

**Quotes from and Reflections on
Dr. Roland P. Carver's
Casual Model of Reading**

Taken from
The Causes of High and Low Reading Achievement

Creating High Reading Achievement
by means of
Systematic Spelling Instruction

This is a work-in-progress.

The date below is the latest installment.

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Introduction

On March 4, 2010 I began reading Ronald P. Carver's masterpiece, *The Causes of High and Low Reading Achievement* (2000 by Lawrence Erlbaum Assoc. Inc.). I found the book so interesting that I read it before the month was over. I noticed that many things I was doing to help children, teens, and adults learn to read were recommended in Carver's book. The main difference is that Carver felt that only computer programs could deliver the kind of instruction he was advocating. Unfortunately Carver had nothing to say about handwriting. I consider handwriting, cursive in particular, the vehicle of choice for delivering literacy instruction. You can purchase Carver's computerized program at <http://www.carverlearning.com/>

I have used several good phonics programs over the years to teach reading. One program that has proven particularly helpful is *Blumenfeld's Alpha-Phonics* by Samuel L. Blumenfeld. I have used both the 1983 and the 1997/2005 editions. I teach *Blumenfeld's Alpha-Phonics* a bit differently from the way many other phonics programs are taught in that the main thrust of the instruction is actually spelling. I first set for myself the high goal of "total linguistic function." Total linguistic function is the term Mr. Raymond Laurita, the founder of *Orthographic Structuralism*, used to describe the complete goal of all literacy instruction. "Total linguistic function" includes competence in speaking, reading, writing, and spelling. This is the goal I keep in mind when teaching *Blumenfeld's Alpha-Phonics*. Mr. Blumenfeld's program is uniquely designed for achieving "total linguistic function" in that the words are taught in their proper spelling-families with the irregular words being taught right along with the other words sharing the same spelling pattern. There are no sight-words taught in the program as wholes to be memorized apart from consideration of their spellings. There are no pictures since pictures can encourage guessing.

I was very captivated by Mr. Carver's insistence that spelling is a cause of high level reading achievement, which was exactly what I was witnessing every day in my tutoring with *Blumenfeld's Alpha-Phonics*. Neither Mr. Carver, now lamentably deceased, or Mr. Blumenfeld appear aware of each other's work, so that anything I find common between there is purely my own opinion.

I doubt that Mr. Carver envisioned a first-grade teacher teaching the spelling of 3,033 words (the number of words in *Blumenfeld's Alpha-Phonics*) using nothing but a piece of chalk and humble chalkboard. This is one reason he concluded that high level reading, as he conceived, it could only be delivered via a computer program. It is my experience that the addition of handwriting, cursive in particular, enables me to capture the students full attention and teach them the spellings of enough word to enable them achieve high levels of reading achievement as defined by Mr. Carver. I hope to establish, in this paper, the logical connection between Mr. Carver's Rauding Theory and Mr. Blumenfeld's program, as I teach it.

Terminology is a tricky thing for well-defined terms are the only way to establish intellectual discussion. The word "phonics" means a lot of different things to different people. Mr. Carver was somewhat critical of "phonics" in his book because he thought that it could lead to the dreaded practice of guessing when reading. Carver's method is more like the linguistics methods advocated by Charles Fries and Leonard Bloomfield. *Blumenfeld's Alpha-Phonics* is more in line with the linguistic methods Carver recommends than the phonics methods he criticizes; and therefore, does not lie under Carver's censure of phonics.

The purpose of these rather extended quotes is to encourage my readers to purchase and study Carver's *Causes of High and Low Reading Achievement* to see what they can make of his theory and how it might enable them to improve reading instruction for all students. The National Reading Panel 2000 report, lamentably, skipped spelling (and handwriting) as a cause of high reading achievement. Carver would have considered skipping spelling a fatal omission, with serious negative consequences for the development of high reading achievement. The quotes will whet your appetite to dig into Carver's book for yourself.

Another factor that led me to consider Carver's theory is my recent experience teaching Noah Webster's 1824 *American Spelling Book* and his 1908 *Elementary Spelling Book*. Miss Geraldine Rodgers alerted me of the advantages of teaching reading with Webster's Spelling Books in her important 2004 essay, "Noah Webster's Way Was the Right Way." You can read the essay on my website. I have republished Webster's 1908 *Elementary Spelling Book*. The title of my book is, *Noah Webster's Spelling Book Method for Teaching Reading and Spelling*. It is available from Amazon and Barnes & Nobles.

Quotes from the “Preface”

Great attention will be devoted to the main factors that influence how much a student gains in reading in a single year of school, or a calendar year. If we can increase the reading achievement of student then they will automatically comprehend more of what they read whenever they read. An attempt will be made to answer the following questions: what things can educators do to increase reading achievement, and what things are beyond the influence of educators (ix).

[My comments will be interspersed through this document within parenthesis. Don Potter]

Second, tradition will also be defied by theorizing that beginning readers should not be asked to guess at pronunciation of words; they should not be asked to guess from context via the whole-language approach or guess words from letter-sound correspondences via the phonics approach (ix).

[Carver is largely arguing against guessing of any kind. This is why Noah Webster used superior numbers (figures) in his pre-1829 editions and diacritical marks in his post-1829 Spelling Books. Edwin Leigh (1860’s) and Eliza Burnz (1890’s) developed special fonts to eliminate the need for beginning students to guess when identifying words for the first time. *Blumenfeld’s Alpha-Phonics* (1983/1997/2005) eliminates the need to guess by using a spelling-family approach that explicitly teaches irregular words with their spelling families.]

The teaching of correct spelling is usually done for the purpose of helping children write better. One major thrust of this book is that the teaching of spelling not only helps children increase their reading level but it also helps children learn to read faster (ix).

[Before starting the notes from the chapters, I would like note that Carver uses a lot of abbreviations in his text, which in turn are used in algebraic formulas. I have simply converted the abbreviations to their corresponding full names beginning each word with a capital letter. This makes it much easier to read the quotes. Readers who purchase the book will have apply due diligence to overcome this little hurdle in order to understand the text. I am also going to include an abbreviated “Glossary” at the end of this document that will explain some of the new terms that Carver coined. I hope my quotes will be something of an “Easy Introduction to Carver’s Causal Theory of Reading” along with some of my own applications and speculations clearly separated in parenthesis. Carver’s impact on my daily tutoring has been quite significant: one man’s practical application of the causal model to daily tutoring. My experience teaching Webster’s 1908 *Elementary Spelling Book* has convinced me that there is no more secure and rapid method of increasing a students reading ability than by teaching Spelling. I heartily recommend that teachers, tutors, and researchers try it themselves to see if there is substance to Carver’s contention.]

