

Basic Research and The Great Debate

HOW WORDS ARE RECOGNIZED

In the original edition, we noted that the research on beginning reading was not generally grounded in a theory of learning or of the reading process. Since 1967 there has been a dramatic increase in basic research on reading and on the building of models and theories (see pp. 28–30). In fact, some are already asking whether reading has perhaps moved too far in the direction of basic research, with too little concern for research on problems of teaching and learning, particularly in classrooms.

The basic research upon which the meaning-emphasis methods of 1910 to 1960 were based came largely from Cattell (1885, 1886, see Gibson and Levin, 1975). It was Cattell's research on perception of words—that skilled readers read four connected words as quickly as two unconnected words and that it took longer to name letters than it did words—that provided the scientific basis for teaching children to read by a whole-word, meaning-emphasis method from the beginning.

As reported in *The Great Debate*, Cattell's findings, although still accepted for mature, skilled readers, were not confirmed for beginners, those who must acquire the skill of reading.

The original interpretations of Cattell's experimental findings have also been modified by recent research. The superiority of "word" recognition has been questioned by Baron and Thurston (1973) who found that pronounceable nonwords are processed as efficiently as meaningful words. This has been interpreted to mean that the "word superiority" effect holds not just for real words, but for all orthographically regular letter strings (Venezky and Massaro, 1979). Thus the word superiority effect does not necessarily mean that words are processed as a single perception, as many of the proponents of whole-word approaches suggested. But it may mean words are easier to process than isolated letters or letter strings because they follow regular rule-governed patterns, and readers use their knowledge of these patterns in word identification.

The research of Venezky and Massaro (1979) suggests further that instruction in phonics makes learners aware of regular patterns of English orthography by presenting the most common patterns of letter combinations directly. "Sight words," on the other hand, tend to violate the most common rules of English orthography. Thus phonics instruction is likely to be more efficient than whole-word strategies as an aid in word identification. In fact, Venezky and Massaro argue that phonics instruction might be continued beyond the primary grades to promote a better understanding of English orthography.

THE RELATION OF DECODING TO READING COMPREHENSION

Since the early 1970s, interest in research on the relation between decoding and reading comprehension has increased. Preceding *The Great Debate*, and following it, some reading researchers expressed concern that a code-emphasis might produce "word callers" rather than readers who read with comprehension (Goodman, 1969; Smith, 1973). It should be noted that this same concern was voiced by many researchers before the publication of *The Great Debate*. Yet most studies reviewed there found early achievement in decoding to benefit not only word recognition but reading comprehension as well.

A series of basic research studies published after *The Great Debate* confirms this findings. Essentially they indicate that word recognition and ability to decode individual words is basic to reading comprehension.

In a comparison of oral reading of a list of words and oral reading of connected text on the Gray Oral Reading Test, Shankweiler and Liberman (1972) found correlations between .53 and .77 for second and fourth graders. These correlations, they maintained, were too high if it were the case that children could read isolated words well but could not deal effectively with connected text. Similarly, Perfetti and Hobaboam (1975) found good third- and fifth-grade readers (on reading tests) were significantly faster in reading single words than were poor readers. This difference was slight but significant for real words and pronounced for nonsense words. The good comprehenders decoded the nonsense words nearly as fast as the real words, but the poor readers had to sound out the nonsense words slowly. (See review by Gollinkoff, 1975-1976.)

Perfetti and Lesgold (1979) used these results to develop a model of reading based partly on the model of LaBerge and Samuels (1976). They suggested that lack of automaticity of decoding in the poor readers means that they can maintain fewer words in their working memory at a given time and therefore comprehend less efficiently. Stanovich (1980) uses automaticity in much the same way to explain the differences between good and poor readers, but he argues that lack of automatic word recognition forces the poor reader to use predictive strategies which consume more cognitive resources, diverting these resources from comprehension. The more cognitive resources the reader needs to devote to decoding, the fewer resources she or he can devote to comprehension, and hence, comprehension suffers.

