

State Reform Policies and the Task for First-Grade Readers

Elfrieda H. Hiebert

University of Michigan

Running head: Task of First-Grade Texts

[Submitted for publication]

Abstract

Since the late 1980s, reading reform efforts in California and Texas have led to significant changes in reading textbook design. This paper examines whether these policy changes are supported by research.

Because little research exists on what textbook characteristics support beginning readers, the paper begins with a review of trends in textbook design over the past 80 years and continues with an exploration of the cognitive and linguistic challenges that beginning readers face. The Text Elements by Task (TE_xT) model—a theoretical framework on the role of texts in beginning reading acquisition—is then introduced. This model was applied to current mainstream textbook programs and historical texts to discover the task each poses to beginning readers. The number of total and unique words, word repetition, and word characteristics in each text were analyzed.

The application of the model revealed a number of surprising trends. For example, 41% of the unique words in textbooks developed under Texas mandates are *singletons*—appear only once in a text. Furthermore, the historical analysis showed that between 1962 and 1993, the number of unique words and singletons and their pace of introduction have increased dramatically, while the amount of word repetition has been curtailed. The paper draws a number of provocative conclusions from these data, including the observation that children entering first grade are now expected to acquire new words at the same pace as exiting second graders.

State Reform Policies and the Task for First-Grade Readers

Texts can take a variety of forms but, by definition, reading involves a text. The texts that constitute at least part of the reading experience for many first graders come from textbook programs. A high percentage of American teachers (85%) reports using the texts of textbook programs for reading instruction (Baumann, Hoffman, Duffy-Hester, & Ro, 2000). Scholars have identified textbook programs as sources for reform in that these programs are already “scaled up” (Ball & Cohen, 1996).

This observation is not new to policymakers in California and Texas. Over the past 15 years, they have made textbooks a central plank of their reform efforts in reading education. As America’s two largest states, California and Texas account for a sizable portion of a national age cohort. Further, these states adopt textbooks centrally, which means that their districts can use funds only for textbook programs that have been approved for purchase by a statewide committee or agency. The size and California and Texas and their central decision-making procedures mean that their mandates have a great deal of influence over the textbook programs that publishers design. Consequently, children and teachers in other states are likely to be subject to the reform efforts initiated by policymakers in California and Texas.

In its 1987/88 guidelines, California asked publishers to provide language arts/reading textbooks containing authentic literature or text without controlled or contrived vocabulary (California English/Language Arts Committee, 1987). Prior to this mandate, the characteristics of textbooks for beginning readers had been fairly stable for decades (Hockett, 1938; Morris &

Johns, 1987; Olson, 1965; Perry & Sagan, 1989; Rodenborn & Washburn, 1974). The number of words in texts had changed as a result of Chall's (1967/1983) review but, for a period of almost 60 years prior to the 1987/88 California textbook specifications, generations of American first graders read texts that emphasized high-frequency words. The new California guidelines indicated that texts that had been written to control for readability or to emphasize particular groups of words would not be adopted for use in California. In its 1991 guidelines to educational publishers for its 1993 textbook adoption, Texas followed suit (Texas Education Agency, 1990). The subsequent textbook adoption in California in 1995/96 retained the same guidelines but, by the late 1990s, many concerns were being raised about language arts/reading textbooks, particularly for first graders. The rhetoric for reading reform mounted when the results of the first state-by-state comparison on the National Assessment of Educational Progress (NAEP) revealed that California was tied with Louisiana for the 39th out of 40 ranks (Campbell et al., 1996). With its 1997 proclamation, Texas (Texas Education Agency, 1997) shifted gears and called for a different type of text for beginning readers—decodable texts. In its 2000 guidelines for its 2002 textbook adoption, California followed Texas's lead (California English/Language Arts Committee, 2000).

Presumably, the recommendations of policymakers are derived, in one manner or another, from the prominent perspectives of the scholarly community, but the interpretations that result from political lobbying and decision-making may deviate considerably from the original models (Kingston, 1995). This paper describes the characteristics of textbooks that are the end-

products of specific policies on the features of reading textbooks advocated by policymakers and state bureaucrats over the past 15 years. This paper also examines the cognitive and linguistic processes that beginning readers require to be successful with the first texts of these mainstream reading programs.

The selection of the particular cognitive and linguistic processes that are required for success with current beginning reading textbooks emanates from a theoretical framework on the role of texts in beginning reading acquisition—the Text Elements by Task (TE_{XT}) model. Its name reflects the emphasis on delineating the aspects of the reading task that are required to successfully read a text. The foundation for this theoretical framework will be presented after a review of the prominent texts that have been used for beginning reading instruction in the United States over the past 80 years. It is only against this backdrop that the need for a model of text and a focus on the tasks posed by texts become evident.

Models of Text in Reading Acquisition

Dick and Jane: A Behaviorist Model

Gray's model of the role of texts in reading acquisition (Elson & Gray, 1930; Gray & Leary, 1935) was so obvious that it has been caricatured by generations of individuals who learned to read from these texts. Texts such as “Go, go, go. Go, Dick, go. Help, help!” (Gray, Monroe, Artley, Arbuthnot, & Gray, 1956) complied with Gray's model of optimal texts for beginning reading acquisition. The model is straightforward: If the most frequent words in written English (Thorndike, 1921) are taught to children initially in accordance with Thorndike's

four laws of learning—effect, exercise, readiness, and identical elements (Thorndike, 1903)—children will learn to read. The 1956 Scott Foresman first preprimer (Gray et al., 1956) operationalized the model: Each of the 17 words appeared a minimum of 12 times (the laws of exercise and identical elements). The law of readiness was evident in the pacing of words with no page presenting more than one new word and no story introducing more than three new words. The law of effect meant that correct reading of the story led to “a satisfying conclusion” (Gray et al., 1956). While generations of Americans remember the Dick and Jane genre as dominating their primary-grade experiences, this model was actually a temporary scaffold. With the first-grade reader (which followed the three preprimers and the primer), stories about Dick and Jane were replaced with fables and truer narratives. After the primer, the formula of word repetitions and appearances was replaced with readability formulas that were somewhat more lenient in their word repetition requirements. After Gray implemented this model with the 1930 edition of Scott Foresman, the involvement of educational psychologists and the use of the behaviorist model in the design of beginning reading texts were duplicated at other publishing houses by such prominent scholars as Gates, Bond, and Betts (Smith, 1934/1965).

Although phonetically regular words, rather than high-frequency words, had been advocated by some as the proper unit of learning from the inception of primerese, this perspective did not gain popularity until the 1950s (Flesch, 1955). The late 1950s and early 1960s saw the introduction of a number of beginning reading programs in which phonetically regular words formed the basis for texts (Bloomfield & Barnhart, 1961; Rasmussen & Goldberg,

1964). Thorndike's laws of learning (1903) were applied to texts based on phonetically regular words as well, as a page from one of these texts illustrates: "Dad ran. Ann ran. Dad and Ann ran" (Cassidy, Roettger, & Wixson, 1987, p. 15). Such phonetically regular texts never came to dominate beginning reading instruction to the degree that programs based on high-frequency words did. During every wave of reading reform, however, phonetically regular text has been and continues to be proposed as a primary solution for reading problems (e.g., Flesch, 1957; Grossen, 1997).

Cognitive Science: Debunking Readability Formulas

The primers of basal reading programs were less pure in their implementation of Gray's model after Chall's (1967/1983) critique of the model and the involvement of psycholinguists in textbook design in the 1970s (Goodman et al., 1974). But the fundamental model remained intact until perspectives from cognitive science were brought to bear on the effects of readability formulas on comprehension. The studies that debunked the behaviorist model of text were not conducted with the preprimer and primer texts that were the focus of the behaviorist model of text but with texts for older students that had been manipulated to conform to readability formulas. Second graders were the youngest students in the studies that demonstrated that texts manipulated to conform to readability formulas created difficulties for comprehension, rather than supporting it (Beck, McKeown, Omanson, & Pople, 1984; Brennan, Bridge, & Winograd, 1986).

In presenting the findings of cognitive scientists on texts in Becoming a Nation of Readers, Anderson, Hiebert, Scott, and Wilkinson (1985) did differentiate between the earliest texts for beginning readers and those for slightly older readers: “Reading primers should be interesting, comprehensible, and give children opportunities to apply phonics.... After the very earliest selections, primers should tell complete, interesting stories.” In response to the question, “Is it possible to write interesting, comprehensible, and natural-sounding selections for young readers while at the same time constraining the vocabulary on the basis of letter-sound relationships?” (p. 118). Anderson et al. (1985) suggested three guidelines: (a) creating a sequence of letter-sound relationships that will permit as rich as possible a set of words, (b) including some useful irregular words, and (c) including some regular words that embody letter-sound relationships that have yet to be introduced but contribute to interesting and meaningful stories. To demonstrate that texts could use “the technical requirements for a controlled vocabulary and at the same time tell a story and use language in artful ways” (p. 48), Anderson et al. identified Dr. Seuss’s Green Eggs and Ham (Geisel, 1960).

The call to loosen the control of high-frequency words in elementary texts as a whole, including the primers, struck a chord with American teachers. But substantial attention had not yet been directed to designing or studying alternatives for beginning readers when policymakers in California issued their 1987/88 mandate for authentic literature. While models of the processes of beginning reading and growth in word recognition had emanated from cognitive science (Adams, 1990; Ehri, 1991, 1998; LaBerge & Samuels, 1974; Perfetti, 1992; Stanovich, 2000),

these models had not described how particular text features support or detract from reading processes.