Quotes from Chapter 1

The Causal Model

The causal model is based on rauding theory.

The term “rauding” was derived from a combination of two words: reading and auding: reading usually means the attempt to comprehend language in the form of printed words, and auding usually means the attempt to comprehend language in the form of spoken words.

[Here is a pdf document from the Carver Learning Systems website. It explains the theory behind the CaRT (**C**arver **R**eading **T**utor computer program.)]

<http://66.147.244.192/~carverle/wp-content/uploads/2010/02/theory.pdf>

Quotes from Chapter 2

Context for the Causal Model

Five Basic Reading Processes or Gears

<i>Gear</i>	<i>Process</i>	<i>Culminating Component</i>	<i>Typical Rate for College Students</i>
5	Scanning	Lexical accessing	600 wpm
4	Skimming	Semantic Decoding	450 wpm
3	Rauding	Sentence integrating	300 wpm
2	Learning	Idea-remembering	200 wpm
1	Memorizing	Fact-rehearsing	138 wpm

Note: Wpm symbolizes standard length words per minutes; a standard length words is six character spaces, or six letters and spaces.

[Note that each gear/process includes the previous component. This explains why each process requires more time.]

...Carver has contended that speed-reading is really a skimming process (25).

The rauding process is also unique in that it is the only basic reading process which has as its goal the comprehension of sentences. By internally articulating each word in a sentence as it is recognized, the individual is better able to remember the ideas associated with these words from the beginning to end of the sentence. In order for the rauding process to operate successfully, the sentence integration must be involved as each word in the text is encountered (25).

[On page 28 Carver talks about how to “induce the rauding process.” I will summarize: a. Difficult text will not be read with the rauding process, b. Telling students to read only for essential elements will cause them to shift to Gear 3, and telling them to read so they can recall details later will cause them to shift to Gear 1, c. Reader’s choice.]

This text will only deal with the rauding process, or typical reading, and how it is involved in reading achievement. This book will not deal with other of the basic reading processes, such as those processes involved in scanning text, skimming text, learning from text, or memorizing text (28).

[There is a great deal of confusion concerning the different reading processes. Carver’s distinctions here are very helpful. He notes that Ken Goodman believes there is only one reading process.]

A major thesis of this book is that all individuals process words during normal reading almost exactly the same way. There will be no attempt to find and magnify differences between individuals in how they process words during reading because they operate a common grading process, called the *rauding* process. The rauding process is ordinarily the same across different individuals as long as they are reading relatively easy material at their normal reading rate (31).

[This is probably the most controversial part of Carver’s causal model, and the part that I am still considering. I currently hold that there are two different kinds of readers based on how they process the letters to identify word: “Subjective” readers read from the meaning of the words invoking context and memorized sight-words to assist in their guessing. “Objective” readers read from the sounds represented by the letters. It appears that initial instruction largely determines which kind of reader they become. This consideration aside, Carver makes a strong case for eliminating guessing by teaching reading via spelling, which would produce “objective” readers. A “deeper” reading of Carver may show that there is no contradiction.]

Concerning whole-language Carver writes, “This approach involves the guessing of unknown words from context and the use of whole words (not letters) and whole sentences (not isolated words) in reading instruction (42).” [Carver has a whole chapter on whole language later. I include this sentence here because it is the shortest comprehensive description of whole language that I have seen. It accurately epitomizes much of the guided-reading training I received when teaching public school in Texas.]

Quotes from Chapter 13

Two Causes of Pronunciation Level

This is the most important chapter in the entire book from the standpoint of reading educators (175).

But the core of reading achievement for most beginning readers and many intermediate readers is their ability to transform printed language symbols into their spoken counterparts so they can comprehend printed words as effectively as they can comprehend spoken words (175). [Note especially the words, “as they can comprehend spoken words.” This is the essence of the reading theory as well as the Simple View of Reading.]

Therefore, for students below raudamaticity in grades 3 to 7, there should be instructional activities which promote the accurate pronunciation of printed words whose meaning is known when they are spoken. Learning to quickly discern the correct spelling of these words in isolation is likely to represent an over-learning that will guarantee that these words can be accurately recognized out of context later, that is, pronunciation level should show a high gain (117). [This is basically what we do when we teach students to spell the 3,033 words in *Blumenfeld’s Alpha-Phonics*. Each word (regular and irregular) is taught with oral spelling and cursive handwriting in proper spelling families, reviewed periodically, and later practiced in decodable text – without any need for guessing from sight-words or “phonics.”]

Teaching Spelling. One very important way to learn how to pronounce more words accurately is sometimes overlooked, that is, learning to spell more words accurately (Ehri, 1989a). Spelling is often considered a very important part of writing, but secondary to reading. In this regard Gill (1992) **noted that spelling was used to teach reading for almost 200 years, but “by the beginning of the 20th century, the tide has so turned that learning to spell was largely seen as incidental to reading”** (p.80). However, Shanahan (1984) studied reading and spelling in second-graders and fifth-graders, and then hypothesized that, “... spelling instruction would have the greatest impact on reading instruction.” (p.475) (Carver 178). [Emphasis mine. This really caught my eye when I first read it. I was moving closer every year to a spelling approach to teaching reading, both from my experience teaching *Blumenfeld’s Alpha-Phonics* and my work with Webster’s Spelling Books.]

Evidence now exists which suggests that spelling words accurately is one of the most important parts of learning to decode words, for beginning readers. In this regard, Perfetti, has contended that “practice at spelling should help reading more than practice of reading helps spelling (179).

In summary, teaching spelling and learning to spell words correctly is a very important way to increase pronunciation level for student below raudamaticity. For students at raudamaticity, teaching spelling and learning to spell new words is only helpful if it

coincides with learning the meaning of new words (179). [I would like to note here that when we read words unknown to student in *Blumenfeld's Alpha-Phonics* or Webster, I always explain the word and illustrate its usage with a sentence. I have even done this with Spanish speaking students by giving a running gloss on all the words in *Alpha-Phonics* as the student learned to decode the words into their sounds. I was amazed at how well they were able to remember the words when they encountered them later. People who criticize phonics are often unaware that good phonics teachers explain the meaning of every word the students read. Hazel Loring published her highly effective *Reading Made Easy with Blend Phonics for First Grade* in 1980 which is simply list of words, yet she clearly says that the teacher is to use every word in a sentence or have the students come up with their own sentences. Word meaning is an essential part of the program, which a glance at the word lists might lead some to a hasty inference that word meanings is neglected. I follow the same procedure when teaching *Blumenfeld's Alpha-Phonics*, as Mr. Blumenfeld also recommends.]

