the relationship between oral and written language development was beyond the scope of this study, results from carefully chosen instrumentation and statistical analyses might suggest whether longitudinal and intervention studies on this issue would be justified.

Method

Subjects

The subjects for this study were 120 fourth-grade children (54 boys and 66 girls) recruited from four public elementary schools located in a small city in the southeastern United States. These schools drew from middle and working class families who lived within the city limits. The city was a rural municipality located about 30 miles from the nearest large city. There was a technical college in the city.
Most of the people worked locally. 26.8% of the children in the school system were on free or reduced lunches.

Children identified as receiving special education or speech/language services, and students who were identified as speaking English as a second language (ESL), were excluded from the sample because the focus of this study was on modal or normal relationships between reading and language. The students in the study included 72.5% white, 25% black, and 2.5% Hispanic. This breakdown approximated the racial mix of the total city school system (79.6% white, 17.1% black, and 2.3% Hispanic).

Instrumentation

Standardized oral language measures. Each child was individually administered one subtest of the Test Of Language Development-Intermediate (Second Edition) (TOLD-I 2) (Hammill & Newcomer, 1988) to measure oral language understanding and use. Although the entire battery of the TOLD-I 2 measures later language development, only one subtest, that is, Sentence Combining (SC) qualified for use in this study for conceptual and statistical reasons. A subtest was needed that would measure the construct of oral language development without tapping into reading-related language development. Reading-related language development, however, is difficult to separate from later language development. To overcome this difficulty, the test used to measure oral language development could not be highly correlated with ability to understand more text-like language. Explanations for eliminating all but one (SC) TOLD-I 2 subtests are as follows: (a) Factor analysis reported by the developers of the test reveal that all the subtests yielded a single factor; (b) Specifically, SC loaded on to the common factor at .79; and, (c) Only two subtests, that is, SC and Generals (GL) did not significantly correlate with a reading-related language composite as measured on the Test of Adolescent Language (TOAL) (Hammill, Brown, Larsen, & Wiederholt, 1980, 1987).

Therefore, the SC subtest was used as our measure of later oral language development. During it, children are given two or more sentences orally and asked to combine them into one sentence, making it as short as possible without changing the meaning. To score each item, the test administrator compared the child's answer to the acceptable choice or choices given in the manual. The child got credit only if the answer given matched one of the choices exactly. The authors of the TOLD-I 2 reported that SC has an internal consistency reliability (coefficient alpha) of .91 for age 9, .88 for age 10, and .82 for age 11.

Measure of reading-related language development. With SC acting as a measure of general language development, a measure of reading-related language development was also needed to shed light on the second research question concerning directionality and to solve the fundamental design problem of this study which was to distinguish the effect of wide reading on listening comprehension of written
language from the probable relationship that children with more developed oral language are also more likely to read widely. This measure was the Formal Listening Inventory (FLI), a test adapted from one form of the Formal Reading Inventory (Wiederholt, 1985). This test was a measure of the subjects’ ability to understand paragraphs read aloud to them. The Formal Reading Inventory was modified to produce a listening test to achieve a formal listening comprehension measure for the kind of language students would be expected to read on a formal silent reading comprehension measure.

The Formal Reading Inventory (Wiederholt, 1985) was adapted to become a Formal Listening Inventory (FLI) and administered to each classroom as a group. Nine reading passages and their accompanying multiple-choice questions were used to measure listening comprehension ability at the paragraph level. The passages were read aloud, with nothing repeated. After each passage was read aloud to the group, the questions for that selection were placed on overheads and shown to the group one at a time as the test administrator read them aloud once. An exception was made with questions requesting the students to select the choice that was not found in the passage. These questions were repeated once for emphasis, but the choices were then read only once. The students then selected their choice by circling the corresponding letter (A, B, C, or D) on their answer sheet.

The scores on each test item on the FLI were entered separately and reliability was calculated. Using all items produced an internal consistency reliability (coefficient alpha) of .73. Three items with the lowest item-test correlations were then excluded and a final internal consistency reliability (coefficient alpha) of .75 was found using the remaining 42 items.