The findings of these basic research studies are generally consistent with the findings from the research analyzed in *The Great Debate* and in this update: a code-emphasis is more efficient for beginning readers, producing better results for word recognition and decoding, which in turn makes for better reading comprehension.

HOW WORDS ARE LEARNED

Barr's (1974) research found that first-grade students' word recognition strategies were influenced by the method of instruction they received. Those taught by a phonics method tended to make phonic-type errors. Those who were taught by a sight-word method made errors of "whole words." Only the most able students who learned by a sight-word method seemed able to use a decoding strategy. Similar results were found among first and second graders. (DeLawter 1975).

A comprehensive summary and synthesis of basic research on beginning reading by Calfee and Drum (1978) confirms both the studies cited here and the research reviewed earlier in *The Great Debate*.

In summary, the evidence from Gates and Backus (1923) through Chall (1967) and up to the present is fairly consistent—students are more likely to acquire decoding skills, if the instructional program provides time and varied opportunities to acquire these skills. Some students will learn the principles on their own, but many will not in the absence of systematic training." (p. 227)

And with regard to the decoding/comprehension question:

The claim is sometimes made that the decoding "problem" has been solved and that the major task for reading instruction in U.S. schools is more effective teaching of comprehension skills (e.g. Miller, 1975, p. 53). Solid evidence on this point is hard to come by, although we have yet to encounter a student who could decode fluently but failed to comprehend. Occasionally primary students do make rapid progress in acquiring decoding skill and outstrip their active vocabulary, or one finds students for whom English is a second language—we do not consider such cases pertinent. Elsewhere we have examined typical research put forward in support of the "decoding but not comprehending" position, and found it actually supports the opposite position." (p. 238)

THEORETICAL MODELS

The past fifteen years have seen a growing emphasis on models and theories of the reading process. Although most of these models have been concerned with proficient, skilled reading, they also have some relevance to beginning reading. These reading models have been classified as "top-down" (stressing the first importance of language and higher cognitive skills in making predictions), "bottom-up" (stressing the first importance of word recognition skills), or "interactive" (stressing both).

The code- versus meaning-emphasis models for beginning reading proposed in *The Great Debate* have relevance to these reading-process models. The top-down models relate more to the meaning-emphasis approaches of beginning reading and stress the first importance of language and meaning

for reading comprehension and also for word recognition (Goodman, 1967, 1976; Smith, 1971, 1978). The reader theoretically samples the text in order to confirm and modify the initial hypothesis.

The bottom-up models—those that view the reading process as developing from perception of letters, spelling patterns, and words, to sentence and paragraph meaning—resemble the code-emphasis, beginning reading approaches (Gough, 1972; Gough and Cosky, 1977; LaBerge and Samuels, 1976; Rubenstein, Lewis, and Rubenstein, 1971).

Some models have proposed that reading involves both top-down and bottom-up processes (Rumelhart, 1977; Lesgold and Perfetti, in press; Stanovitch, 1980; Samuels and Eisenberg, 1981; Just and Carpenter, 1980).

In addition, all models—top-down, bottom-up, and interactive—propose that, in reading, the reader at some point uses three types of information about a word: graphemic-phonemic, semantic, and syntactic. For example, for his top-down model, Goodman (1976) states that there are times when an adult will decode a word into its phonetic form, but only after other ways of confirming a hypothesis about the word have been tried and have failed. And Gough (1972) includes semantic and syntactic processes in his bottom-up model, but at a later stage in the process than phonemic recoding. The models differ, then, in the order they propose for the processing of the various aspects of reading.

Carroll (1976) has noted further that the order of these skills in models of mature reading has been used to suggest the order of teaching them to children. For example, Gough and Gough and Cosky's bottom-up (1977) theory begins with letter recognition, decoding instruction, and then practice to achieve automaticity in phonemic recoding of words. Automaticity of decoding is similarly stressed by LaBerge and Samuels (1976) from their bottom-up model. On the other hand, Goodman's (1976) top-down model suggests that reading instruction from the beginning be given in a way that encourages "the reader to use the least amount of information possible to make the best guess possible." (p. 491) This involves an earlier emphasis on using context to recognize words, not an emphasis on decoding.