Teaching Phonological Awareness. [Carver's ideas here will come as a surprise to most educators.] Teaching and learning with respect to phonological awareness can improve phonemic awareness, but can this kind of teacher learning improve pronunciation levels. That is, phonemic awareness can be improved through education or training by focusing upon discriminating the phonemes in spoken words. However, it is not clear that teaching children to break up spoken words into phonemes without also learning to associate letters with phonemes will substantially improve word recognition, or increase pronunciation level. ...Cipher training dramatically improved pronunciation level but phonemic awareness training improved pronunciation level a very small amount, if any (180). [This is a very important observation given the amount of time teachers are now dedicating to phonemic awareness training. I once asked Sam Blumenfeld what he thought about phonemic awareness. He thought it was a result of teaching children to read with phonics rather than the cause.]

Thus, as children learn to read more and more words, they will automatically become more phonologically aware, that is, they will be able to take the first sound off /hat/ and tell you that the word /at/ remains. They will be able to do this without any direct instruction in phonemic awareness, that is, this awareness will be a byproduct of learning to pronounce more words that they know (182).

It appears that phonemic awareness was not an important causal factor with respect to pronunciation level in this Torgesen, et al. research (183). [You will have to read this chapter closely to see how Carver reinterprets some of Torgesen's research on phonemic awareness. I just want to draw attention to the possibility that phonemic awareness is overrated as a cause of high reading achievement.]

Therefore, it seems reasonable to disregard phonemic awareness as a factor in the causal model... (183).

Quotes from Chapter 18

The Rauding Diagnostic System (RDS)

The causal model can be used to diagnose reading disabilities, and this is important from a practical standpoint. If we can improve our diagnosing of reading problems, then we should be able go solve more of those problems. (241)

In most cases, the diagnosed handicap will probably best explain why a person has a reading problem. However, in some cases a person may have no handicaps, only poor teaching learning experiences. In any event diagnosis should help to determine if low achievement can be remediated, how to best remediate it, and how long it will take to remediate it. This system of diagnosing reading problems will be called the rauding diagnostic system, RDS. (241, 242) [I have found that most of my remedial students respond very rapidly to my spelling approach to teaching reading. Their rapid improvement causes me to suspect that the real problem was the learning/teaching experience and not a personal handicap, otherwise they should not have improved so rapidly.]

The RDS is mostly appropriate for Poor and Very Poor readers (244).

RDS definition of dyslexia: Individuals who have trouble learning the sound-symbol correspondences involved in reading printed words but have no trouble acquiring verbal knowledge are often labeled as having dyslexia. Therefore, individuals who are Handicapped/pronunciation-aptitude, but not Handicapped/vocabulary-aptitude, will be defined as having dyslexia. Many individuals who have been studied in the past with severe dyslexia are also likely to have been Handicapped/cognitive-speed-aptitude. Therefore, individuals who are handicapped in both pronunciation aptitude and cognitive speed aptitude, but not handicapped in verbal aptitude, will also be defined as having dyslexia and referred to as “severe dyslexics.” Those dyslexics who are not handicapped in cognitive speed will be referred to as “mild dyslexics.” so in the Rauding Diagnostic System, dyslexia included two subcategories – mild dyslexia and severe dyslexia (248).

[Carver mentions five definitions of dyslexia. He also discusses the 1994 Orton Dyslexia Society Research Committee’s definition, saying, “The RDS definition of dyslexia is very close to that of the Dyslexia1994. The interested reader will want to study closely pages 250 – 251.]

It should be noted the Rauding Diagnostic System definition of dyslexia, several types of individuals can be diagnosed as dyslexic who have been excluded in the past, namely, IQ under 90, socioeconomically disadvantaged, inadequate opportunity to learn to read, and severe neurological or physical disability. The only traditionally excluded group that would still be excluded under the RDS definition are those individuals with sight and hearing problems (poor vision despite corrective lenses and poor heading despite hearing aids. (251)

With respect to excluding certain kinds of individuals from having dyslexia, Ellis has contended that “if we are to use the term ‘dyslexia,’ then *anyone* with unexpected reading problems must be eligible.” The RDS does allow more individuals to be categorized as dyslexic than the Dyslexia1994 definition, and this is in keeping with the above admonition by Ellis. (251)

Spelling Treatment. Juel has shown that learning versatile letter combinations, such as “ea” in “pear” and “bear” speeds up identification of words above and beyond their easy of decidability. It seems likely that most students will gradually learn these orthographic redundancies via spelling but that the Handicapped/pronunciation-ability students are likely to learn these kinds of orthographic redundancies at a much slower pace. However, it seems likely that learning to spell most of the words they know when listening would help these individuals increase their Pronunciation Ability, which in turn would improve Rauding Accuracy Level, Rauding Rate Level, and Rauding Efficiency Level. So spelling is a recommended treatment for those individuals who are diagnosed with Disabled Pronunciation Level in the Rauding Diagnostic System (253). [Note the importance of spelling instruction for remediation of dyslexia.]

[On page 256, Carver mentions his Computer Assisted Reading Diagnosis (CARDS). So far, I have not been able to find out much about this program.]

...the Rauding Diagnostic System of dyslexia is focused upon aptitudes, not achievements. Furthermore, the RDS definition of severe dyslexia requires a handicap in cognitive speed aptitude, whereas speed or rate has not been explicitly mentioned previously in formal definitions of dyslexia (247). [I think Carter would be appalled at the present emphasis on “fluency” which rushes kids to read words without consideration of their spellings. Rauding rate improves from learning the spelling of more words, not improving guessing efficiency by teaching context clues and sight-words. Many of the current instructional practices to increase fluency are ill advised and counterproductive.]

The diagnosis of dyslexics and other reading disabilities by using IQ-discrepancy formulas needs to be discontinued because it appears to be theoretically unjustified and because there is no sound evidence that this system of diagnosis leads to higher reading achievement. The Rauding Diagnostic System should be tried because it is more logical from a theoretical standpoint and because it seems likely to produce higher gains in reading achievement when it is combined with the recommended differential treatment. (257)

Chapter 19

[I have no quotes from this chapter. It basically examines the traditional concepts that have been used by researchers and shows how the Rauding Diagnostic system is an upgrade. Researches will want to pay close attention to this chapter.]

Quotes from Chapter 20

Intelligence and Reading

An untimed standard reading comprehension test which contains passages that are difficult to understand and question that require a great deal of abstract reasoning to answer correctly, is not a good measure of reading achievement. These kinds of achievement tests are actually general intelligence tests in disguise, or IQ tests, because they measure the two primary ingredients of ability (*g*), namely, fluid intelligence and crystallized intelligence. If a timed time is placed on this kind of a reading achievement test, so that it becomes speeded, the it will be more related to cognitive speed aptitude, and therefore less related to fluid intelligence and crystallized intelligence. [Miss Geraldine Rodgers pointed out to me years ago that silent comprehension tests are more IQ tests than reading tests.]