Authentic Literature: Predictable Texts

While cognitive scientists conducted the research that underlay the elimination of texts based on the behaviorist model, a perspective grounded in social constructivism guided what Hoffman and his colleagues (1994) characterized as the new generation of texts. These new texts were based on authentic literature. The rationale for authentic literature can be found in a variety of sources, including Alvermann and Guthrie's (1993) identification of reader engagement as a central construct in reading. Hoffman et al. (1994) applied the construct of "engagingness" to the new texts that had emerged as a result of the Texas mandate for authentic literature. On measures of design, content, and language, the 1993 texts, which contained recognizable trade book selections, were judged to be more engaging than the 1987 texts, which had controlled vocabularies. Hoffman et al. also analyzed the decodability and predictability of these new texts as evidence of literary quality. Decodability was assumed to be an indication of specially written or contrived texts. The proportion of words that fit into the simplest decoding categories was substantially smaller for the 1993 than for the 1987 texts. As for predictability, which is evident in features such as a repeated pattern, rhythm, and rhyme—characteristics that have been proposed as supporting engagement among beginning readers (Holdaway, 1979)—Hoffman et al. showed that over 50% of the selections in the 1993 texts had features associated with predictable text, compared to 20% of the earlier texts.

Predictable texts that use the repetition of phrases or sentences are not new. Most nursery rhymes follow a predictable pattern. Further, such texts had been used previously as the basis for beginning reading instruction. For example, Ginn and company published a reading primer (Stickney, 1885) with The House That Jack Built as its first selection. The domination of Gray's model over a 50-year period, however, meant that mainstream texts had not incorporated predictable text. The genre had been resurrected in the early 1970s, supported by the redistribution of Huey's (1908/1965) The Psychology of Reading describing the usefulness of nursery rhymes and tales for beginning reading instruction. While predictable text did not fare well in textbook adoptions when such texts were part of a basal reading program in the 1970s (Goodman et al., 1974), both Texas and California allowed use of ancillary funds for a program of predictable texts called "The Sounds of Language" in the late 1960s and early 1970s (Martin & Brogan, 1971).

Descriptions of the pedagogy of predictable texts began to be distributed, most notably that of Holdaway (1979). Fundamentally, this perspective holds that children will repeatedly read engaging texts, particularly when texts contain rhythm and rhyme. Through the repeated readings, children will attend to words. The rhyming nature of the texts will support children's attention to similarities in the letter-sound relationships of English. But the theory and its empirical validation remained limited. Precisely when should the scaffold be pulled back? What do children learn when predictable texts contain an abundance of different, high-meaning words? Researchers had not yet addressed these questions when predictable texts began to dominate the

mainstream textbooks of California and Texas, and subsequently the rest of the country. Barely a handful of studies on predictable texts existed (Hiebert & Martin, 2001), and none was published in an archival research journal. Further, some of the findings directly contradicted the use of predictable texts as a means of developing independent word recognition. Children who are not already reading at least a small core of words independently tend to draw upon their aural memory of the predictable pattern while reading, as evidenced by their inability to identify words when the predictable pattern is withdrawn or changed (Leu, DeGross, & Simons, 1986). When the Foorman, Francis, Fletcher, Schatschneider, and Mehta (1998) study identified problems with children's learning through authentic literature, these texts were blamed. Children's success was credited to decodable texts in the Foorman et al. study, although the distinction between the programs was in the instructional routines of the teachers' manuals, not the student books (Menon & Hiebert, 2000; Menon, Martin, & Huxley, 2000).

Decodable Text

Applying the same criteria that had been used in the Hoffman et al. (1994) analyses of the 1993 texts, Hoffman, Sailors, Patterson, and Mast (2000) reported that the first-grade texts on the Texas-approved list in the 2000 adoption scored lower in engagingness than their predecessors. Further, the level of predictable text support has declined, although the number of unique and total words has not changed. The findings reported by Hoffman, Sailors et al. (2000) reflected the Texas Education Agency's mandate (1997) that first graders read from texts where 80% of the words are decodable. The words that met the 80% criterion needed to have the "potential for

accuracy” (Beck, 1981). According to Beck and McCaslin (1978), lessons on the consonants *c*, *t*, and *n* and the short vowel *a* would mean that the words *can*, *cat*, and *Nat* in the text had the potential for accuracy. If *nag* were introduced, however (and a lesson on the consonant *g* had not been previously provided), this word would have only a partial potential for accuracy. Beck and McCaslin applied this criterion to eight series published in the mid-1970s and reported that texts from the first third of first grade in four phonics programs contained significantly higher percentages of decodable words (69–100%) compared to texts from traditional basal programs (0–13%). It should be noted that Beck and her colleagues never studied children’s reading development with these texts, the number of different words in a single text that children could decode and continue to make sense of the text, or even the number of lessons needed on a particular letter-sound relationship before children could apply their knowledge to an unfamiliar word. The texts of the early 1970s that Beck and her colleagues had contrasted with the phonics programs had been based on the behaviorist model of text, where repetition and pace was highly controlled.

Stein, Johnson, and Gutlohn (1999) examined the texts that were presented for the Texas textbook adoption for compliance to the 80% decodability criterion. Stein et al. recognized, however, that many of the high-frequency words that make up much of text are not decodable. Hence, they determined the potential for accuracy of a series by adding the percentage of decodable words to the percentage of high-frequency words. They reported that the texts for one program had only words that achieved the potential for accuracy criterion. The three other

programs were close to the 80% level set by Texas: the lowest for any of the other programs was 79%. Once more, however, questions about the number of lessons that children require to recognize a letter-sound correspondence in unfamiliar words or the number of new words per text that beginning readers can manage were not addressed.

The Task of First-Grade Texts: Linguistic-Cognitive Processes

Debating the percentages of words in texts that should have particular letter-sound correspondences or the advantages of using predictable stories in beginning reading instruction has not proven particularly productive. A more productive route was suggested by Anderson et al. (1985) as they concluded the review of research on problems with the then-dominant high-frequency texts in Becoming a Nation of Readers: “The important point is that a high proportion of the words in the earliest selections children read should conform to the phonics they have already been taught.... However, a rigid criterion is a poor idea. Requiring that, say, 90% of the words used in a primer must conform to letter-sound relationships already introduced would destroy the flexibility needed to write interesting, meaningful stories.... What the field does need is an understanding of the concepts at work” (p. 47).

The ensuing 15 years has seen substantial activity among publishers and state policymakers in implementing new reading programs. In contrast, scarcely any work has been directed by educational researchers to developing an understanding of the concepts at work. Until these concepts are understood, this frenzy of activity is likely to continue as policymakers

scramble to respond to the literacy needs of the digital age. It is to the task of understanding the concepts at work that the TExT model is directed.

The TExT model builds on a rich set of constructs from cognitive science for examining the task posed by texts for beginning readers. The efforts of cognitive scientists have yielded critical insights into children's capabilities for processing written and spoken language, including constructs such as modularity (Stanovich, 2000), automaticity (LaBerge & Samuels, 1974), and verbal efficacy (Perfetti, 1992). These lenses, however, have not been applied to the features of texts that support initial word recognition processes. From theory and research, two aspects of the task presented by texts can be identified: (a) linguistic knowledge and (b) cognitive load. Texts also require and develop conceptual knowledge, such as different meanings of the word *strike* in baseball and in the workplace or the role of the wind in a passage on sailing, but the initial focus of the TExT model is on the linguistic and cognitive processes of word recognition.

Linguistic Knowledge

Descriptions of the processes in which readers engage in recognizing words are numerous and detailed (Adams, 1990; Ehri, 1991; Stanovich, 1991). These descriptions direct attention to the underlying systems of a domain. Rather than attending to each written word as a unique case dissociated from any other written words, success in beginning reading depends on identifying similarities across words. The encompassing nature of these generalizations will be critical in determining children's progress in reading acquisition. For example, if all words are approached through a child's idiosyncratic known words—*Jeep*, *Power Puff Girls*, and *Emily*—that child

will meet with some success reading Little Bear when the character *Emily* is encountered but will likely struggle with the dozens of words that surround that word.

In learning to read, a child needs to learn to make numerous distinctions among graphemes, phonemes, and grapheme/phoneme relationships (see Adams, 1990). The permutations of the grapheme/phoneme relationships within words are consideration. For example, to read the apparently simple sentence “So what did the cat do?”, a beginning reader needs to be able to differentiate between words where all of the letter-sound correspondences are consistent—*so, did, cat*—and those where one or more patterns are inconsistent—*what, the, do*. Distinctions about words can be grouped into four types. Excerpts from the first texts of different decades’ copyrights of the longest-published reading textbook program in the United States (labeled Program A in the context of this study) appear in Table 1. While different kinds of words are overrepresented in each of these texts, the words in Table 1 fall into four general types. It is to the support that texts provide beginning readers in becoming facile with the distinguishing characteristics of these four groups of words that the TExT model attends.