Another class of reading models—stage, or developmental models like those of Chall (1979, 1982) and Doehring and Aulls (1979)—suggests that both top-down and bottom-up processes are important, but at different stages of development. Chall (1979, 1983) suggests that top-down predicting is used during the prereading stage, in which the child picks up a book and pretends to "read" it by repeating the story from memory or from the pictures. At this stage, the child's knowledge of the story is more important than the print itself, for she or he has little or no knowledge of the print. With the beginning of formal reading instruction, the child learns the letters, sounds, and printed words, and follows a bottom-up process for decoding the print.

The child practices these early decoding and word recognition skills until he or she reaches an adequate level of fluency using materials whose content and vocabulary is largely known. At later stages of reading, both automatic word recognition and context interact to gain information from the text, an interaction that may follow either or both bottom-up or top-down processes (Chall, 1983). Similar developmental changes have been observed in oral reading errors (Biemiller, 1970), eye movements (Buswell, 1922; Gelatt, 1978); and the eye-voice span (Levin, 1980).

Thus, views on the most effective ways to start the beginner on reading have during the past 15 years, become connected with preferences for given theoretical models of the reading process. Those who prefer top-down models usually prefer meaning-emphasis beginning reading approaches. Those who prefer bottom-up models usually prefer code-emphasis beginnings. Those who view the reading process as development tend to see the process as either top-down or bottom-up, depending upon the stage of development. (See Chall, 1983.)

CHANGES IN BASAL READERS

The Great Debate was concerned with three aspects of basal readers: the methods used, the content, and the level of difficulty. The following recommendations, based on an analysis of basic research were suggested in the 1967 report. With regard to method, a code-emphasis was recommended rather than the meaning-emphasis predominant in the widely used basal readers of the late 1950s and early 1960s. With regard to content, I suggested more realistic representation of ethnic groups, more substantial content, and more folk and fairy tales. With regard to difficulty, I recommended a faster introduction of words, particularly if earlier and heavier decoding was used. What changes have occurred? Popp (1975) found an earlier and heavier teaching of phonics in widely used basal readers. She found most widely used first-grade basal readers in the 1970s to contain phonic elements that were included in the second-grade readers of the 1950s. Even staunchly meaning-emphasis basal readers taught greater amounts of phonics in the 1970s than they did in their earlier editions of the 1950s and 1960s. If one adds the publication and use of many separate phonics workbooks, decoding games, kits, and the publication of several new reading programs with direct phonics programs, one must conclude that a considerable change had taken place in the amount of phonics taught in the early grades over the past fifteen years.

Perhaps the most conspicuous change in the readers has been in the content. The concentration on white, middle-class, suburban children, typical in 1967, has changed. Readers now present more children of different

ethnic groups, fewer continuing child characters, and more fantasy and fairy tale content (Willows, Borwick, and Hayoren, 1981; Beck and McCaslin, 1977; Beck, 1981).

A change in the vocabulary content of beginning readers has also taken place. A comparison of a widely used first-grade reader published in 1956 and 1962 with a 1978 edition analyzed by Willows et al. (1981) indicates an increase in new words taught per story and per number of running words. The stories decreased in length, and the number of pictures increased (see Table I-4) In 1956, an average first-reader story had 305 running words; in 1962, the average was only 230; and by 1978, it was 126. While each story had fewer running words, the number of new words per 100 running words increased five fold between 1956 and 1978, from 1.4 to 9.8. The result is that each word is now repeated fewer times in the text. Indeed, some reading specialists are concerned (Rodenborn and Washburn, 1975) that the words may now be introduced too rapidly for adequate learning. While in the 1950s and 1960s basals each word was repeated between 6 and 10 times on the pages immediately following its introduction, in the newer programs almost 70 percent of the words in the first-grade readers are repeated fewer than 5 times in the text (Willows et al. 1981)

