ILLITERACY IN AMERICA

Understanding and Resolving a Grave National Problem

by

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Chapter 1

Introduction

In August 1984 a momentous event occurred in my life. My daughter-in-law gave birth to a beautiful baby girl, Shannon, my first and only grandchild. This event, strangely, started me on a path that eventually lead to the writing of this book.

A surprising discovery

A little more than a year after this, to me, historical occasion, I read an editorial review in the November, 1985 Reader's Digest, titled, "Why Our Children Aren't Reading," about the alarming condition of literacy in the United States. It stated that some 27 million American adults are functionally illiterate, and 45 million more are only marginally literate. The article then dealt with the Phonics-First versus Look-and-Say reading instructional methods, and the controversy surrounding them.

It also mentioned a book by Dr. Rudolph Flesch, "Why Johnny Can't Read," which deals with the root of the problem, namely the — according to Dr. Flesch — ill-advised and non-workable way of teaching reading to children in school: the Look-and-Say method. The article went on to mention a sequel to this book, also by Dr. Rudolph Flesch, "Why Johnny Still Can't Read," which reported that the situation in the schools was still the same, in spite of the numerous research projects related to reading and the teaching of it that had been conducted in the interim period. The results of these research projects, Dr. Flesch stated, convincingly proved that phonics-based programs were superior in their results in comparison to look-and-say programs, but in spite of these findings the schools persisted in using the latter, producing the same dismal results. With my granddaughter to think of, the specter of her not learning to read in school rose before me and I became very interested in this whole business of literacy, or rather the alleged widespread lack of it, in the United States.

I was born and raised in Budapest, Hungary, where I went to school and learned reading in the first grade, as do all children there. A child getting promoted to the second grade without being able to read was inconceivable and just did not happen. When I read that Reader's Digest editorial, I have had lived in the United States for twenty-six years. Quite naturally it came to me as a shock to learn that illiteracy existed here, moreover that it affected such a significant number of people who had finished not only grade school, but sometimes high school as well, and yet were not able to read and write. At first I did not believe it.

Granted, English spelling is difficult. At the first glance it is a hopeless confusion. I remember having to memorize the spelling of each and every word as I learned them, but then, learning English as a second language involves a lot of looking up of words in a dictionary anyway, so I thought it was possible that I missed some of the difficulties native English speakers face when they learn to read.

After reading the Reader's Digest article and the 1981 book of Dr. Flesch, "Why Johnny Still Can't Read," I hunted up his earlier book, "Why Johnny Can't Read," which was published in 1955. To my utter disbelief, during the intervening twenty-six years (more than an entire human generation, mind you!) the functional illiteracy problem had not improved one iota, in spite of the iron logic and firm data Flesch marshaled in presenting the problem in 1955, and in spite of the effective remedy he offered to solve it. It was still hard to believe that illiteracy of such extent existed. But

then I began to notice little things in everyday life, such as people in the supermarket asking occasionally what was written on packages, or where certain products were located — even though the signs overhead clearly stated it — mumbling something about their eye glasses. Was it possible, I asked myself, that there was nothing wrong with their eyes, that the problem was that they cannot read?

Well, schools or no schools, I decided that my granddaughter was not going to stay illiterate if I can help it. I got hold of two primers Dr. Flesch referred to, "Teacher's Manual for Reading with Phonics" by Julie Hay and Charles E. Wingo (J.B. Lippincott Company, 1948), and "Let's Read" by Leonard Bloomfield and Clarence L. Barnhart (Wayne State University Press, 1961). Based on these books, plus "Why Johnny Can't Read," I worked out a slightly modified and simplified phonic system of learning to read, plus I wrote practice text for each step of the process, so that children can immediately use their freshly acquired knowledge and read a little "story" that has meaning. (It is perhaps worth to note here that phonics primers, or rather linguistic primers, are based on systematically sequenced lists of similarly spelled words to practice the instant recognition of English spelling patterns.) Then I put this "course in learning to read," as it were, in a story about a little girl and a little boy who entered, through the good services of a wizard, into the world of letters, and after fascinating adventures ended up being able to read all the print that came before their eyes.