Insert Table 1 about here

The first, and largest, group of words to which children need to attend is composed of *phonetically regular words*. Twenty-six letters represent the 44–46 phonemes of spoken English. Even words that have idiosyncratic letter-sound relationships (*the*) relative to the typical use of the vowel pattern (e.g., *he, she*) are alphabetic in nature. But words that have a one-to-one correspondence between letters and sounds are often exaggerated in texts for beginning readers

to ensure children's facility with this fundamental characteristic of English writing. The excerpt from the 2000 copyright in Table 1 illustrates its emphasis on words with one-to-one patterns such as *nap*, *wag*, and *mat*. Even in the 1962 text, words with simple vowel patterns such as *Dick*, *go*, *Spot*, and *run* were prominent. More complex patterns were soon introduced, but only consistent ones found in common words such as *Jane* in the 1962 copyright and *name* in the 1993 copyright. To ensure that children have generalized the consistent and common patterns of English, some texts use uncommon words or common words with multiple meanings, producing storylines such as the "Dad had a bad fan" (Rasmussen & Goldberg, 1964). Phonics instruction is often equated with such texts on extreme sides of the debate between phonics and whole language. Such texts notwithstanding, the evidence has been and continues to be that at least some consistency and discussion about the regularities in written words benefits beginning readers (National Reading Panel, 2000).

The second most prominent group of words in Table 1 are *high-frequency words*—words that occur frequently in connected discourse (prepositions, articles, and conjunctions) but have at least one letter-sound correspondence that is inconsistent or uncommon. Even within the 2000 text, where words with regular and consistent one-to-one letter-sound correspondences are exaggerated, a core group of words have atypical letter-sound correspondences (e.g., *what*, *the*, *have*). In addition to irregularities in their letter-sound correspondences, many high-frequency words such as these have abstract and multiple meanings. Twenty-five high-frequency words account for one third of the words in elementary texts (Carroll, Davies, & Richman, 1971), half

of which have at least one irregular letter-sound correspondence. When the 100 most-frequent words are considered, 50% of the words in elementary texts are accounted for (Carroll et al., 1971). If children persist in trying to decode core high-frequency words as they would phonetically regular words, they will not gain the automaticity that characterizes early reading proficiency (Lesgold et al., 1985).

A third group of words is represented by a single word in the excerpts in Table 1—*doghouse*. These words can be labeled *derivative*. While these words are not as common in the first text or two of beginning reading programs, the morphological systems of written English also require attention and generalization for proficient reading. Simple derivatives such as verb tenses, plurals, possessives, and comparisons (*colder, coldest*) as well as more complex derivatives (e.g., compound words like *doghouse*) typically do not generate much attention among reading researchers in the debate over what to teach beginning readers. Educators have generally assumed that simple derivatives are assimilated fairly easily and early in children's reading development. But the more complex morphological derivatives may be challenging to beginning readers, and for linguistically diverse children in particular, developing automaticity with this group of words should not be assumed.

The excerpt from the 1993 copyright contains a fourth type of words—words that are infrequent and contain either multiple syllables or infrequent letter-sound relationships. The word *groceries* illustrates the former category and *write* the latter. These words will be labeled *high-meaning words* for beginning readers. When children learn to read prior to formal

schooling, high-meaning words are often the first that they learn (Durkin, 1966). These words are idiosyncratic to children, and may include their own names and names of favorite objects, much like the corpus of words that was cited earlier (*Jeep*, *Power Puff Girls*, and *Emily*).

Children's often learn their first high-meaning words by associating their meaning with their graphic features (much in the same way that a logo works; Ehri, 1991). For example, *dinosaur* may be remembered because a dinosaur has a long neck (the letter *d*) and an extended body (*inosaur*).

Until the predictable texts of the 1990s, the high-meaning words in beginning reading texts had been limited to the names of characters (as in the 1962 copyright) or had been accompanied by a rebus or small illustration, as was the case with *barrel* in the 1983 copyright. Words such as *groceries* and *barrel* are unlikely to appear in many more texts. Indeed, in the 1993 text cited in Table 1, *groceries*, *teeth*, and *brush* did not appear in another passage through the entire first-grade program. Children may to remember *groceries* when they see a word with *g* in that particular text, using the context. Whether they remember it when confronted with *garden*, *glide*, *gorilla*, *gulls*, or even *go*—other words that begin with the same letter-sound correspondence in the next nine passages of the first-grade reading text—instead of attending to the word on the page is uncertain.

Further, while multisyllabic words have syllables where knowledge of letter-sound correspondences apply, the rules are not necessarily the same as those for one-syllable words. For example, knowing the word *car* will not aid a beginning reader with *carry* in the 1993

passage. The way beginning readers remember multisyllabic high-meaning words in relation to phonetically regular words, high-frequency words, and words that are simple morphological derivatives of these two groups is questionable, particularly when the multisyllabic words appear only once or twice. The amount of attention children can spare for the other three groups of words when high-meaning words are prominent in their beginning reading texts is also uncertain.

Cognitive Load

The number and types of distinctions that proficient readers have in their repertoire are numerous. In considering how even the most fundamental distinctions are made, issues of exposure arise. What kinds of experiences—including those with texts—would help beginning readers read *do* differently than *so*? Adams (1990) refers to classical principles of association through which concepts are acquired: contiguity, recency, frequency, and similarity. But not much new research has accompanied the shifts in text that are represented in Table 1.

Presumably there are limits to beginning readers' text-processing abilities. Young children are not typically given Charlotte's Web (White, 1952) as an entry-level text. But what features of texts ensure that children will remain engaged in the material to while focusing their attention on the task of attending to words? The syntax and storylines of predictable texts have been presented as scaffolds that immerse beginning readers in reading so that they can learn about the critical features of words. Reading Recovery, a first-grade intervention, emphasizes the predictability of texts in leveling books for beginning readers. In the first four of 20 text levels in this program, teachers are advised to provide children with books that have predictable syntax.

Further, the key words in predictable phrases and sentences should have be easily matched with illustrations in the books. But unless scaffolds like predictable text patterns (Leu et al., 1986) and illustrations (Samuels, 1970) are removed fairly soon, beginning readers can become dependent on them.

Once such scaffolds are removed and children are asked to attend to words in texts, the balance between new and known words becomes critically important. Further, this balance will presumably differ as a function of the number of words a beginning reader already knows. For beginning readers who can recognize less than 5 or 10 words, a text with 10 unfamiliar words is quite a different task than for beginning readers who can recognize 25 words.

As critical as the balance between new and known words in a text is the opportunity a text gives beginning readers to apply what they have previously read. Again, a child's existing word recognition ability influences how quickly that child becomes proficient with new words. But at the earliest stages of reading instruction, most children have a limited word recognition repertoire. They will presumably not automatically incorporate each new word that they read into their repertoires; at this point, the "potential for accuracy" guideline introduced earlier remains a hypothesis. But even if we assume that children can recognize all words via the letter-sound relationships that they have been taught, we still don't know how much instruction is required to develop automaticity with a particular element.

Issues related to the pace at which words should be introduced and the number of times a new word must be repeated before it can be assumed to be learned were central to the behaviorist

model of text. Since its demise, issues of pace or word repetition in texts for beginning readers have received no attention from the research community. While the tight formulas of the behaviorist model were flawed in numerous respects, the constructs of pace and repetition continue to be relevant to cognitive processing demands.

Consider the principle of frequency. The research that underlay Gray's behaviorist model claimed that children required 35–45 repetitions of a word in order to recognize it (Gates, 1930). The words in these studies were almost exclusively high-frequency words such as *the*, *then*, *there*, and *they*. Such words give children little opportunity to apply the strategic and meaningful stance that characterizes cognitive processing; young children learn at least some high-meaning words more quickly than high-frequency words (Thompson et al., 1996). But there are still numerous questions.

In all likelihood, children do not learn words after one exposure. If they did, the studies of literature-based programs that show a substantial proportion of an age cohort learning between two and a half and eight words during grade 1 (Foorman et al., 1998; Hiebert, Liu, Levin, Huxley, & Chung, 1995) would show very different patterns. Occasions for seeing at least some words a handful of times in different texts or at least in nonrepetitive sentences in the same text likely influence children's ability to apply what they know and to support new generalizations for unknown words. Reitsma (1983) concluded that four exposures were optimal, but the first graders on whom he based this conclusion were already reading. In all likelihood, the number of

repetitions of individual words varies as a function of the existing word corpus of beginning readers, the features of the words, and the imagery value of the words (Laing & Hulme, 1999).

The number of repetitions needed may also be a function of the number of different or unique words presented in texts. Because of the long tradition of highly controlled text in American reading education, optimal levels of unique words for beginning readers have not been determined. A recent study, however, suggests that the presence of many unfamiliar words may not benefit even the most proficient first-grade readers. Johnston (2000) used little books with repetitive patterns, such as the books described as appropriate for beginning readers by Fountas and Pinnell (1999). Children participated in a variety of activities with three different books a week, with approximately 160 different words across the three-week intervention. The highest readers remembered 30 of the unique words in the nine texts at the end of three weeks, the middle readers 15, and the lowest readers 6.

The purpose of the TExT model, which is in the initial stages of development, is to demonstrate the nature of the task that first graders currently confront. In particular, this model is used to describe the changes that have occurred within texts from the behaviorist era when Gray's (Elston & Gray, 1930) model was rigidly applied to texts through the rapid changes that have ensued as a result of policies in California and Texas over the past 15 years.

An Examination of First-Grade Texts: Past and Present

Selecting Texts

Program selection. This analysis focused on all five textbook programs that met the criteria of the Texas Education Agency (1997) for its fall 2000 textbook adoption. These programs are labeled A through E. A sixth program, Program F, is a widely used textbook program but was not submitted for consideration in Texas. Program F was included in the present analysis since any differences between this program and the Texas-approved programs indicate an alternative for states not governed by the Texas and California mandates.