The Title Recognition Test. The Title Recognition Test (TRT) is a proxy measure of children’s wide reading developed by A. Cunningham and Stanovich (1990) to overcome the difficulties of measuring wide reading by traditional methods such as interviews or reading diaries. There is evidence that the TRT measures the same construct as these more traditional measures (Allen, Cipielewski, & Stanovich, 1992). The test has 40 items that include 15 foils for book names randomly interspersed among 25 authentic children’s book titles. The subjects put checks in front of the titles of books they recognize without having to retell the stories or volunteer titles. Scores from the test are computed by subtracting the proportion of foils checked from the proportion of correct titles checked. In this study, the original TRT was adjusted by replacing any titles reported as being part of the school curriculum, including selections in the system’s basal reading series and any books read aloud by the teachers. From this process, three titles were replaced using popular book titles recommended by the schools’ media specialists. In previous studies utilizing the TRT (Allen et al. 1992; Cipielewski & Stanovich, 1992; A. Cunningham & Stanovich, 1990), developers obtained an estimate of internal consistency reliability of .70 (coefficient alpha), .80 (coefficient alpha), and .81 (coefficient alpha) respectively. Fourth-grade subjects were used in this study, and all titles that teach-
ers had read-aloud to students were eliminated from the TRT to make it unlikely that TRT scores would indicate wide listening to books read aloud.

**Procedure**

The SC was administered individually for each subject. The FLI and the TRT were administered as group tests in that order in eight classrooms.

**Design**

The study used a hierarchical regression logic to isolate the relationship between wide reading and reading-related language development. The study examined the relationship of wide reading and the ability to comprehend written language while listening, with and without statistically removing the effect of general, oral language ability beforehand. After the intercorrelation matrix was generated, a hierarchical multiple regression logic was used to remove the influence of the confounding general language variable associated with wide reading and listening-comprehension-of-written-text ability. According to Stanovich (1993), this approach to data analysis is quite conservative and sets up a "worst case" scenario for a variable’s true effect to be "stolen" by other variables which themselves may have been impacted by wide reading. In other words, it is possible that performance on the SC may improve somewhat over time from wide reading. To the extent that may occur, this design provides conservative evidence for a relationship between wide reading and reading-related language development.

**RESULTS**

Three variables were analyzed. Table 1 presents the means and standard deviations of the three variables. Raw scores were used except for the TRT (Title

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Possible Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Recognition Test</td>
<td>35%</td>
<td>19%</td>
<td>-100–100%</td>
</tr>
<tr>
<td>Formal Listening Inventory</td>
<td>26.34</td>
<td>5.46</td>
<td>0–42</td>
</tr>
<tr>
<td>Sentence Combining</td>
<td>16.08</td>
<td>3.85</td>
<td>0–25</td>
</tr>
</tbody>
</table>

*Note. N=120. Scores on FLI and SC are raw scores. Scores on TRT are obtained by subtracting the proportion of foils checked from the proportion of correct titles checked. A -100% score would mean that the student checked all of the foils and none of the correct book titles. A 100% score would mean the student checked none of the foils and all of the correct titles.*
Recognition Test). The TRT score was the proportion of foils checked subtracted from the proportion of correct answers checked. Table 2 presents the intercorrelations between the measures of language (SC—Sentence Combining and FLI—Formal Listening Inventory) and wide reading (TRT).

All three variables significantly correlated with each other at the .01 level (two-tailed test). The lowest correlation in the matrix was between TRT and SC (15.1% of variance accounted for), and the highest correlation was between TRT and FLI (27.1% of variance accounted for). In other words, all intercorrelations among variables were low to moderate in size.

The hierarchical multiple regression model was analyzed. The model entered SC as the first predictor and the TRT as the second predictor. The results of this analysis are presented in Table 3.

The partial correlation between the TRT and FLI was .42 (18% variance accounted for). The analysis indicated that although general language development accounted for a moderate amount of the dependable variance in listening-comprehension-of-written-text ability (18.7%), performance on the wide reading measure explained significant additional variance (14.7% unique variance for the TRT). Considering the worst case scenario, however, this may underestimate the impact of wide reading on listening-comprehension-of-written-language ability. Whatever

Table 2

Intercorrelations Among the Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Title Recognition Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Formal Listening Inventory</td>
<td></td>
<td>.52</td>
</tr>
<tr>
<td>3. Sentence Combining</td>
<td>.39</td>
<td>.43</td>
</tr>
</tbody>
</table>

Table 3

Hierarchical Multiple Regression with General Language Development (SC) and Wide Reading (TRT) Predicting Listening-Comprehension-of-Written-Text Ability

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>R</th>
<th>R2</th>
<th>R2 Change</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SC</td>
<td>.433</td>
<td>.187</td>
<td>.187</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>2</td>
<td>TRT</td>
<td>.578</td>
<td>.334</td>
<td>.147</td>
<td>p&lt;.01</td>
</tr>
</tbody>
</table>
variance in SC scores may have resulted from wide reading possibly decreased the dependable variance in Formal Listening Inventory scores that TRT would have otherwise predicted. The simple correlations between TRT and FLI (.52) and between TRT and SC (.39) lend some support to that possibility.