Since the newer basals tend to include more systematic phonics instruction earlier (Popp, 1975), it could be argued that they contain more decodable words—words available to the student without being explicitly taught as “new” words. Thus new-word counts mean something different than they did when each word was explicitly taught. Beck found the number of decodable words in four new “meaning-emphasis” programs to increase with the level of the first-grade program, ranging from 38 to 59 percent of the

Table I-4 Characteristics of Scott Foresman 1st Readers Over Time

	1956‡ 1	1962‡ 2	1978§ 3
Running words per story	305	230	126
New words per book	177	153	284
New words per 100 running words	1.4	1.9	9.8*
Pictures per 100 running words	1.6	1.7	6.5
Pictures per story	4.8	3.8	8.1†

*Mean for all first-grade books

†Extrapolated

‡The New Basic Readers Curriculum Foundation Series, see p. 206 in *Learning to Read: The Great Debate*

§Basics in Reading, analyzed by Willows et al. (1981).

total words in the last book of first grade. According to Beck's analysis, the number of decodable words represents a sizable increase from similar basal reading programs published earlier, but the extent of the decodable words was still considerably lower than in "code-emphasis" programs analyzed (Beck, 1981).

Beck is also concerned that the new, heavier, vocabulary loads may have gone too far and that this may impede the automaticity of word identification needed for further development (LaBerge and Samuels, 1976; Perfetti and Lesgold, 1979).

Concurrent with the increase in vocabulary load has been an increase in the "picture load." In basals published in 1956 and 1962, I found that the number of pictures per 100 running words was 1.6 and 1.7, respectively (p. 206). By 1978, the number of pictures had increased to 6.5 per 100 running words (Willows et al., 1981). This continues to be a disconcerting trend inasmuch as some earlier research found that pictures can hinder word recognition at the early levels of reading. Samuels' (1967) research suggested that in beginning word learning, when pictures are present, children give less attention to the words. (See also Willows et al., 1981, and Gibson and Levin, 1975, who report essentially similar results.) Thus the recent increase in picture load, as well as in vocabulary load, may make word learning more difficult in the current basal readers than in the older ones.

Some newer research on the influence of pictures indicates that they are beneficial for comprehension (Jenkins and Pany 1981; Sahallert, 1981). But these studies were based on students who had passed the beginning reading stage and therefore the findings may not apply to beginning readers.

CHANGES IN PROFESSIONAL VIEWS

To what extent have the views of reading specialists changed with regard to the main issues of *The Great Debate*—meaning- versus code-emphasis? To what extent have the professional courses on reading instruction reflected the changes in the research evidence?

Our time and resources were too limited to interview representative specialists and visit college campuses. Nor was it possible to send questionnaires to representative samples of specialists and students. Instead, we undertook a content analysis of the most widely used methods textbooks written before and after *The Great Debate* by prominent reading specialists for the training of teachers. We assumed that if the authors had changed their views on beginning reading, we would find those changes in their textbooks.

Toward this end, we selected for content analysis a substantial number of widely used professional textbooks on methods of teaching reading. One

group of eleven was published from 1955 to 1965 (the decade immediately preceding the publication of *The Great Debate*); the other group of sixteen appeared between 1972 and 1978 (approximately one decade after the publication of *The Great Debate*).

We analyzed each of the twenty-seven textbooks with regard to its position on the code-emphasis versus meaning-emphasis issue—whether it favored a code-emphasis, a meaning-emphasis, or a combined, “eclectic” approach. Our criteria for classification were the author’s position on when phonics instruction should begin, how much emphasis should be placed on it, and the relation it should have to reading comprehension and language acquisition.

Code-emphasis: teaches decoding skills at the beginning of reading instruction as a means to word recognition and comprehension; tends to give early attention to letters and sounds; occasionally characterizes itself as a “synthetic” approach.

Meaning-emphasis: emphasizes comprehension, “bringing meaning to print,” right from the beginning. Advocates sight words, experience charts, use of contextual clues, and/or meaning-emphasis basal series. Begins with “meaningful language units” or “wholes,” such as words, phrases, and sentences. Considers phonics only one of many useful skills, to be introduced later, after the child is reading, when he or she needs to learn how to recognize unfamiliar words.