The core component of each program recommended for the instruction of first graders was the focus of the analysis. First-grade programs have many different components available for purchase in addition to textbooks, including audiotapes, CD-ROMS, and workbooks. Even within the category of textbooks, clients have several options, including sets of trade books,; small, single-passage texts described as *little books*; guided or leveled readers; and phonics readers. But each program contains a collection of texts that is typically called an *anthology*. Most publishers provide five or six anthologies for first grade. When Texas and California provide funds to districts, it is for these core components of textbook programs. In the 2000 Texas adoption, the allocated expenditure per first-grade student—\$95—was almost precisely the cost of the anthologies for Programs A through D. Purchase of other components would need to be made from district-generated funds. For economically challenged schools and districts, additional funds cannot be assumed.

Two procedures were used to confirm that the anthologies are the core materials of a program. First, the core components of a program were identified through a study of the

publishers' catalogs and websites. On the basis of this examination, a program's core texts and the accompanying teacher's guide were purchased. Next, the teacher's guide was examined to determine the components that were the focus of lessons. If a text was the basis for entire lessons in the teacher's guide, it was identified to be core. For Programs A through D and Program F, lessons centered on the texts in the anthologies. To illustrate the relationship between the texts in anthologies and the lessons in the teachers' guide, consider "The Nap," the text for the 2000 copyright excerpted in Table 1. Forty pages of the teacher's manual were devoted to activities that focused around this text. The teacher's guides for all of the programs except for Program E followed a similar pattern. Consequently, the text features that are described in this study for Programs A through D and for Program F are those of the anthologies.

In Program E, little books consisting of phonetically regular texts form part of the core instruction. Program E also presents a set of six paperback anthologies and two hardback anthologies as core to instruction. The former are designated for the first half of grade one and the latter for the second half of the year. The content of the paperback books is similar to the other programs' first anthologies: literary selections that are the focus of lessons in the teacher's guide. Since the instruction in the teacher's guide features the phonics readers as well as the six anthologies, text from both sources was analyzed for this study. Half of the text came from the phonics readers and half from the anthologies.

To obtain the historical data, copyrights from 1962 through 1993 were analyzed for Program A. The historical texts for Program A were chosen because this program is the only reading textbook program that has been continuously published since the 1920s. Characteristics of this program prior to 1965 are summarized in Chall's review (1967/1983) and were determined to be quite stable from 1920 through the early 1960s. Consequently, this historical analysis begins with the 1962 copyright.¹

Selection of texts from anthologies. Children and teachers experience a textbook program through individual texts that form the centerpiece of lessons. But when texts are presented as an instructional program rather than as trade books that are selected or sold individually, links across individual texts are assumed. A large portion of an instructional program needs to be studied in order to identify its salient characteristics. At the same time, the instructional unit studied cannot be so large that it obscures the unique characteristics of the initial period of instruction. Particular scaffolds for beginning readers may follow one another in quick succession. In her landmark study, Chall (1967/1983) used 10 texts as the unit for analyzing text characteristics. This procedure seemed an appropriate one to use for this study, as it yields a sizable corpus of text. Three groups of 10 passages were analyzed: (a) the first 10 passages of the grade one anthologies represented the beginning of the first-grade program, (b) the last 10 passages of the grade one anthologies represented the end of the first-grade program, and (c) the last 10 passages of the grade two anthologies represented the end of the second-grade program.

Coding Categories

Number of total and unique words. The total number of words in a text as well as in an instructional unit can be critical in determining the ease with which children will approach the task of reading. Further, the number of unique words in an instructional program needs to be viewed from the perspective of the total words in a passage or instructional unit. A word is counted as unique in its first appearance within the 10-passage unit. Because texts are of different lengths, unique words are reported as a function of 100 running words.

To compute unique words, a software program was developed (Hiebert & Martin, 2001). The TExT software was designed to treat words that share a root word and inflected endings (*s*, *ed*, *ing*), possessives, comparisons (*er*, *est*), and the ending *y* as the same instance of an unique word. The inclusion of derivatives of root words meant, on average, 6% fewer unique words or .6 unique word per 100 at the beginning of grade one, 11% or approximately 1 unique word per 100 at the end of grade one, and 20% or 2 fewer unique words per 100 at the end of grade two.

Number of repetitions of unique words. Research on the number of repetitions that children require to learn a word is difficult to interpret. While conclusions are difficult to draw, choices were necessary in order to establish the number of words that were repeated or appeared a single time in the beginning texts. A threshold for ease in recognizing a word appears to occur at four or more encounters (Share, 1995). Further, as previously discussed, single appearances of words in instructional units are unlikely to generate automatic recognition of those words in other contexts, at least for beginning readers. For the purposes of this study, words were

categorized according to (a) single appearances, (b) two to three repetitions, and (c) four or more repetitions.

Types of words. The number of unique words that have particular phonic patterns or that are core, high-frequency words was established, using different criteria for the beginning of grade one and for the end of grades one and two. First, the word recognition demands on commonly used norm-referenced tests and informal reading inventories were used to establish the expected curriculum for high-frequency words and phonetically regular patterns at the end of grade one. Four assessments were examined: the Comprehensive Achievement Test (CAT), the Stanford Achievement Test (SAT), the Developmental Reading Inventory, and the Johns Reading Inventory. The TExT software was programmed to identify words according to their status on the Carroll et al. (1971) ranking of the 300 most frequent words in the English language and derivatives of these words. For the one-syllable words that do not fall within these 300 most frequent words, the software computes the complexity of the vowel patterns, assigning these patterns a rank between 1 and 7. In this rubric, 1 indicates the presence of a long vowel at the end of the word (*hi*, *go*) and 7 indicates the presence of either diphthongs (the *oy* in *boy*) or variant vowels (*ea* in *bread*). An average of 90% of the words on the first three assessment instruments was accounted for by the 300 most frequent words on the Carroll et al. list, the simple derivatives of these words, and the vowel patterns in single-syllable words: C-V, CVC, CVC-e, CVVC, and CV-r patterns. On the Johns inventory, this curriculum accounted for 100% of the words.

These assessments establish end-of-grade-one reading demands. Establishing the curriculum for the beginning of grade one is more difficult. Norm-referenced forms of tests that are used at the beginning of grade one emphasize knowledge of phonics elements, sequence of stories as represented by pictures, and dimensions of phonemic awareness. Performances on these measures do not necessarily represent children's reading of texts. While the passages of informal reading inventories can be administered to entering first graders, many first graders cannot read. For entering first graders, the appropriate curriculum would seem to be the one that is typically regarded as a point of departure rather than one that could be captured by the exit-level task of assessments. The 25 most-frequent words in written English (Carroll et al., 1971), the two vowel patterns that are typically introduced first in American reading instruction—CV and CVC—and derivatives of words that fall into the first two groups has a foundation in American reading research as a curriculum for the first phase of reading instruction (Smith, 1934/1965).

The TExT software was programmed to analyze the entry-level first-grade curriculum for the first 10 texts of the six programs. For the end of grades one and two, the software was programmed to identify the percentage of words that fall beyond the 300 most frequent words, one-syllable words that have phonics patterns more difficult than the CV-r patterns, and words that are more complex morphological derivatives of the first two groups of words.

Results

Characteristics of Textbook Programs: 2000/2001

Total and unique words. Characteristics of all texts are summarized in Table 2. As

Insert Table 2 about here

Table 2 demonstrates, entry-level texts for Programs A through E are fairly similar in the number of total and unique words that they contain. A typical text averages 100 words, 21 of which are new, unique words to the program. Consider the following excerpt from I went walking (Williams, 1989), the fifth passage of Program A.

What did you see?
I saw a yellow dog looking at me.
I went walking.
What did you see?
I saw a lot of animals following me!

Of the 18 unique words in this 27-word sample, 5 are making their first appearance in the first-grade anthology: *yellow, dog, animals, lot, and following*. The other 13 unique words had appeared previously either in this passage or in the first four passages of the program. The introduction of five new unique words out of 25 running words is the average across these entry-level first-grade texts. Children will encounter another 15 unique words that are new to the program in the other 75 words of the average, 100-word long text.

Program F, which was not submitted to Texas, has 38 new unique words per 100 running words of text—almost twice the figure for Programs A through E. The subsequent historical analyses will show that the unique-word-per-100 rate for the 1993 copyright of

Program A was 29. The similarity of this unique-word-per-100 rate to that of Program F suggests that Program F was closer in philosophy to texts produced under the 1990 Texas mandates.

Repetition of words. Of the unique words in Programs A through E, 41% are singletons—words that occur a single time within the set of 10 instructional passages. In the excerpt from Program A’s “The Nap” (see Table 1), numerous words occur only once but only *am*, *mat*, *cap*, *bat*, and *dad* are singletons in that they do not appear again in the next nine passages of Program A.

The words *nap* and *wag* do not occur again in the instructional unit, but they appear three times in this passage. These words are not singletons; rather, they fall into the category of words with 2–3 repetitions. Words such as these that are repeated two to three times account for 25% of the unique words in Programs A through E. Approximately one third of the unique words in Programs A through E are repeated four or more times.

In Program F, the percentage of singletons is higher than in Programs A through E: 66% versus an average of 41%. Eighty-seven percent of Program F’s unique words are repeated fewer than four times, as opposed to 66% for Programs A through E.