IQ tests should not be used to measure potential in reading, and should not be used to determine who gets special help in reading. IQ tests should not be used in this manner because there is no research evidence which supports this type of usage, and there is a great deal of research evidence which indicates that IQ tests are invalid when used in this manner (296). [I would like to observe that I have successfully taught students whose IQ was said to be as low as 40. I have taught students whose parents had been told that their children would never learn to read. The diagnostician obviously made a misdiagnosis, but it is a good thing the parents did not give up in despair in view of the reality that the remediation has proven successful. I tell all my parents that no test available can tell us beforehand if their children can learn to read or not. All we can do is teach them with the very best methods and see how they do.]

Quotes from Chapter 21

Volume of Reading

[Before I begin my quotes, let me make some observations that grow out of my many years in the elementary classroom where sustained silent reading (SSR) was a part of everyday's classroom work. A common feature of almost every school is the *Reading Renaissance* program, also called *Accelerated Reader*. Books in the school library were coded with the Flesch-Kincaid (used to use Fry's) Grade Levels. Now they use the ATOS System. Students take a test (STAR) to determine their "zone of proximal development," a range of books above and below their independent reading level. They select books on the low end of that range and then take multiple-choice computerized tests over the books. After they get 100% on three consecutive tests, they can move up another level. Levels are by year and month, so they are basically moving up one month at a time. I noticed a couple alarming things about the program relating to the grade levels. The early books are practically entirely composed of sight-words with lots of pictures on every page. This is bound to encourage guessing. The fact that grade levels are determined by just two factors, word length and sentence length has the interesting effect of limiting both lexical and grammatical complexity. Student get little opportunity to exercise their phonic reading skills because they words have been read so many times that the student do not need to use any decoding skills to identify them anymore. I speculate that decoding skills can actually atrophy as a result of lack of use. I also discovered that teaching first-graders to decode polysyllables enabled them to increase their grade levels by several years. As a result of this experience, I now teach first-graders to decode common polysyllabic words so their reading will not be stymied by artificially limiting them to monosyllables and sight-words. I was pleased to discover that Carver has discovered the downside to sustained silent reading as a means of increasing reading achievement. The ATOS System of leveling also measures the "grade level" of the words, but I am not sure how they go about determining the grade level of a word. Now to the quotes.]

[Let me begin with a paraphrase: In 1990 Carver presented a causal model in which volume reading occupied a central position.]. Subsequent research and theory development forced volume of reading out of the causal model, and forced pronunciation level into its prominent place (298).

Verbal knowledge level cannot be increased by easy reading, because students will not encounter any words they do not already know auditorily that is, they cannot increase their verbal level words because they will not encounter any words that are not already automatized when they read relatively easy material. ... This means that students who spend a lot of time reading relatively easy novels – called recreational reading – will not gain more in Verbal Level, Pronunciation Level, or Accuracy Level, than students who spend an equal amount of time watching television or playing baseball (299).

Hard reading involves texts that have high difficulty levels relative to the ability of the reader: Difficulty Level is higher than the Accuracy Level. Getting student to tackle relatively hard material and stick with it without becoming frustrated and giving up is not an easy challenge to meet. In this regard, Jorgeson (1977) found correlations of .23 and .25 between relative difficulty of material that student were asked to read and the number of behavioral problems in the classroom. Theses correlations are not large but when all the factors which cause misbehavior are considered, this seems to be one of the contributing factors. That is, when students are asked to read relatively hard texts (materials that are above their frustration level), it should not be surprising that aggressive behaviors arise in some of the students (300).

Beginning readers and intermediate readers should not be asked to engage in hard reading because this will be too frustrating for them. When these students try to read relatively hard material, they are likely to encounter many unknown words, that is, audamatized words that have not been pronounced plus words that have not yet been audamatized. This kind of reading may be so frustratingly difficult that an aversion to reading is learned. These readers should not be given relatively hard texts to read because they are likely to learn to avoid reading under these conditions (300). [I suggest reading Raymond Laurita’s essay, “Frustration and Reading Problems” from the 1972 Bulletin of the Orton Society. It is available on my website.]

With respect to advanced readers, they are all purported to be at raudamaticity. The main way for these readers to increase their reading achievement, or Efficiency Level, is probably to engage in high volume of hard reading. That is, studying relatively hard materials, they are likely to increase Vocabulary Level and Accuracy Level, which in turn will increase Efficiency Level (300).

[Now I am going to include Table 21-1 because it summarizes Carver’s recommendations regarding volume reading. This is important because it affects classroom practices.]

**Recommended Volume of Reading at Varying Level of Relatively difficulty for
Beginning, Intermediate, and Advanced Readers**

<i>Relative Difficulty Of Text Being Read</i>	<i>Beginning Readers (Below Raudamaticity)</i>	<i>Intermediate Readers (At Raudamaticity)</i>	<i>Advanced Readers (At Raudamaticity)</i>
Relatively Easy $D_L < A_L$, called “easy reading”	Low Volume	Low Volume	Low Volume
Matched Difficulty $D_L = A_L$ called “matched reading”	High Volume	High Volume	High Volume
Relatively Hard $D_L > A_L$ called “hard reading”	(Zero Volume)	(Zero Volume)	High Volume

D_L = Difficulty Level, A_L = Accuracy Level.

Table 21-1 summarizes the recommendations regarding volume reading at various levels of relative difficulty of text for beginning, intermediate, and advanced readers. Notice that a low volume of easy reading is recommended for beginning, intermediate, and advanced readers, in order to maintain all of their raudamitized words at asymptote. Also notice that high volumes of matched reading is recommended for beginning, and intermediate readers, in order to help increase the number of raudamatized words, and thereby increase reading achievement, or Efficiency Level. Finally, notice that hard reading is not recommended for beginning and intermediate readers, but it is recommended for advanced readers. Hard reading is likely to be very frustrating for beginning and intermediate readers, and not an effective way to increase reading achievement, or Efficiency Level. On the other hand, hard reading is likely to be the main way that advanced readers can increase their reading achievement, via increasing Vocabulary Level and Accuracy Level simultaneously, by learning new words and concepts that can become raudamatized with practice (300, 301). [Recently I had a beginning first-grade tutoring student come to me with the her *Accelerated Reader* book, *Toad on the Road*. It was a 1.0 book. Here is the first page, "I love to drive. I am a Toad, Here I come – Toad on the road!" Just the first page contained 7 out of 10 words that contain spelling patterns the child has never been taught, yet she is expected to be able to read the book independently! This book definitely violates Carver's criteria for a reader appropriate for a student at this level. It is bound to encourage guessing.]