Combined “eclectic” approach: emphasizes a “balanced,” “eclectic,” or “composite” approach. Advocates developing *both* a sight word vocabulary and phonics at the beginning, as well as emphasizing context, visual clues, and so on.

Table I-5 presents the emphases found in representative reading methods textbooks for 1955–1965 and for 1972–1978.

Table I-5 shows a considerable shift in the views on beginning reading. In the decade before *The Great Debate*, 82 percent of the methods textbooks recommended a meaning-emphasis, with the remaining recommending a

Table I-5 Comparison of Teacher-Training Textbooks: Changes in Methodology from 1955–1965 Period to 1972–1978 Period

Classification of texts	1955–1965		1972–1978	
	Number	%	Number	%
Meaning-emphasis	9	82%	5	31%
Combined approach	2	18%	6	38%
Code emphasis	0	0	5	31%
	Total = 11		Total = 16	

combined approach. None recommended a code-emphasis. By 1973–1978, the professional textbooks had moved from a meaning-emphasis (with 82 percent preferring it) to a 31 percent preference for a code-emphasis and a 38 percent preference for a combined, eclectic approach. The shift away from a meaning-emphasis seems considerable, especially when one realizes the strong concensus for a meaning-emphasis during the 1960s.

And yet others have interpreted the changes as essentially insignificant. Rudolf Flesch concludes that the 25 years since his *Why Johnny Can't Read* in *Family Circle* brought no changes (Flesch 1979, 1981).

Did the movement away from a meaning-emphasis and toward a code-emphasis eclectic approach come from the younger authors? Or did the earlier, predebate textbook authors change their views as well? Five of the authors of the 1972–1978 textbooks had written earlier editions in 1955–1965, permitting an analysis of change over time among the same authors. These five, as a group, were older and of higher status than those whose texts were in their first editions in 1972–1978. Among the five, four favored a meaning-emphasis in their 1955–1965 editions, and one favored a combined approach. Thus, they were similar in their preferences to the larger group of eleven whose textbooks were published between 1955–1965. Their later editions (1972–1978) revealed a greater preference for a code-emphasis, but the shift was not as strong as it was in all sixteen of the textbooks published during 1972–1978. Overall, two of the five textbooks published as earlier editions in 1955–1965 changed their preferences from a meaning-emphasis to a combined approach. One who had favored a combined approach remained the same, and two of those who preferred a meaning-emphasis remained the same. Overall, the “code” preferences in the post-debate editions of textbooks first published prior to 1965 remained somewhat the same. However, the changes that did occur went in the direction of greater code-emphasis. None went from a decoding to a meaning preference.

If we consider only the newer methods textbooks, those written by the “younger” authors whose textbooks were in their first editions in 1972–1978, we find that they tend to prefer a code-emphasis, as compared to the “older” authors’ preference for a meaning-emphasis. Table I-6 presents the numbers and percentages within categories of the “younger” authors—those whose books were first published during 1972–1978.

It is significant that the majority of the “younger” authors in 1972–1978 favored a code-emphasis, whereas the “older” authors of textbooks published during the same period favored a meaning-emphasis or combined approach.

A comparison was also made of the amount of space (average percent of pages in the text) devoted to a discussion of phonics instruction in the textbooks published before and after the debate (Table I-7).

Table I-6 Classification of Teacher Training Textbooks by "Younger" Authors

<i>Classification of texts</i>	<i>1972-1978: "New textbooks" only</i>	
	<i>Number</i>	<i>%</i>
Meaning-emphasis	3	27%
Combined	3	27%
Code-emphasis	5	47%
	Total = 11	

Space given to phonics instruction in most of the textbooks published during 1972-1978 as compared to those published from 1955-1965 generally increased. Table I-7 also indicates that whether a meaning- or a code-emphasis was preferred, the amount of space devoted to phonics instruction increased. For texts classified as meaning-emphasis, the increase was from 2.4 percent to 3.6 percent. Code-emphasis texts, which appeared only in the 1972-1978 period, devoted the greatest proportion of text to phonics instruction—10.6 percent. Only the textbooks that preferred a "combined" approach seemed to use less space for phonics in the 1970s than in the 1960s.