Types of words. As the data in Table 2 indicate, the percentages of high-frequency words were modest in all six 2000 copyright programs. The average of 12% across Programs A through E was not appreciably different from the 7% for Program F. However, for words with vowel patterns with one-to-one letter-sound correspondences, the difference between the

programs on the Texas list and the non-Texas program was substantial. There were more than twice as many words with phonetically regular, one-to-one correspondences in Programs A through E than in Program F: 51% versus 22%. This percentage for phonetically regular words in Program F was comparable to the percentage for Program A's 1993 copyright, which was created to comply with the previous Texas mandate for authentic or noncontrived literature.

Patterns across grade one. From the beginning to the end of grade one, the number of unique words increased by 60% in all programs. This increase was paralleled by a 70% increase in total words. But on two important dimensions that are likely critical to the accessibility of a text for first-grade readers, the entry- and exit-level texts were similar. The number of unique words per 100 running words did not change substantially from entry to exit levels of grade one: from 21 to 18. A second dimension of similarity between entry- and exit-level texts was in the percentages of words that occurred once in an instructional set of 10 passages or singletons. At both levels, 41% of the unique words appeared once during an instructional unit of 10 passages.

While entry- and exit-level texts were similar in the ratio of unique to total words and in percentages of singletons, the entry-level texts had a higher percentage of phonetically regular words (60% vs. 30%) and a substantially smaller percentage of high-frequency words (12% vs. 33%) than did exit-level texts.

Patterns across the end of grades 1 and 2. Like the end-of-grade-one texts, there is a substantial amount of robustness across different programs' end-of-grade-two texts. There are differences in the number of unique words per 100, ranging from 14 to 22. But if students can

read passages that are, on average, 815 words in length, these differences in unique number of words per 100 are unlikely to influence reading greatly.

The same basis for high-frequency and phonetically regular words was applied to end-of-grade-one and end-of-grade-two texts to enable comparisons. Second-grade is typically viewed as a period of considerable expansion in children's reading vocabularies (Snow, Burns, & Griffin, 1998).

Characteristics of Textbook Programs Over Four Decades

Total and unique words. The data in Table 2 indicate widely discrepant figures in total and unique words between 1962 and 2000. The lowest number of unique words over 10 texts was in 1962, when there were 18 unique words. The high was achieved in 1993 when the figure was 226 unique words over the first 10 passages. Although lower than the 1993 figure, the number of unique words in the 2000 copyright—173—is almost 10 times the number in a comparable number of texts in 1962.

A variety of features may have changed over the 40-year period represented in these textbooks, in addition to the numbers of unique and total words. For example, expectations for the number of different texts within a program may have changed. Unique and total words need to be regarded as a function of the number of texts to which children are exposed over the course of a week. In the 2000 copyright, there are 60 texts in the first-grade anthologies. If these 60 texts are distributed evenly over the 36 weeks of a school year, approximately 2 texts will be read per week. The Program A teacher's guide is explicit in its recommendation that 2 texts

from the anthology be used for a week of instruction. In 1962, there were 101 texts within the five first-grade anthologies. If these were distributed over 36 weeks, a teacher would be expected to cover approximately 3 texts per week. To account for these differences in total number of texts, the analyses of unique words per week for the 1962 program was computed on the basis of 15 texts. Using that adjusted figure, the number of new unique words that beginning readers would encounter over a week at different points in time is depicted in Figure 1.

Insert Figure 1 about here

The graph in Figure 1 shows that the pace at which children are introduced to new words has changed dramatically over the past 40 years. The high of 31 unique words per 100 running words of text in 1993 is almost 10 times higher than the low of 4 unique words in 1962. The current figure—21—is five times higher than the low of 4 in 1962.

Repetition of words. The pace at which new words are introduced and the number of times that words appear in different texts are factors in the ease with which some beginning readers will recognize words. Further analyses of the texts from the 1962 and 2000 copyrights were conducted to describe these aspects of repetition and pace. The figures for the number of unique words per passage are depicted in Figure 2.

Insert Figure 2 about here

In the 1962 program, a consistent number of new, unique words appears in the first five passages. There are fewer new unique words in the subsequent 10 passages, presumably encouraging students to integrate what has been learned. In the 2000 copyright, the numbers of

both new and previously introduced unique words are generally smaller in the last 5 than the first 5 passages. But all numbers are nonetheless 10 times those of the 1962 copyright from the first through the tenth passage. In the 2000 copyright, each text requires beginning readers to attend to a new set of approximately ... unique words as well as a small set of words that are common across texts.

If every repetition of a unique word occurs within a single passage, children may have difficulty recognizing that word in other contexts. For example, words such as *I* and *at* in a text with a repeated pattern such as “I went walking” may not be remembered by beginning readers in other contexts because they may have memorized the text aurally. Data on the number of texts in which words appear are provided in Figure 3. In 1962, all words appeared at least 10 times in the program (Robinson et al., 1962). The pattern in Figure 3 where three words appear in less than 4 passages is an artifact of the selection process. These unique words were introduced in the last 3 texts and are repeated in the texts of the second preprimer.

Insert Figure 3 about here

A very small percentage of words—12% of the total unique words or 21 words in all—accounts for 43% of the total words in the 2000 copyright. These 21 words are repeated an average of 17 times. There are probably enough repetitions to establish fluency with these words, but the core group of words appears sporadically. A critical question is whether beginning readers will attend to these 21 words when they appear with another 152 words, many of which will require concerted attention to recognize.

Types of words. The percentages of high-frequency words and words with CVC patterns in the 1962 copyright reveal an interesting pattern. In the early passages of the 1962 copyright, children were given a “phonics” scaffold, primarily through the names of characters. This pattern continued through the first three books or preprimers.

By the 1983 copyright, this dimension of the program was gone. Almost a quarter of the words were high-frequency words but the phonics scaffolding had decreased substantially. By 1993, scaffolding of either high-frequency words or phonics patterns was not evident. In 2000, the emphasis on phonics is evident again, with 62% of the unique words having either a CV or VC pattern.

Patterns across grade one. While texts at the beginning of first grade have consistently been shorter than those at the end of the year, the ratio of text-length from the beginning to the end of first grade changed substantially in 1983. Prior to this time, end-of-year texts were 20 times longer than entry-level texts. In 1983, the end-of-year text was only three times longer than the beginning-of-year texts. The figure in 2000 is much closer to the 1983 standard than that of 1962: four times longer.

The jump in number of unique words from 1983 to 1993 was substantial—from 5 to 29 unique words per hundred. While the number of unique words per 100 is lower for beginning materials in 2000 than it was in 1993, this figure is double that of four decades ago. Further, beginning in 1993, the number of unique words per 100 remained consistent from the beginning of grade one to the end of grade two. In 2000, the expectation is that children will be able to

read texts where approximately 20 words out of every 100 are unique words—whether students are in the early stages of grade one or the latter stages of grade two.

Patterns across the end of grades one and two. In the number of total and unique words, the difference between the texts at the end of grade one and the end of grade two was not substantial in 1962 and in 1983: 8 to 11 in 1962 and 10 to 12 in 1983. In the distribution of high-frequency and phonetically-regular words and in the repetitions of words, figures in 1962 and 1983 change substantially from the end of grade one to the end of grade two. In both cases, the number of singletons doubles and the percentage of words that are accounted for by high-frequency words falls by around 50%. The pattern is a different one in 2000. Figures for unique words per 100 and singletons are almost identical at the end of grade one and the end of grade two: 19 and 40% for end-of-grade one and 18 and 41% for end-of-grade two. The percentage of words that can be recognized with knowledge of high-frequency words also falls by 50% but the percentage at the end of grade one was substantially lower than that in the 1962 and 1983 copyrights: 37% relative to 60% and 53%, respectively. Even at the end of grade two in 1962 and 1983, the percentage of singletons was substantially lower than the singleton percentage in the 2000 beginning texts.

Discussion

Have the policies of the two largest states influenced the first-grade texts of U.S. reading programs? The answer is an unequivocal yes. The most recent Texas mandates are reflected in entry-level texts that have twice as many phonetically regular words than the texts created for the

last Texas copyright or a program that was not created specifically for Texas. This feature of textbooks is visible and the source of considerable debate (Allington & Woodside-Jiron, 1999). But the debates around the linguistic demands (i.e., the word characteristics) of beginning reading textbooks have diverted attention from the massive changes in the cognitive processing demands of beginning reading texts that occurred with the 1987 and 1993 textbook adoptions in California and Texas.

The policies of these two states in the late 1980s and early 1990s represented a sea change in the design of books for beginning reading instruction. The primary changes put into place with the 1987 and 1993 textbook adoptions can still be seen in first-grade reading texts. Opportunities for consistent exposure to any group of words, whether they fall into the high-frequency group or share phonics elements, are few. Whereas first graders through the mid-1980s were exposed to 15 new words or less a week, first graders now are exposed to twice the number of new words per week—32. Through the mid-1980s, 14 of the 15 new unique words would be repeated frequently—approximately 20 times each in the first 10 passages—and only one of the new words would be a singleton. For beginning readers in Texas in 2000, 13 of the 32 new words appear only once, and another 9 occur two or three times, typically in the same passage.

While reading programs through the mid-1980s gradually increased in their expectations of how quickly beginning readers could add words to their word recognition corpus, the reading programs of 2000 expect children in the first week of first grade to acquire new words at the

same pace and with the same amount of repetition as children who are completing second grade and ready to move to third grade—the ubiquitous reading level that has been identified as essential for the nation’s children to have attained (Bush, 2001). Beginning readers receive texts with 21 new words per 100, 40% of which are words that appear a single time. Exiting second-graders are expected to read texts with 17 new words per 100, 42% of which are singletons. The policies of California and Texas in the 1987 and 1993 textbook adoptions that removed cognitive processing scaffolds for beginning readers have not been changed by new prescriptions for particular percentages of phonetically regular words in their 2000 and 2002 textbook adoptions.