Print Exposure:

[On pages 304 to 309, Carver examines the work Stanovich, West, and A. E. Cunningham on high volume reading as a cause of high reading achievement. I was familiar with this work. There is a link to an essay by Cunningham and Stanovich on my website, "What Reading Does for the Mind." I will not include any quotes here, but would like to direct your attention to Carver's close evaluation and criticism of the study.]

It does not seem possible for a person to spend 100 hours or 1000 hours, for example, reading popular fiction from a number of different authors, and experience a substantial gain in Pronunciation Level, or Accuracy Level, or Efficiency Level. These gains would seem unlikely because this type of reading involves easy material and would contain few new spelling patterns. So from the standpoint of rauding theory, it does not seem likely that this kind of increased print exposure – reading more light fiction – would increase Pronunciation Level, or Accuracy Level, or Rauding Level, or Efficiency Level. [I would like to emphasize the phrase "and contain **few new spelling patterns**." Just a quick look through the *Lord of the Rings* will show that it contains few polysyllables or advanced spelling patterns. This is why teaching Webster's Spelling Books can have such a dramatic impact on reading efficiency. Marcia K. Henry has book called *WORDS* that teaches the Anglo-Saxon, Latin, and Greek spelling patterns of English. I have found this very effective in increasing reading levels. Although it is considered old fashioned, a year or two of Latin would help anyone's English reading efficiency. I wrote my *Beyond Blend Phonics* and *WISE OWL Polysyllables* to teach new spelling patterns and increase the students reading levels.]

[Carver has a lot more to say about research into volume reading that I will not quote here. He had assumed that it would be an important cause of high achievement. Carver writes, “Carver (1990) even advanced the construct of volume of reading as a causal factor, as was noted earlier. However, there was no evidence that the level of reading achievement of these students increased due to this book reading that involved students spending more hours reading “with interest and without difficulty (302).” In summary, Carver concludes, “Again it seems much more likely that higher reading achievement is a cause of higher volume reading than higher volumes of reading is a cause of high reading achievement (303).” [Note specially the last statement. I was always the leading reader in the summer reading program at the local library in Rising Sun, Indiana. The question is, “Was I reading a lot because I was a good reader?” or “Did reading a lot make me a good reader?” Carver would say the former. I do remember my first-grade teacher reading stories that today would seem more appropriate for older grades, which undoubtedly increased our vocabulary level. I also recall that I was exposed to the KJV Bible at Bible class and Church, all of which have influenced my reading achievement in some not so subtle ways. Jean Chall makes the point in her *Stages of Reading Development* that Church attendance was a major influence on reading levels years ago. I am talking about vocabulary exposure and not religious development.]

Summary of Evidence: Typical students in grades 3, 4, and 5 who spend 20 to 30 hours reading relatively easy books do not gain in reading achievement, or Efficiency Level.

Given the current status of theory and research, educators need to discontinue all sustained silent reading programs in middle grade classrooms until there is direct experimental evidence that Sustained Silent Reading causes higher reading achievement; otherwise these programs should be regarded as recreational and the educational equivalent of recess for most students. High volumes of easy reading should not be recommended for any student as a way to increase reading achievement (310).

Forget Me Nots: “A high volume of reading relatively easy texts, such as reading light fiction for recreation, is not likely to increase reading achievement because no new word or concepts will be learned (310).

[I appreciate the honesty and diligence of Dr. Carver that induced him from 1995 to 2000 to reverse his views on high volume light reading as a cause of high reading achievement.]

Quotes from Chapter 22

Whole-Language Approach

[I find this chapter particularly interesting because of all the whole-language training I received when I was a public school teacher. My training was extensive but not very convincing. Carver explains why. I hope that everyone who picks up Carver's book will give this chapter serious consideration as the intrusion of whole-language into American education has had - and continues to have - serious negative consequences on reading achievement.]

It is likely that the whole-language approach causes students to read slower (lower Reading Rate Level). It is also likely that the whole-language approach is one of the causes of low reading achievement, or low Efficiency Level, for students with low pronunciation aptitude (311).

Theoretical Background. The theory underlying the whole-language approach can be traced back to 1967, when K. S. Goodman argued that reading was a "psycholinguistic guessing game." He contended that "efficient reading does not result from precise perception and identification of all elements, but from skills in selecting the fewest, most productive cues necessary to produce guesses which are right the first time" (Goodman 260). This guessing hypothesis is the core of whole-language theory.

More of the theoretical foundation underlying whole-language is provided by the top down reading model of Frank Smith (1971). One of his ideas was that "the more difficulty a reader has with reading, the more he relies on the visual information; this statement applies to both the fluent and the beginner" (p. 221) Smith thought that good readers were able to correctly predict or guess words from a sampling of letters within words and a sampling of words within sentences, without having to look at all the letters or all the words. This procedure supposedly worked because of semantic and syntactic redundancy of nonvisual information, and it supposedly worked quicker than looking at all the letters or looking at all the words (312) [**Mr. Potter's Secret of Reading**, "Look at all the letters the right way, and no guessing." I have a warning sign in the front of my classroom that reads, NO GUESSING ZONE.]

[The impact of whole-language theory on teachers' perceptions and practices was very evident in schools where I taught. I had many teachers tell me that accuracy in word identification was unimportant as long as the students could get to the meaning. One time I showed a fourth-grade teacher an oral language reading test that I had given one of her students who made mega-errors in her reading. The teacher told me she was uninterested in oral reading score since some of her worst oral readers were her best students. Flabbergasted, I declined to get into an argument. I hope she reads Carver's eye-opening chapter on whole-language someday.]

The whole-language approach is grounded in this guessing hypothesis which purports to describe the reading process used by a fluent reader (312).

It seems reasonable to summarize the theoretical basis of the whole-language approach in the following five tenets:

1. Learning to read is natural just like learning to talk is natural, that is, both are natural uses of language to communicate; children do not need to be taught to listen and they do not need to be taught how to read. (K. S. Goodman & Y. M. Goodman, 1979).
2. Because reading is natural, it should be learned in natural settings that involve actual authentic language situations, for example real books should be used not contrived books such as basal readers (K. S. Goodman, 1992; Smith, 1976).
3. Good readers guess the words they do not know using context, not sound-it-out or decoding strategies (Smith, 1979), and all readers should be taught to do this (K. S. Goodman 1967; Smith, 1979).
4. Teaching children to decode isolated words by getting them to pay attention to the letters in the words is wrong because this is not natural, that is, we do not teach children to talk by teaching them syllables or phonemes (K. S. Goodman & Y. M. Goodman, 1979).
5. Writing is a natural way to communicate and helping children learn to write to communicate is an important aspect of learning to read (K. S. Goodman & Y. M. Goodman, 1979)

Research Evidence. [On page 321 and 322, Carver evaluates these five tenants by citing research relative to each of the tenants.] He concludes, “In summary, these five tenets of the whole-language approach have little or no empirical support whereas there is a great deal of research evidence that is counter to Tenet No. 3 and Tenet No. 4. The scientific evidence indicates that teaching children about letter-sound correspondences helps them read better, and that reading is not a psycholinguistic guessing game for good readers (322).