There was also a shift in the terms used to refer to phonics. The 1955-1965 textbooks used the terms "phonics" and "phonetic analysis" equally. In the 1972-1978 textbooks, the term "phonics" was favored. The terms "decoding," "phonic analysis," and "letter-sound relationships" were also used, increasingly over time. "Decoding" seemed to be used with increasing frequency, beginning with the 1974 textbooks and in those published in 1977.

In further analyses of textbooks published between 1972 and 1978, we asked to what extent the authors appeared to base their positions on phonics on research evidence. For this, we looked particularly for references made to the two relevant research studies published in the years prior to publication of the textbooks—the 1966 *27 USOE First Grade Cooperative Research Studies* (see pages 6-7) and *The Great Debate* published in 1967.

Table I-7 Proportion of Textbooks Devoted to Phonics Instruction

<i>Classification</i>	<i>1955-1965</i>		<i>1972-1978</i>	
	<i>Number of Texts</i>	<i>Percent</i>	<i>Number of Texts</i>	<i>Percent</i>
Meaning-emphasis	9	2.4	5	3.6
Combined approach	2	7.5	6	6.0
Code-emphasis	0	0	5	10.6
	Total n = 11		Total n = 16	

Table I-8 Use of Research Findings Relevant to the Phonics Controversy Among Sixteen Methods Textbooks Published from 1972 to 1978

Classification of textbooks	
Specific studies cited	Code-emphasis (N=5) Combined approach (N=6)
<p><i>USOE First Grade Studies</i> (1966)</p>	<p style="text-align: center;">Meaning-emphasis (N=5)</p> <ol style="list-style-type: none"> 1. Four out of five referred to them. 2. All concluded that they showed the combined approach superior to any single approach, or that no single approach was superior. Most concluded that the crucial factor was the teacher. Several said studies showed that phonics should be included. One said they contradicted <i>The Great Debate</i>.
<p><i>The Great Debate</i> (1967)</p>	<p style="text-align: center;">Code-emphasis (N=5)</p> <ol style="list-style-type: none"> 1. One referred to them. 2. This author concluded that the studies did not show superiority of any one method; combining a variety of skills produces higher test scores.
<p><i>USOE First Grade Studies</i> (1966)</p>	<p style="text-align: center;">Combined approach (N=6)</p> <ol style="list-style-type: none"> 1. Five referred to them. 2. Of those, four stated it showed that the combined approach was superior and/or no one method is superior. Four stated they showed that the teacher is the most crucial factor. Two stated the studies were weak. Two said the studies showed benefits of phonics (at least in some areas).
<p><i>The Great Debate</i> (1967)</p>	<p style="text-align: center;">Code-emphasis (N=5)</p> <ol style="list-style-type: none"> 1. Three referred to it. 2. Two stated the main conclusion, with qualifications and criticisms, e.g., weakness of studies reviewed. One did not state the main conclusion but used it to document a minor fact.
<p><i>USOE First Grade Studies</i> (1966)</p>	<p style="text-align: center;">Combined approach (N=6)</p> <ol style="list-style-type: none"> 1. Five referred to it. 2. Three stated its main conclusion along with certain qualifications, e.g., no one phonics program is superior; phonics was not a cure-all; the studies reviewed were weak. One made no reference to the main conclusion but cited a fact instead. One said it stirred up a "dead-end controversy."
<p><i>The Great Debate</i> (1967)</p>	<p style="text-align: center;">Code-emphasis (N=5)</p> <ol style="list-style-type: none"> 1. Two referred to it. 2. One did not state the main conclusion but used it to support claim that basal reader preprimers have too few words to make them meaningful. One stated the main conclusion and used it to support their methodology.