The first question about this pattern is its appropriateness for American children at the beginning of the 21st century. An increase in the demands of texts may be entirely appropriate either because children are coming to school more well-prepared or because the programs have proven to be effective. If the majority of first graders can read at the level expected of the entry-level texts in the 1993 and 2000 copyrights, or if it can be proven that children at the early stages of reading can assimilate approximately 21 new words for every 100, these changes should be applauded. Other features of textbook programs can then be addressed, such as the relative balance of informational and narrative text (see Duke, 2001).

To date, there have been no large-scale studies on the levels attained by young readers at different developmental points. But data from intervention studies and descriptive studies of children’s reading from the 1993 textbooks suggest that a majority of first graders do not learn to

read that quickly. In the widely cited Foorman et al. (1998) study, a substantial portion of second graders who were in classrooms using the 1993 copyright of Program A exited unable to read primer-level text—text that requires fluency in the 300 most frequent words and CVC words and few, if any, of the high-meaning words. When Hiebert et al. (1995) asked first graders to read selections from the beginning of programs from the 1993 copyrights, 40% of first graders were unable to read these beginning passages at the end of the school year. This group read, on average, 8 high-frequency words—far less than the 100 most frequent words, let alone the 300 most frequent words that children are expected to read with fluency in the entry-level first-grade passages. A study by Hoffman, Roser, Patterson, Salas, and Pennington (2000) has shown a similar percentage of a first-grade cohort to be unable to read entry-level little books at the end of grade one.

Related to the question of appropriateness of these texts' fast pace of word introduction and low levels of word repetition is the role of the teacher in scaffolding entry-level texts for beginning readers through guided and shared readings. A popular program at the present time advocates teachers guiding students through the texts of current programs. Children will only be asked to read the text by themselves after guided or shared readings. But the question remains: Is there evidence that children who may not have sufficient phonemic or orthographic awareness to attend to spoken or written words can extract critical information through shared readings that will enable them to recognize these words again?

It could be argued that there are many instructional activities other than the reading of the anthology through which children are expected to gain these understandings. However, analyses of the correlation between the mainstream textbook programs' little books and their anthologies suggest that the connections are loose (Hiebert, Menon, & Martin, in progress). Further, many of the nation's poorest districts—districts that are likely to include the most challenged beginning readers—are unlikely to have the financial resources to pay for the little book components in addition to the anthologies. Little books are referenced in the teachers' editions, but few connections are made to words that have been read in the anthologies (Menon, Martin, & Huxley, 2000).

Even if independent word identification strategies are fostered through activities such as writing and words cards, the texts that children read need to provide opportunities for them to apply these strategies. Without explicit connections between instruction and the primary texts that they are given to read, children will not make the connection between the strategies they are taught and the texts they read (Juel & Roper/Schneider, 1985).

Is an instructional program simply a set of passages that teachers read to children and that some of the class—presumably those who were taught to read at home or in preschool or kindergarten—can read? Activities related to themes such as friendship and environmental responsibility receive substantial amounts of space in the teacher's guides. By becoming a collection of theme-related passages, these first-grade reading programs resemble high-school English anthologies rather than reading programs prior to 1993. Within all of the mainstream

2000 copyright entry-level samples, the increase in CVC words was evident. At the same time, pages in all of the anthologies were devoted to the craft of the illustrators and the authors who had written these passages. Several of the passages had been taken from the reading programs that have been aimed at the parent market. Even with a passage of questionable literary quality that had been written to emphasize short *a* words and where the literary quality of the passage was questionable, children were asked to observe the illustrator's craft.

The population in America's first-grade classrooms has become increasingly linguistically and culturally diverse. The proliferation of media sources over the same period of time has given young children many alternatives to books. At the same time, first-grade reading programs require that children enter first grade with a high level of reading proficiency if they are to be successful with the first instructional passages. Policymakers have been much more active in designating textbook characteristics than researchers and theorists have been in studying textbook characteristics.

The TExT model illustrates the type of model-building that is required if we are to meet the challenges that lie ahead. Other efforts are underway as well; for example, Foorman, Perfetti, Seidenberg, and Francis (2001) have begun a line of work that provides a fine-tuned analysis of the grapho-phonetic characteristics. Efforts such as these that clarify the role of word recognition demands in texts are important, but so too are efforts that consider other facets of the reading task, such as the demands texts place on students' metaphorical processing and their background knowledge. Ultimately we need models that can account for different entering knowledge among

beginning readers and the different tasks that confront readers over their elementary school careers. The solution to today's dilemmas is not Gray's carefully scripted texts; there were, as Chall (1967/1983) pointed out, major gaps in Gray's model. The balance of the features that contribute to engagingness (Hoffman et al., 1994; Hoffman, Sailors et al., 2000) needs to be studied in relation to the opportunities children require to become independent readers. Without substantially greater involvement by researchers in identifying the characteristics of texts that support and detract from reading acquisition, it is likely that this series of rapid policy shifts will continue and increasing numbers of America's beginning readers will be left behind.

Endnote

¹Both the 1970 and 1974 copyrights were examined, but the results have not been included in this analysis. The authorship of Program A included linguists who implemented a model of literacy acquisition that, according to conversations with textbook authors and reading educators who were prominent at the time, did not resonate in the marketplace. The texts had substantially fewer total words and a higher percentage of unique words, particularly high-meaning words, than previous copyrights. The number of high-frequency words was low. The exaggeration of characteristics such as a lower unique word per 100 ratio in the 1983 copyright appears to have been a response to the reaction of the marketplace. The objective of this review is to provide an historical context for current texts, not to provide a comprehensive review of historical trends in reading textbooks. Consequently, data on the 1970 and 1974 copyrights have not been included in this review.

References

- Adams, M. J. (1990). Beginning to read: Thinking and learning about print. Cambridge, MA: MIT Press.
- Allington, R. L., & Woodside-Jiron, H. (1999). The politics of literacy teaching: How “research” shaped educational policy. Educational Researcher, 28, 1–10.
- Alvermann, D., & Guthrie, J. (1993). Themes and directions of the National Reading Research Center (National Reading Research Center, Perspectives in Reading Research, No. 1). Athens, GA: University of Georgia, National Reading Research Center.
- Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985). Becoming a nation of readers: The report of the commission on reading. Champaign, IL: The Center for the Study of Reading; Washington, DC: National Institute of Education.
- Ball, D. L., & Cohen, D. K. (1996). Reform by the book: What is—or might be—the role of curriculum materials in teacher learning and instructional reform? Educational Researcher, 25 (9), 6–8.
- Barr, R., & Dreeben, R. (1983). How schools work. Chicago: University of Chicago Press.
- Baumann, J. F., Hoffman, J. V., Duffy-Hester, A. M., & Ro, J. M. (2000). *The First R* yesterday and today: U.S. elementary reading instruction practices reported by teachers and administrators. Reading Research Quarterly, 35 (3), 338–377.

Beck, I. (1981). Reading problems and instructional practices. In G.E. MacKinnon & T.G. Waller (Eds.) Reading research: Advances in theory and practice. (Vol. 2, pp 53-95). New York: Academic Press.

Beck, I. L., & McCaslin, E. S. (1978). An analysis of dimensions that affect the development of code-breaking ability in eight beginning reading programs (Report No. 6). Pittsburgh, PA: Learning Research and Development Center.

Beck, I. L., McKeown, M. G., Omanson, R. C., & Pople, M. T. (1984). Improving the comprehensibility of stories: The effects of revisions that improve coherence. Reading Research Quarterly, 19, 263–277.

Bloomfield, L. & Barnhart, C. (1961). Let's Read. Detroit, Michigan: Wayne State University Press.

Bond, G., & Dykstra, R. (1967). The cooperative research program in first-grade reading instruction. Reading Research Quarterly, 2, 5–142.

Brennan, A., Bridge, C., & Winograd, P. (1986). The effects of structural variation on children's recall of basal reader stories. Reading Research Quarterly, 21, 91–104.

Bush, G. W. (2001, January 29). No child left behind (Education Policy of the U.S. President) [On-line]. Available <http://www.ed.gov/inits/nclb/index.html>.

California English/Language Arts Committee. (1987). English-Language Arts framework for California public schools (kindergarten through grade twelve). Sacramento: California Department of Education.

California English/Language Arts Committee. (2000). English-Language Arts framework for California public schools (kindergarten through grade twelve). Sacramento: California Department of Education.

Campbell, J. R., Donahue, P. L., Reese, C. M., & Phillips, G. W. (1996). NAEP 1994 reading report card for the nation and the states: Findings from the National Assessment of Educational Progress and trial state assessments. Washington, DC: National Center for Education Statistics.

Carroll, J. B., Davies, P., & Richman, B. (1971). Word frequency book. Boston: Houghton Mifflin.

Chall, J. S. (1967/1983). Learning to read: The great debate (3rd ed.). Fort Worth, TX: Harcourt Brace.

Durkin, D. (1966). Children who read early: Two longitudinal studies. New York: Teachers College Press.

Ehri, L.C. (1998). Grapheme-phoneme knowledge is essential for learning to read words in English. In J. L. Metsala & L. C. Ehri (Eds.), Word recognition in beginning literacy (pp. 3–4). Mahwah, NJ: Lawrence Erlbaum Associates.