DISCUSSION

This study investigated the relationship between wide reading and listening comprehension of written language. The simple correlational results of this study indicated that high levels of wide reading were associated with greater ability to comprehend written language while listening. To our knowledge, this study is the first to investigate this relationship, even though the results would not surprise most reading and language theorists.

The competing explanations for this relationship are: (a) good listening comprehenders choose to read more in their spare time; (b) wide readers learned to comprehend written language better regardless of the mode used to assess that ability; or (c) both a and b.

If the explanation is "a," then the direction of the relationship between oral and written language development is one-way (the primacy-of-oral-language view). If the answer is "b" or "c," then the direction of the relationship between oral and written language development is, at least in part, reciprocal (the primacy-of-print-over-speech view). Because of its correlational nature, however, this study cannot provide a clear-cut answer to the question of whether wide reading increases listening comprehension. The results could simply mean only that good listening comprehenders read more in their free time. The directionality of the relationship this study has established could only be determined by an intervention study that successfully induced some children to read more widely and later measured their ability to comprehend written language while listening in comparison to an equivalent group that was not induced to read widely and did not.

That said, this study was also designed to provide a soft and indirect test of the directionality of the relationship between language and reading. The Sentence Combining subtest of the TOLD-I 2 was used to provide an indicator of general, oral language development. If subjects simply read more because they are better listeners, then presumably their listening is a function of their overall language development rather than a function of their amount of reading. Therefore, placing a measure of general, oral language development in front of a measure of wide reading in a multiple regression equation should eliminate the significant relationship between wide reading and ability to comprehend written language while listening. On the other hand, if wide reading contributes to the development of listening comprehension for written text, then amount of wide reading should continue to significantly predict listening comprehension even after the variance accounted for by general, oral language development has been removed.
Because this study found that an estimate of wide reading significantly predicted a measure of listening comprehension for written language after the relationship between general, oral language development had been partialed out, the study provides some support to the idea that wide reading may improve the ability to comprehend written language read aloud.

Since we searched in vain for a compelling measure of later language development that was not a meaning vocabulary or formal language comprehension measure, we employed the Sentence Combining subtest of the TOLD-I 2 as the best measure available. If better measures of general, oral language development were to appear, it is possible they would account for more of the variance in the FLI and, thus, reduce or even eliminate the partial correlation between amount of wide reading and ability to comprehend written language read aloud. Still, at this point, the multiple correlation of .58 between SC+TRT and FLI seems relatively high, given the reliabilities of the three measures. It also is intuitively sensible that ability to listen to written language could be a function of both general, oral language development and amount of wide reading.

Based on the results of this study, it would be a logical next step to conduct intervention research using as subjects students who were reading “at or near potential” as estimated by a listening comprehension test, and using as the intervention a program designed to increase dramatically the subjects’ amount of reading. The subjects selected should also have adequate decoding abilities to engage in and benefit from their wide reading. The dependent variables for this intervention study should probably include a reading comprehension test and a measure of wide reading as well as a listening comprehension test.

Effect of Language Growth on Reading Growth: One way or Reciprocal?

The results of this study lend positive but inconclusive support for a reciprocal relationship between language and reading growth. If wide reading is only an effect rather than also a cause of language growth, it is difficult to understand why wide reading would still correlate significantly with listening comprehension after general language development is accounted for. Still it is possible that being read to at home from books not on the TRT could have raised the listening comprehension levels of some subjects who then read more of the books that were on the TRT. Our selection of fourth graders as subjects made that possibility unlikely but did not completely rule it out. Additionally, it is unlikely because of the age of the subjects that high listening scores were a result of more text-like language exposure (such as in formal speeches).

Conclusion

This study was the first one that looked at the relationship between wide reading and listening comprehension of written text in the first language. The major finding of the study was that exposure to written language is implicated in the
development of reading-related language ability. That wide reading may itself foster the potential to learn to read better is an exciting possibility that awaits more direct confirmation. That wide reading may be superior to teacher read-aloud in developing reading-related language is also a possibility that should be directly investigated. Moreover, those who would administer a listening comprehension test as part of a reading assessment may want to consider interpreting the results of that test as saying more about a student's need to engage in wide reading than whether or not that student may be reading "at potential."

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