Incidentally, by the time I would have had the opportunity to try this out on Shannon, the issue was moot. Shannon belongs in that fortunate group of youngsters who, through their quick wit, discover for themselves the relationship between letters and sounds, and all of a sudden they can read. When she entered the first grade, she was a reader.

Having finished the book which I called "The Magic Reader," I sent the manuscript to my agent, who made a half-hearted effort to place it with a publisher, who made a half-hearted effort to look at it and then suggest another publisher who might be interested.

Well, I said to myself, "Admit it: the story is not another Alice in Wonderland. Forget it." I took my own advice. But then my circumstances developed such that I ended up having quite a bit of free time on hand. I also had this practical way of teaching folks how to read, and there were still tens of millions of people who were illiterate, or so the article and the books said. One day I read an article in the newspaper about "Project Read" of the San Francisco Public Library, and I decided on the spot to sign up as a volunteer tutor to help somebody learn to read.

Meeting the reading establishment

In order to become a tutor, one has to go through a week-long training course, but there were so many volunteers that it took two months of waiting to get into one. I signed up anyway and waited out the two months. I was quite excited when I went to the first meeting, which was the first time that I got in contact with the American Reading Establishment.

The course was held by a specialist from an institution who spoke to us, laymen, on the subject of reading and the teaching of it with great authority and vigor. My first problem was with her definition of what reading is. Reading, she proclaimed, was comprehension. If one reads a text by merely sounding out words, that person was not reading at all. Only fully understanding the meaning of the text can be considered reading. Very politely and hesitantly I took issue with her statement, saying that being an engineer I consider myself a person capable of reading, yet when I take a pharmaceutical text, or an article dealing with microbiology, or astronomy, I don't precisely understand everything the writers discuss. Was I, therefore, considered a candidate for remedial reading? Then I added that in high school, where the Russian language was a compulsory subject for us, I could quite fluently read Russian text, written in the Cyrillic alphabet, without understanding a

word of it, and then I added that in my opinion reading was reading and comprehension was comprehension. I instantly became the class maverick, which resulted in moments of mirth in the course of the week as she made allowances in her presentation to accommodate my "rigorous criteria for clarity."

Finally the seminar ended and I got a student, an unemployed San Francisco-born man with a family of three children. He is a quick-witted, industrious person, a high school graduate of the San Francisco Unified School District, with every member of his family literate. Unfortunately, during his twelve years of schooling he never learned to read at all. He actually did not know all the letters of the English alphabet. In the course of the next four months, with the help of my little booklet — less the children's story part — he learned to read simple words not by recognizing them, but by actually reading them on the basis of the letters comprising the printed words. Then he found a job and he no longer had time to continue the lessons. Not much later I became busy and I never had another student again. Instead, I was asked to become a tutors' advisor. I made a dozen copies of my booklet and presented them to Project Read administrators, stating that I would gladly give them a release of the copyright if they wanted to make more copies and use them. I was told they would let me know, and that was the last I heard on the subject.

That experience and the tutoring seminar made me think about this whole business of professional reading teachers and remedial reading teachers and experts and administrators and organizations and institutes dealing with the subject of learning to read. And the question came to my mind that with all the effort spent and resources used, how is it possible that one fifth of the population of this affluent country, with compulsory education laws on the books for many generations and reasonably well founded school systems everywhere, still fails to do what seems axiomatic in other literate countries, namely to teach in school how to read printed text? I decided that one day I would take the time to find out. That "one day" is now in the past, and this book is about what I did find out.

Some background information

Before we get to the subject, perhaps it is in order to say a few words about myself, to discuss my "credentials" and "qualifications" to speak up on this issue. As I mentioned, I learned to read in the Hungarian language in my native Budapest.