Ehri, L.C. (1991). Development of the ability to read words. In R. Barr, M.L. Kamil, P.B. Mosenthal, & P.D. Pearson (Eds.), Handbook of research in reading (Vol. 2, pp. 383-417). New York: Longman.

Ehri, L. C., & Robbins, C. (1992). Beginners need some decoding skill to read words by analogy. Reading Research Quarterly, *27*, 12–26.

- Elson, W. H., & Gray, W. S. (1930). Elson basic readers. Chicago: Scott, Foresman & Company.
- Flesch, R. F. (1955). Why Johnny can't read -- and what you can do about it. New York: Harper.
- Foorman, B. R., Francis, D. J., Fletcher, J. M., Schatschneider, C., & Mehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. Journal of Educational Psychology, 90, 37–55.
- Foorman, B. R., Perfetti, C., Seidenberg, M., & Francis, D. J. (2001, April). What kind of text is a decodable text? Paper presented at symposium Texts that support reading acquisition: What we know and how we know it at the annual meeting of the American Educational Research Association, Seattle, WA.
- Fountas, I. C., & Pinnell, G. S. (1996). Guided reading: Good first teaching for all children. Portsmouth, NH: Heinemann.
- Fountas, I. C., & Pinnell, G. S. (1999). Matching books to readers: Using leveled books in guided reading, K–3. New York: Heinemann.
- Fountas, I. C., & Pinnell, G. S. (2001). Guiding readers and writers: Grades 3–6. Portsmouth, NH: Heinemann.
- Gates, A. I. (1930). Interest and ability in reading. New York: The MacMillan Company.
- Gates, A. I., & Russell, D. H. (1938–39). Types of materials, vocabulary burden, word analysis, and other factors in beginning reading. The Elementary School Journal, 39, 27–35, 119–128.
- Geisel, T. S. (1960). Green eggs and ham. New York: Random House.

Gibson, E. J., & Levin, H. (1975). The psychology of reading. Cambridge, MA: MIT Press.

Gray, W. S., & Leary, B. E. (1935). What makes a book readable, with special reference to adults of limited reading ability: An initial study. Chicago: University of Chicago Press.

Gray, W. S., Monroe, M., Artley, A. S., Arbuthnot, A. H., & Gray, L. (1956). The new basic readers: Curriculum foundation series. Chicago: Scott, Foresman, & Company.

Green, G., & Davison, A. (Eds.). (1988). Linguistic complexity and text comprehension: Readability issues reconsidered. Hillsdale, NJ: Lawrence Erlbaum Associates.

Grossen, 1997

Hiebert, E. H. (1983). A comparison of young children's self-selected reading words and basal reading words. Reading Improvement, 20, 41–44.

Hiebert, E. H. (1999). Text matters in learning to read (Distinguished Educators Series). The Reading Teacher, 52, 552–568.

Hiebert, E. H., Liu, G., Levin, L. Huxley, A., & Chung, K. (1995, November). First graders reading the new first-grade readers. Presented at the annual meeting of the National Reading Conference, New Orleans, LA.

Hiebert, E.H., & Martin, L.A. (2001). TEXT (Task Elements by Task) software (2nd Ed.). Santa Cruz, CA: TextProject.

Hiebert, E.H., Menon, S., & Martin, L.A. (in progress). The relationship between first-grade anthologies and little books in three conceptually different textbook programs. Reading and Writing Quarterly: Overcoming Learning Difficulties.

Hockett, J. A. (1938). The vocabularies of recent primers and first readers. Elementary School Journal, 38, 112–115.

Hoffman, J. V., McCarthy, S. J., Abbott, J., Christian, C., Corman, L., Curry, C., Dressman, M., Elliott, B., Matherne, D., & Stahle, D. (1994). So what's new in the new basals? A focus on first grade. Journal of Reading Behavior, 26, 47–73.

Hoffman, J., Roser, N., Patterson, E., Salas, R., & Pennington, J. (2000). The effects of leveled texts and varying types of support on first graders' reading performance (Report #1-010). Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.

Hoffman, J.V., Sailors, M., Patterson, B., & Mast, M. (December, 2000). The decodable basals. Paper presented at the annual meeting of the National Reading Conference, Scottsdale, Arizona.

Holdaway, D. (1979). The foundations of literacy. Sydney, Australia: Aston Scholastic.

House, E. R., Glass, G. V., McLean, L. D., & Walker, D. F. (1978). No simple answer: Critique of the follow through evaluation. Harvard Educational Review, 48, 128–160.

Johnston, F. R. (2000). Word learning in predictable text. Journal of Educational Psychology, 92, 248–255.

Juel, C., & Roper/Schneider, D. (1985). The influence of basal readers on first-grade reading. Reading Research Quarterly, 20 (2), 134–152.

LaBerge, D., & Samuels, S. (1974). Toward a theory of automatic information processing in reading. Cognitive Psychology, 6, 293–323.

Laing, E., & Hulme, C. (1999). Phonological and semantic processes influence beginning readers' ability to learn to read words. Journal of Experimental Child Psychology, 73 (3), 183–207.

Lesgold, A. M., Resnick, L. B., & Hammond, L. (1985). Learning to read: A longitudinal study of word skill development in two curricula. In G. MacKinnon & T. Waller (Eds.), Reading research advances in theory and practice (pp. 107–137) Orlando, FL: Academic Press.

Leu, D. J., Jr., DeGroff, L.J. C., & Simons, H. D. (1986). Predictable texts and interactive-compensatory hypotheses: Evaluating individual differences in reading ability, context use, and comprehension. Journal of Educational Psychology, 78(5), 347-352. Lohnes, P. R., & Gray, M. M. (1972). Intellectual development and the cooperative reading studies. Reading Research Quarterly, 8, 52–61.

Martin, B., & Brogan, P. (1971). Teacher's guide to the instant readers. New York: Holt, Rinehart, & Winston.

Menon, S., & Hiebert, E.H. (2000). Literature anthologies: The task for first-grade readers (CIERA Report 1.008). Ann Arbor, MI: CIERA.

Menon, S., Martin, L.A., & Huxley, A. (April 2000). Teachers' guides and reading instruction: The interactions between teachers, texts, and beginning readers. Paper presented at symposium The content of text for young readers in learning to read and reading to learn at the annual meeting of the American Educational Research Association, New Orleans, LA.

Metsala, J. L. (1999). Young children's phonological awareness and nonword repetition as a function of vocabulary development. Journal of Educational Psychology, 91, 3–19.

Morris, J. A., & Johns, J. L. (1987). Are first-grade reading books easier than 20 years ago? The Reading Teacher, 486–487.

National Reading Panel. (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, DC: National Institute of Child Health and Human Development.

Olson, A.V. (1965). An analysis of the vocabulary of seven primary reading programs. Elementary English, 42, 261–264.

Perfetti, C. A. (1992). The representation problem in reading acquisition. In P. B. Gough, L. C. Ehri, & R. Treiman (Eds.), Reading acquisition (pp. 145–174). Hillsdale, NJ: Lawrence Erlbaum Associates.

Perry, L. A., & Sagan, P. S. (1989). Are basal readers becoming too difficult for some children? Reading Improvement, 26, 181–185.

Peterson, B. (1991). Selecting books for beginning readers: Children's literature suitable for young readers. In D. E. DeFord, C. A. Lyons, & G. S. Pinnell (Eds.), Bridges to literacy: Learning from Reading Recovery (pp. 119–147). Portsmouth, NH: Heinemann.

Rasmussen, D., & Goldberg, L. (1964). The bad fan (Level A, Basic Reading Series). Chicago: Science Research Associates.

Reitsma, P. (1983). Printed word learning in beginning readers. Journal of Experimental Child Psychology, 36, 321–339.

Rodenborn, L. V., & Washburn, E. (1974). Some implications of the new basal readers. Elementary English, 51, 885–893.

Samuels, S.J. (1970). Effects of pictures on learning to read, comprehension, and attitudes. Review of Educational Research, 40, 397-407.

Share, D. L. (1995). Phonological recoding and self-teaching: Sine qua non of reading acquisition. Cognition, 55, 151-218. Smith, 1934/1965

Snow, C., Burns, M. S, & Griffin, P. (1998). Preventing reading difficulties in young children. Washington, DC: National Research Council.

Stanovich, K. E. (2000). Progress in understanding reading: Scientific foundations and new frontiers. New York: Guilford Press.

Stanovich, K.E. (1991). Word recognition: Changing perspectives. In R. Barr, M. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), Handbook of reading research (Vol. 2, pp. 418-452).

Stein, M., Johnson, B., Boutry, S., & Borleson, C. (2000). An analysis of the decoding instruction in six first-grade reading programs. Tacoma: University of Washington-Tacoma.

Stein, M. L., Johnson, B. J. & Gutlohn, L. (1999). Analyzing beginning reading programs: The relationship between decoding instruction and text. Remedial and Special Education, 20, 275–287.

Texas Education Agency. (1990). Proclamation of the State Board of Education advertising for bids on textbooks. Austin, TX: Author.

Texas Education Agency. (1997). Proclamation of the State Board of Education advertising for bids on textbooks. Austin, TX: Author.

Thompson, G.B., Cottrell, D.S., & Fletcher-Flinn, C.M. (1996). Sublexical orthographic-phonological relations early in the acquisition of reading: The knowledge sources account. Journal of Experimental Child Psychology, 62, 190-222.