With respect to existing evidence, it seems clear that there is no basis for considering whole-language to be the best approach for increasing reading achievement. The best approach **would** have to teach the alphabetic principle in kindergarten or first grade. The best approach **would not** require beginning readers to read words that they do not know by guessing a word that fits the context (323). [Emphasis mine. This is why I do not recommend Accelerated Reader for kindergarten or first grade – until they have a firm grasp of the alphabetic principle.]

Science. The whole-language approach to reading instruction seems to be implemented by many teachers, (a) in spite of research results which indicate that the theory underlying this approach to be fundamentally wrong, and (b) in spite of research which indicates that teaching the alphabet principle will produce better readers. This inconsistency suggests that political issues may play a bigger role in reading instruction than does science (323). [This is a serious indictment.]

Whole-language theory has all the earmarks of religious dogma that is immune from being modified by evidence. [Then follows a quote from Frank Smith which indicates that Smith is uninterested in “scientifically collected evidence.”]

Whenever the leaders of any ideological movement discourage definitive research, then it is likely that the movement is fueled by ignorance, or it has political or religious goals that are threatened by the more dispassionate goals of science, which are to find out if there is sound evidence to support the ideas (326).

[What follows is my translation of Carver's "Summary of Relevant Causal Model Theory" into common language for easier understanding for those who have not yet mastered all of Carver's abbreviations. They are not hard to understand with a little study, but make the text appear cryptic at first glance. Carver was squeezing a massive amount of information into the small compass of a 443-page book. I can afford to be a more expansive here.]

Summary of Relevant Casual Model Theory

The largest gains in reading achievement during a year come from teaching and learning experiences that improve Vocabulary Level and Pronunciation Level the most. In the early grades, the greatest gains in Auditing Level, Rauding Level, and Efficiency Level are likely to come from instruction that focuses upon increasing Pronunciation Level because learning to pronounce printed words that are known auditorily will increase Accuracy Level the most. The whole-language approach is used most often in the early grade classrooms, and it is primarily devoted to increasing Vocabulary Level via instruction that emphasizes meaning and language improvement. This approach to instruction is not likely to produce the greatest gain in reading achievement because it depreciates direct instruction on isolated words or letter-to sound associations that is likely to produce large gains in Pronunciation Level.

Code-emphasis instruction designed to increase Pronunciation Level is likely to produce a double-dividend in most beginning readers and many intermediate readers because an increase in Pronunciation Level produces an increase in both Accuracy Level and Rauding Level, which are the two factors which cause increase in reading achievement, or Efficiency Level. Because the whole-language approach tends to depreciate activities designed to increase the pronunciation of isolated words (increase Pronunciation Level), this means that this approach is likely to produce lower than optimal gains in reading achievement. Most importantly, the lack of attention to decoding, or to the correct pronunciation and correct spelling of isolated words, is likely to produce lower reading level and a slower reader – lower Accuracy Level and lower Rauding level – which in turn causes lower reading achievement, or Efficiency Level.

Good readers (high Efficiency Level for age) and poor readers (low Efficiency Level for age) operate at the same rauding process when they read relatively easy material, Accuracy Level > Difficulty Level, and neither good readers or poor readers engage in contextual guessing during rauding because all of the words they encounter have been raudamatized. When students in a particular grade in school are given texts to read at a level of difficulty that is approximately equal to the grade they are in (e.g., fourth-graders give fourth-grade reading material), then the good readers in that grade are likely to be able to raud the text without engaging in contextual guessing because the text is relatively easy for them, Difficulty Level > Accuracy Level. However, the poor readers in that grade are likely to engage in context guessing because the material is relatively hard for

them, Difficulty Level > Accuracy Level; the text is likely to contain several unknown words and that the poor readers try to figure out from context. Similarly, even the good readers in a particular grade will also use context guessing for unknown words when they are given relatively hard material, Difficulty Level > Accuracy Level.

Teaching students to guess at unknown words from context without using pronunciation knowledge or cipher knowledge, is likely to be a root cause of low reading achievement, that is, poor teaching and learning with respect to Pronunciation Level (327)

Forget Me Nots: The whole-language approach to reading instruction is not a root cause of high reading achievement because it places too much emphasis on context guessing at the expense of teaching the alphabetic principle using isolated words. [I would have stated that sentence positively, “The whole-language approach to reading is a root cause of low reading achievement because it places too much emphasis on context guessing at the expense of teaching the alphabet principle using isolated words.” I recall Reading Recover students telling me that their teachers told them to look at the beginning and ending consonants, skip the vowels, and guess the word from the pictures and context. Parents told me the same thing. I have taught several Reading Recovery dropouts to read by teaching them the spellings of words taught in a carefully graded orthographic sequence.]

Three Laws of Rauding Theory

From Appendix B (p. 383)

Law I is that *individuals attempt to comprehend thoughts in a passage at a constant rate, called the rauding rate, unless they are influenced by situation-specific factors to change that rate.*

Law II is that *the efficiency of a passage comprehension depends upon accuracy of passage comprehension and the rate of passage comprehension.* The efficiency of comprehension is the produce of accuracy of comprehension and the rate of comprehension.

Law III is that *the most effective rate of comprehension thoughts in a passage is the rauding rate.* The rauding rate is the optimal rate because efficiency of comprehension at all other rates is lower.

[I find these Laws very important because they help me keep my focus on the proper teaching task, which is to teach children how to spell all the words in the passages that I ask beginning readers to read so that they do not develop the guessing habit.]

Grade Level to Reading Rate Conversions
(From Appendix D1, p. 395)

<u>Grade Equivalent Reading Level</u>	<u>Rauding Rate (words per minute)</u>
1.5	112
2.5	125
3.5	137
4.5	150
5.5	162
6.5	175
7.5	188
8.5	201
9.5	213
10.5	227
11.5	238
12.5	251
13.5	263
14.5	277
15.5	289
16.5	302
17.5	315
18.5	326

[I find these rauding rates to be very useful in establishing goals for reading rate for my tutoring students. I always measure the beginning students' reading rate with words employing sound-to-symbol associations that I have taught to automaticity. Reading rates increase with distributed practice on words whose associations we are firming until rauding rates are attained. I did not include the Standard Sentence Per Minute units. The interested student will want to look closely at Appendix D & D1. Appendix C Appendix C explains the rauding equations and the predictive power of the theory.]