It appears that in every country in the world with an established educational system, from time to time various "movements" develop in the field of pedagogy, particularly in the area of child literacy. Perfectly well-meaning experts and child psychologists postulate various theories that are aimed at making it for children "easier to learn" something, when the children can learn those things easily enough by "old" and "outdated" methods. At the time I entered first grade, somebody in the Hungarian pedagogical establishment came up with the idea that a child learns easier the connection between letters and sounds if the letter is associated with a gesture as well as with a sound. Now, the Hungarian language, although a very difficult one to learn for an adult, is easy to read as a text, because it is probably 98 percent phonetic. The Hungarian alphabet is written in Roman letters and it consists of 42 "letters": 14 vowels, 21 single consonants, and 7 digraphs standing for single consonant sounds. There are a few cases where a consonant letter stands for an irregular consonant sound as spoken in the vernacular, but otherwise an **a** is an /a/, and a **p** is a /p/ ever. Period.

My problem in the first grade was with the gestures, perhaps because I didn't realize their use was intended to make life easier for me. I suppose, with an adult's hindsight, that the method was based on associating a known image with an unknown graphic symbol. To give an example of how it worked, the pupil had to place the right palm on his stomach when sounding out the letter **a**, because the sound /a/ was supposed to be the one a person with a stomach ache makes. The letter **k**

went with the right hand held vertically over one's head with the fingers spread out to symbolize the crown of a rooster, "*kakas*," in Hungarian. And so on. This may be hard to believe, but it is true. From a perspective of over fifty years, I still remember two things about this "aid" to my learning to read. One, it was degrading to go through all that silly gesturing while I honestly struggled with the task at hand, namely trying to learn and remember what all those printed characters stood for. The second was that now I had to learn two things simultaneously instead of one: to connect letters to sounds, and to connect letters to gestures. Instead of 42 things to learn, now I had 84. Some help it was!

Fortunately, we did this nonsense only for a couple of months or so, by which time we knew the letters quite well and began to sound them out, making spoken words. The class was declared proficient enough in the knowledge of letters and was allowed to read the practice texts in the primer without arm waving.

In college I studied mechanical engineering, and although I did not have the opportunity to get a degree, I worked as a mechanical engineer for close to forty years. During more than half of this time I have worked in the mining industry for a prominent engineering and construction company, designing plants to mine, transport and process various ores, extracting useful products and disposing of the remains with as little harm to the environment as possible. My work ranged from hands-on design of plant facilities to selecting and buying equipment, to leading teams of engineers and designers to build entire plants. My biggest project was the $300 million ore transport and preparation portion of a billion dollar copper mine and refinery in Chile.

During most of my working life I was involved in finding solutions to problems, which is generally what engineers do. We are presented with a task to do something, we determine what the pertinent facts are to start with, investigate them and related subjects, make a synthesis of the findings, analyze the findings and develop solutions which we evaluate and optimize in order to select the most advantageous one. Engineers' training is centered on dealing with facts in an analytical and objective manner, indeed to separate facts from rhetoric and also to view those facts with healthy skepticism. We learn to face the results of our investigative efforts even if they are unexpected or unpleasant or undesirable. Thus, by the time I became interested in the teaching of reading in English, as an engineer, I had developed the habits of seeking out the facts on the one hand, and applying "reality checks" to the results of the analytical process on the other hand.

I need to discuss another pertinent aspect of my background, my exposure to languages. My native language is Hungarian, which is a very phonetic language in its writing. Hungarian, similarly to English, has many imported words, but these words were adopted many hundreds of years ago, and were assimilated long before Hungarian became a written language, so that their presence does not effect the orthography or the grammar at all. When the existing words in the Hungarian vocabulary proved to be inadequate for modern communication, which became evident about 150 to 200 years ago, Hungarians chose to create new Hungarian words rather than importing words from other languages. This practice is not so prevalent in our days, although, interestingly, in a multilingual computer dictionary I ran across accidentally, one of the six listed languages was Hungarian, and it was sometimes amusing for me to see freshly minted Hungarian terms for their English equivalents which I had been familiar with.