Thorndike, E.L. (1921). Teacher's Word Book. New York: Teachers College, Columbia University.

White, E. B. (1952). Charlotte's web. New York: Harper.

Table 1: First 50 Words of First Passage of Program A Texts

1962c	1983c	1993c	2000c
<p>Go, go, go. Go, Dick, go. Help, help!</p> <p>Look, Dick. Dick, Dick. Help Jane. Go help Jane. Go, Jane. Go, Jane, go.</p> <p>Look, Dick. Help Sally. Puff! Puff! Look, Dick. Look, Jane. Look here.</p> <p>Look, Puff. Look, Spot. Help! Help! Run, Spot, run! Sally! Sally! Come here, Sally. Come here.</p>	<p>Can you find it?</p> <p>Can the girl find the dog? Can the girl find the cat? Is the dog in the doghouse? The dog is not in the doghouse.</p> <p>Is the dog in the barrel? Look at the barrel. Is the dog in it? Can the girl find the dog?</p>	<p>So Can I</p> <p>I can brush my teeth. So can I! I can write my name. So can I! I can read a book. So can I! I can carry the groceries. So can I! I can brush my teeth and write my name and read a book and carry</p>	<p>The Nap</p> <p>I am on my mat. I will have a nap. Away I go. Look at that! Wag, wag, wag. I like my cap. Can I have the bat? Will it go up? Will it come down? No, not on the dad! No, not on the cat! Look at that. What a nap!</p>

Table 2. Characteristics of Texts: Past and Present

Program	Total words*	Unique words* (with derivatives)	Unique words per 100**	Single-tons*** (%)	2-3 repetitions*** (%)	High-frequency words*** (%)	Phonetically regular words *** (%)
BEGIN OF GRADE 1: 2000 ©							
A	833	173 (187)	21	40	25	17	62
B	949	204 (212)	21	37	26	11	42
C	1150	220 (240)	19	38	24	11	59
D	1239	256 (271)	21	47	25	9	44
E	954	201 (213)	21	43	23	10	50
F	760	286 (322)	38	66	21	7	22
END OF GRADE 1: 2000 ©							
A	3342	627 (705)	19	40	26	37	30
B	3361	587 (676)	17	40	28	40	33
C	4350	710 (834)	16	38	27	37	26
D	3660	750 (879)	20	45	27	32	29
E	4251	733 (751)	17	42	28	34	29
F	3510	727 (835)	21	49	25	33	30
END OF GRADE 2: 2000 ©							
A	6300	1121 (1348)	18	41	29	25	30
B	5690	1227 (1492)	22	48	29	23	27
C	7813	1302 (1648)	17	40	28	24	27
D	10,815	1470 (1868)	14	37	26	21	27
E	10,206	1672 (2116)	16	42	27	20	24
F	8090	1270 (1575)	16	42	25	23	30
HISTORICAL							
A62Begin	180	18 (18)	10	0	0	6	56
A62End	3782	293 (344)	8	7	11	60	17
A62EndGr2	6030	652 (808)	11	19	27	40	29
A 83Begin	1441	72 (76)	5	5	8	24	31
A83EndGr1	4810	460 (552)	10	16	18	53	20
A83EndGr2	8650	1008 (1281)	12	29	25	30	26
A93Begin	790	226 (232)	29	46	28	9	30
A93EndGr1	3850	761(899)	20	41	29	34	29
A93EndGr2	7500	1248 (1536)	17	41	29	24	28

*Total of 10 passages

**Average across 10 passages

***Percentages of unique words

Figure 1. Number of unique words presented per week in four decades' copyrights of Program A.

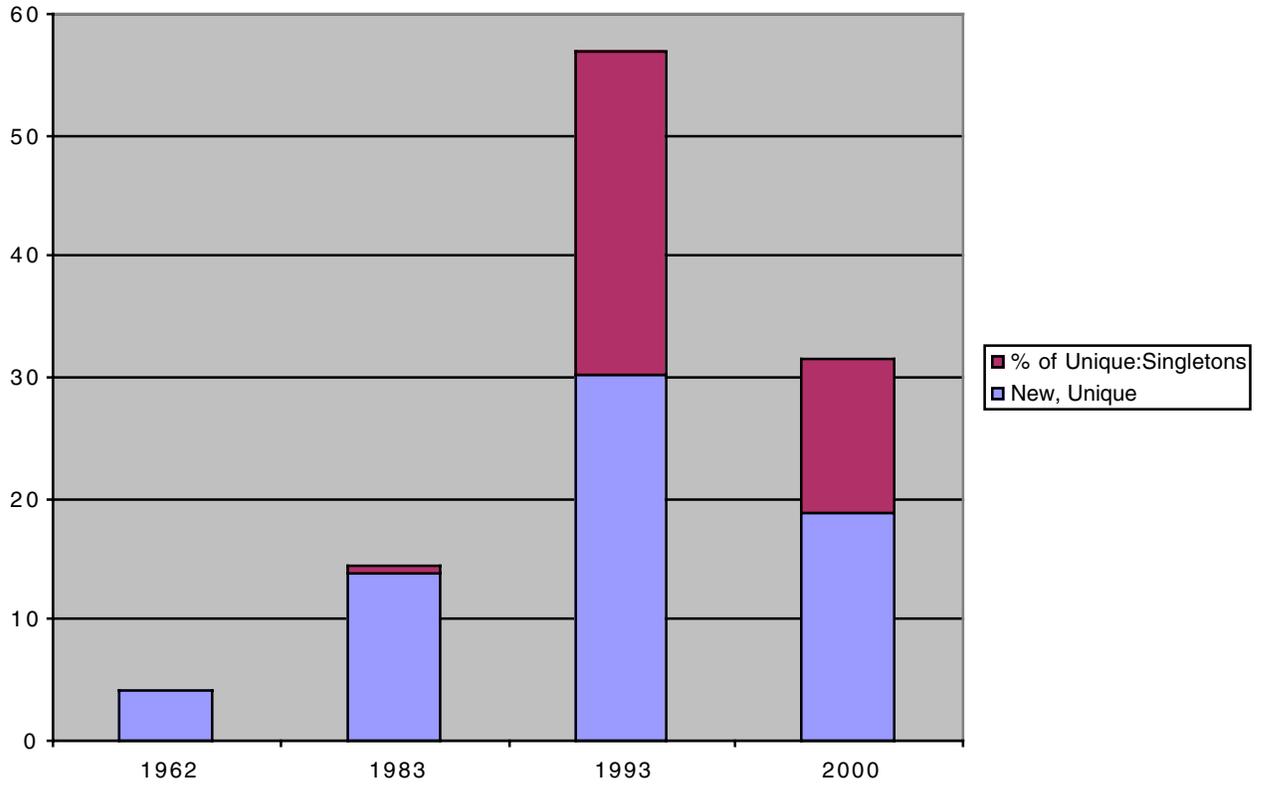


Figure 2. Number of unique words presented per text

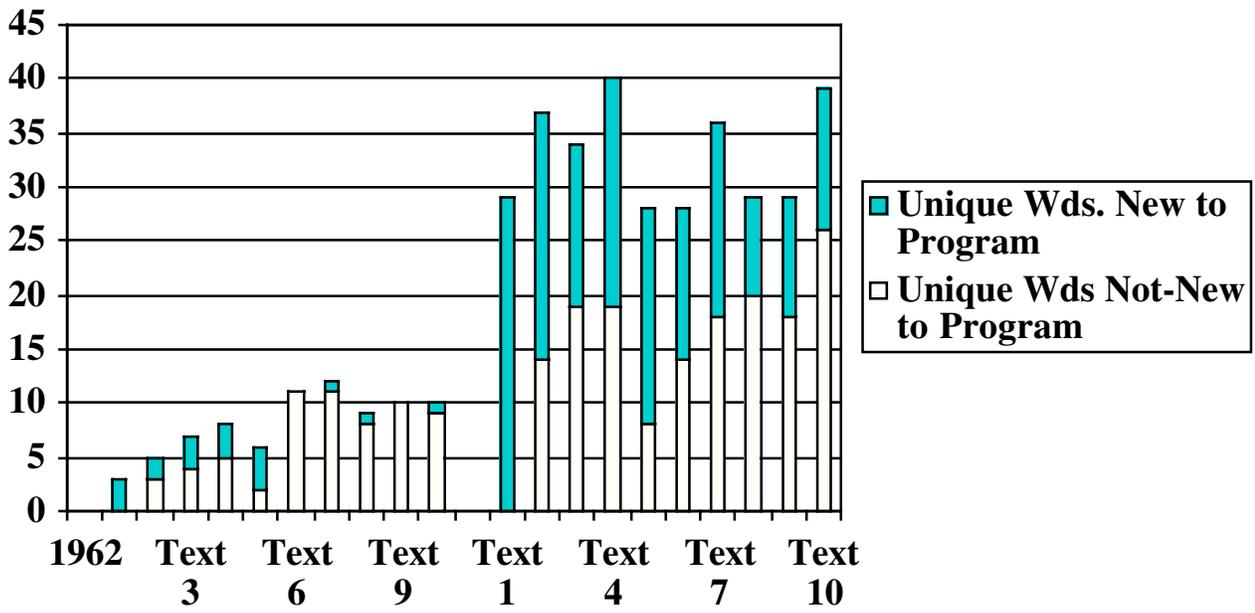


Figure 3. Number of total words accounted for by unique words: 1962 and 2000 copyrights.