Theory and Research

Supporting Dr. Carver's Spelling Approach to Increasing Reading Fluency: Rauding Rate

The most concise way to summarize Dr. Carver's causal model of reading is displayed in the figure below.

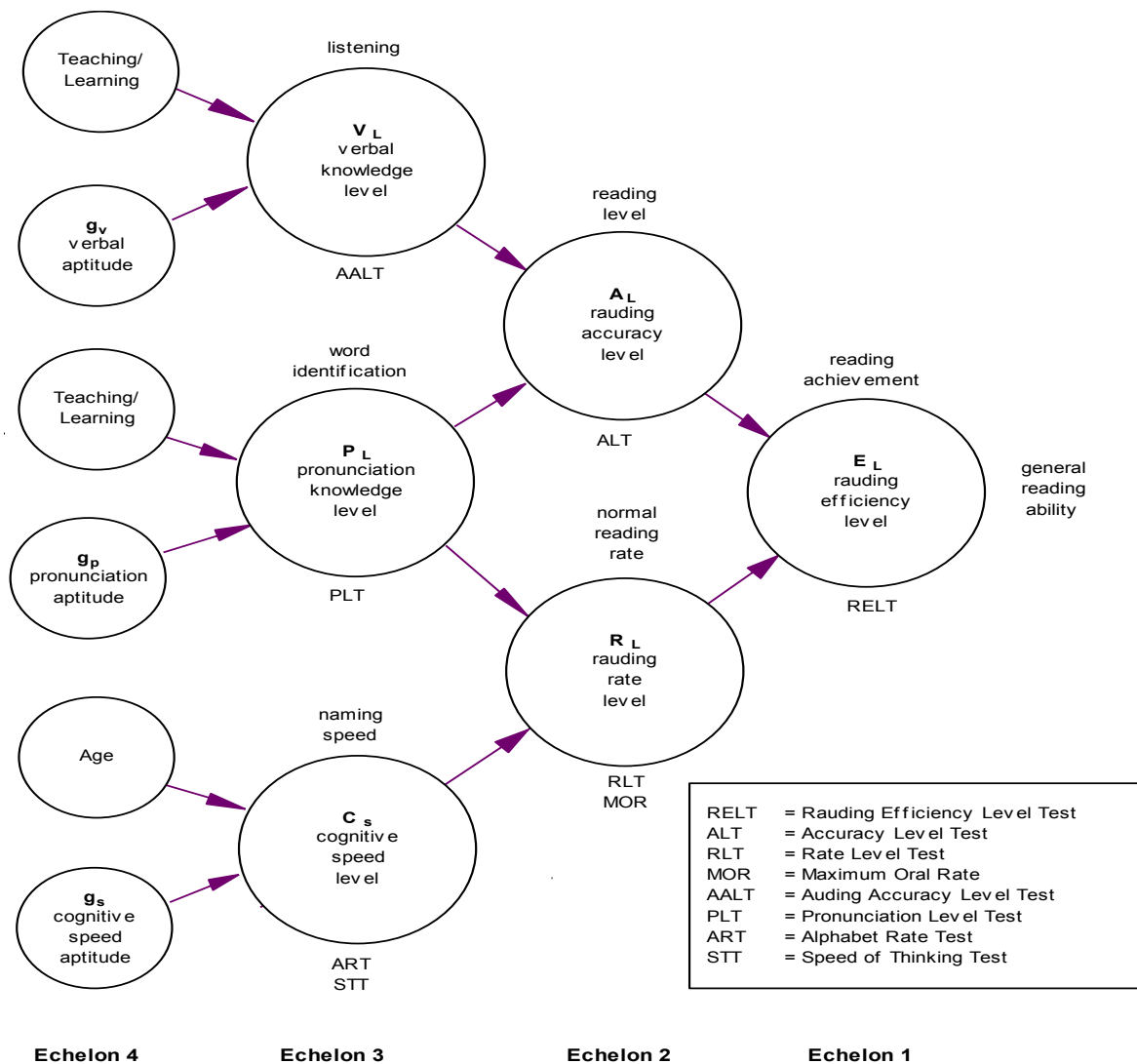


Figure 1. The causal model of reading achievement. (Note: This is a modified version of Figure 1 in Carver, 1997.)

Notice that this model is divided into four echelons. The first echelon begins with E_L , reading achievement, which is basically equivalent to general reading ability. E_L also represents what is often measured by standardized reading comprehension tests and is purported to represent what educators want students to improve each year. From the arrows running between circles in the model, it can be seen that A_L and R_L are key determiners of E_L . A_L is a construct that is similar to the traditional concept of reading level, or instructional level. R_L refers to rate level or the individual's typical reading rate. According to the causal model, the only way to increase E_L is to increase A_L or R_L . The factors that can improve A_L and R_L are represented in echelon 3 namely; V_L , P_L , and C_S . Increasing verbal knowledge level (listening level, V_L) and pronunciation level (word identification, P_L) can lead to improvement in A_L . With respect to R_L in echelon 2, again increasing P_L and making gains in cognitive speed level (naming speed, C_S) can lead to improved R_L . Lastly this model shows the predispositions or aptitudes (verbal knowledge, decoding, and cognitive speed) in echelon 4 that contribute to echelon 3 (V_L , P_L , and C_S) as well as the influence of teaching and age.

Spelling basis in Theory. At the center of the causal model is word identification, pronunciation level (P_L). Instruction designed to increase pronunciation level, P_L , is theorized as simultaneously causing increases in reading level and reading rate, which are two of the main ingredients of reading achievement. It should also be noted that in this theory it has been hypothesized that level of word identification (or P_L) and level of spelling knowledge (S_L) are equal when measured in grade equivalent (GE) units ($P_L = S_L$); there is a great deal of empirical data supporting this part of the theory (Carver, 2003). This means that a treatment which increases word identification level, or P_L , should automatically increase spelling level, or S_L . Similarly, a treatment which increases spelling level, S_L , should automatically increase word identification level, or P_L . Then, increases in P_L and/or S_L should automatically increase reading achievement via increases in reading level and reading rate.