Quite early in my life, I took up studying the Esperanto language, because my parents were deeply involved in the Esperanto movement and were quite active in the Esperanto community in Budapest. Esperanto is an artificial language invented in 1887 by a Polish physician, Dr. Ludwik L. Zamenhof. It is the most widely spoken of the artificial languages. It is fully phonetic, it has no inflection, and makes great use of suffixes and prefixes to generate new words out of root words. Its greatest advantages are that it has no exceptions at all to its very simple rules of grammar, and its vocabulary is derived from a handful of European languages, making the words easy to learn for the speakers of Romance languages in particular.

In middle school I studied German, and after the establishment of the communist regime, I studied Russian for eight years, both in high school and in college. I never got very far in Russian mostly because of my dislike for anything the state compelled us to do, but I learned enough to be able to read the Cyrillic alphabet, and become familiar with the Russian grammar. Once a person is over the hurdle of the Cyrillic alphabet, Russian is easy to read, as it is very phonetic. Its grammar, though, is quite complicated, having six cases just for the inflection of nouns, among other things. Also, the consonants tend to come in bunches, typically for Slavic languages, which makes it difficult for non-Slavic people to pronounce the words.

After a number of years of interruption, I was back to learning to speak German again in Austria, where I lived, studied and worked for a little over two years. The German language is a quite phonetic and orderly language. It is inflected, with few exceptions to the rules; however, all of the nouns have an arbitrary gender which determines their inflection, plus the matching of the gender specific article to the case of the noun. Also, similarly to English, the predicates in the sentences can consist of more than one word (Ich werde sitzen = I will sit), but Germans put the second part of the compound predicate to the end of the sentence, no matter how many words come in-between, which requires one to wait until the very end of a sentence to find out what it is all about. I suppose, it keeps the mind sharp.

During my Russian period, I took up the study of English without the slightest prospect of having the opportunity to ever use it. I learned from a book with the optimistic title of "Let Us Learn English Quickly and Easily." I tried to follow the careful descriptions on how to form the various phonemes by manipulating the tongue, lips and the opening of the mouth. I was able to say things like "The chair is on the right and the bookcase is on the left," and I felt confident that, given the opportunity, I would be understood. The opportunity came in March of 1959, when my wife, 3-month old son and I arrived in New York as new immigrants. My first experience was sobering. I walked in a deli somewhere around 40th Street to buy milk for my son. Not seeing milk bottles anywhere (I did not know that milk in America was sold in paper containers), I carefully composed the question "Where can I find milk?" walked up to the checker and asked him. He thought I was speaking in German and responded in German, which was handy from the standpoint of finding the milk, but rather a letdown as far as my confidence in my linguistic prowess was concerned.

Over the years I bought books for learning French and Italian, mostly because I like operas, but I never got very far with them, as many other important things stood in the way. In 1993 I began to work on a mining project in Chile and my assignment involved spending about one year in Santiago, Chile, during the detail design phase of the project. Naturally, learning Spanish was quite advisable, even though the official language of the project was English. I enrolled in a class, bought books and tapes, but similarly to French and Italian, other important things came up and I am being very charitable if I say that my Spanish is quite rudimentary, even after having spent better than six months as a resident of Santiago.

Thus, I can truthfully state that I have been exposed to a number of languages, and even though I cannot speak most of them, I have a fair idea of their orthography, pronunciation and grammar. Enough to be able to make comparisons and draw parallels with English.

The purpose of mentioning these matters is not to imply that my experiences give me a prerogative to pass judgment on matters relating to the subject of this book. The purpose is, rather, to point out that, because of my background, I see things from a different perspective, and am perhaps able to detect relationships that are not so obvious to others with a different kind of background and education.