The above theory has an important qualification. The causality noted above should be limited to typical students who know more words when listening than when reading. This type of student will be called a Type I reader. For this type of reader, an instructional treatment designed to increase P_L and/or S_L should also transfer to an increase in reading achievement. The overwhelming majority of students in elementary school should be Type I readers because there are research data indicating that reading level typically does not catch up to listening level until about grade 7 or grade 8 (Sticht & James, 1984).

Any treatment that focuses upon increasing P_L and/or S_L should not increase the reading achievement of students who already know as many words when reading as when listening. Students of this type have been called Type II readers. Type II readers should not profit from instruction designed to increase word identification or spelling because teaching students to pronounce and spell words whose meanings are unknown when listening will not help them comprehend written sentences involving these words. That is, being able to correctly identify or pronounce new words found in texts is not helpful unless the meanings of these words are known when listening. Type II readers need to learn the meaning of new words in order to increase their reading achievement. Therefore, Type II readers should gain the most in reading achievement when they are given vocabulary instruction.

Another important factor to consider when discussing Type I and Type II readers is their reading rate, or the rate at which they can process words when comprehending sentences. When a student, Type I or Type II, learns to pronounce new printed words whose meanings are known, it will ordinarily take a few practice trials to get the word up to speed. This means that a new word needs to be practiced in order to be recognized as fast as old known words. If the necessary practice is not completed, then the word will be recognized more slowly, or haltingly, when

reading silently (slower reading rate) or when reading aloud for others (less fluent). Each individual has his or her own optimal rate for reading, which ordinarily is at the individual's own speed limit for recognizing and comprehending words in sentences (Carver, 1990). This speed limit, or rate is limited by how fast an individual can name randomized letters of the alphabet out loud, called naming speed or cognitive speed. This means that both Type I and Type II readers need to practice the new words they learn until they can recognize them at their own reading rate, or their own speed limit.

So, both Type I and Type II readers can improve their reading achievement by increasing the number of printed words whose meanings are known and can be recognized relatively quickly in print. Type I readers benefit most from a focus on word identification. Conversely Type II readers benefit the most for learning the meanings of new words.

Note from Internet Publisher: Donald L. Potter

January 22, 2011

I consider discovering Ronald P. Carver's *The Causes of High and Low Reading Achievement* one of the most important finds in my ceaseless endeavor to become a better reading teacher. I work with students on every grade level from kindergarten through adult. I consider the teaching of reading to be a High Calling. I can think of no greater joy than to see the light in a child's eyes as they are introduced to the vast storehouse of, knowledge, wisdom, beauty, and adventure stored in the literature of the world.

All the materials in braces are my personal opinions, experiences, and observations. I seek to interpret Carver's concepts in a way that will help me apply the parts of his theory that I find helpful to my teaching. Readers are welcome to develop their own opinions and responses to Dr. Carver's theory. At the writing of his book, Dr. Carver was on the cutting edge of reading research. This book is, as it were, his final statement concerning the development of his theory. He was conversant with all the major research that was being done. He was highly independent thinker. I will consider this paper successful if influences readers to purchase and study Dr. Carver's book, the culmination of his life's work.

His view of spelling as a cause of high reading achievement flies in the face of much of the training I received as a teacher during the whole-language era. It wasn't until I started digging deeper into the whole-language philosophy, which our young teachers were immersed in during their college training, that I began to understand the strange disappearance of handwriting and spelling books from the classroom. I personally attribute the current decline in literacy to the neglect of these two vital disciplines.

The reader will notice that I have only just begun this document and may wonder why I published an incomplete work. I am interested in getting this information out to as many people as possible as quickly as possible. I have a very busy teaching and tutoring schedule and many other responsibilities and publishing projects that make it impossible to find all the time I need to finish this at one setting. For that reason, I am publishing in installments as I can find the time. The date on the title page will indicate the last time I worked on the project.

I wish Carver had considered the impact of handwriting, cursive in particular, on reading achievement. He does mention briefly the whole-language practice of having students do a lot of writing of sentence as a possible means of helping student learn the spelling of more words, but does not elaborate. This is an area where further research would be welcomed. He was focused on computer solutions.

Since this is a work in progress, I invite everyone who reads it to send me any corrections that need to be made or comments that might help me improve the document in any way.

I would like to recommend my paperback edition of Hazel Logan Loring's 1980 *Reading Made Easy with Blend Phonics for First Grade* as a very inexpensive yet highly effective method for teaching Carver's Type I readers with spelling. My *Beyond Blend Phonics: English Morphology Made Easy* and WISE OWL Polysyllables addresses Carver's Type II readers.

Dr. Carver passed away on January 19, 2005. In 1994, he founded the Society for the Scientific Study of Reading.

The excerpt below from Leo G. Davis' concerning "The Truth About Reading and the Spelling Approach" seems me a fitting closure to Dr. Carver's advice on teaching reading via spelling.

The Truth about Reading and the Spelling Approach

Excerpt from *The Spelling Progress Bulletin: Winter 1968*

by Leo G. Davis

WHOLE WORD APPROACH: Unquestionably the "w-w" (whole-word) experiment has turned out to be the most deplorable blunder in academic history. It not only produced countless youngsters who can't read, but also saddled us with a crew of teachers, *few of whom have any practical knowledge of the fundamentals of alphabetical orthography*. Expecting a 5-yr-old to develop a lasting mental picture of a whole word is basically identical to the "turkey-track" approach to literacy that has been a millstone around the Oriental's neck for eons. But worse yet, under current practices the child is expected to "figure out" words to which he has never been exposed, and without any knowledge of what phonics we do have. Idiotic! With that kind of thinking (?) going into our school programs *it's a wonder that any child ever learns to read!* As a natural result of the "look-GUESS" fiasco, current researchers are looking for "guessing" aids (clues) by which children may guess strange words. **They haven't done enough research to discover that there were no guessing aids prior to the w-w debacle, because children were taught to SPELL the words before trying to read them.**

SPELLING APPROACH: Prior to the w-w fiasco there were no "reading" failures per se, because all up-coming, new words were listed as SPELLING exercises ahead of the narratives introducing them, and vocabularies of other texts were controlled to minimize the chances of children encountering strange words, until they had learned to use the dictionary, after which there was no instruction in reading (decoding). In the old-fashioned spelling class children were taught meticulous pronunciation, spelling, encoding, meaning, word recognition, self-expression (in defining words), **all in one course**. The initial "attack" on words was made in the SPELLING class, rather than in literature. Although we frequently forgot exactly how to spell a given word, we seldom failed to recognize it where it was already spelled. Thus there were **NO "reading" failures**, *just SPELLING failures, due to the idiotic inconsistencies of traditional orthography*. Current researchers seem to look upon spelling as the result of reading, rather than as the traditional approach there-to. They seem to expect children to "catch" spelling thru exposure, like they do the measles.