To give an example, the sounds, vocabulary and syntax of the English language are all natural constructs for a person who grew into speaking it as his native language. For children, and many adults, it is not natural at all to separate a stream of speech sounds carrying meaning into linguistic units such as sentences, words and phonemes. Yet the ability to discern these units, awareness of

their existence and a facility to isolate and manipulate them are prerequisite to learning the effective reading, or decoding, of printed texts. Obtaining these skills is not a natural process; they are all learned skills, and they are learned, at least at the initial stages, by the associative learning process.

Due to the fact that English is my second language, I never had to make the transition from spoken English to written English. Also, I have no personal experience that is related to any of the methods used to teach this transition in school, therefore I have no bias for or against any of them either. I consider this an advantage that contributes to my ability to impartially evaluate and form an opinion of the methods used in teaching reading in the United States.

When I learned English as a non-native language, I had to internalize every word both as a spoken and a written lexical entity. Sometimes the spoken word came first, more often the written one did. When in reading I encountered an unfamiliar word, being lazy by nature, most of the time I tried to get its meaning from the context of the material. Many times, however, I found a crucial word, the meaning of which was impossible to find out from the context, because it was that particular word that gave meaning to the sentence. In such situations there was no way out but to consult the dictionary. When I did so, I took time to study the respelling of the word and pronounced it aloud a few times to try out the sounding of it. In spite of this habit, I retained an accent through all these years; however, I and those around me noticed a marked improvement when I began to study the phonic and linguistic methods of teaching reading, and found out about the logic of the English language in regards to the mapping of groups of graphemes onto groups of phonemes. Perhaps if it had not been for my second-language sensitivity, I would not have noticed the validity of the mapping theorem as much as I did. (This subject will be discussed in greater detail later on.)

When I started to entertain the thought of writing this book, it occurred to me what basis do I have to speak up on a subject that is not within my area of expertise? Well, what is expertise? The dictionary defines it as the skill, knowledge, judgment, etc. of an expert. A little higher it also says that an expert is a person who is very skillful, or highly trained and informed in some special field. It seems to me that the operative part of the definition is "highly . . . informed in some special field." Training by itself does not mean very much, as we all know from experience. I began my study of the subject of reading and the teaching of it at a rather mature mental age, when my analytical habits were well developed. By then I was used to having a critical view of conflicting opinions and had the ability and judgmental facility to evaluate those views and reach conclusions that were acceptable to my sense of logic. Independence and judicious formulation of opinion is perhaps another way of putting it.

Add to this the fact that I am outside of the teaching profession and thus removed from its politics and all the currents and movements and latest popular in-things that exist in all professional environs. In view of this, I felt myself uniquely equipped to investigate and form an opinion about the matter of teaching reading in the English language.

In trying to shed light for my own benefit onto the Great American Embarrassment of functional illiteracy, I did my research by reading books. The subjects included the nature of the reading process, various methods of teaching reading, the process and psychology of learning, communication theory, the development of writing and of alphabetic writing, the history of the English language, the orthography of the English language and its development, linguistics, psycho linguistics, phonemics, methods of teaching reading in other countries, etc. Although I do not claim to be a "credentialed" expert or an authority in the field of reading instruction, I am well enough acquainted with the subject to have the audacity of making a statement of my opinion.

Is the situation as bad as it is claimed to be?

The first question that comes to mind, of course, is: Are the figures that are bandied around about illiteracy in the United States true and reliable?

That November, 1985 Reader's Digest editorial says that some 27 million American adults are functionally illiterate and 45 million more are only marginally literate. Alarmingly, this number increases by 2.3 million each year. I looked up in the almanac the population of the United States in 1985, and interpolating from the 1980 and 1990 census figures, the country had about 238 million inhabitants, and the average annual increase in population was 2.2 million. (This immediately tells me that the 2.3 million annual increase in the number of non-readers is grossly exaggerated.) The median age in 1990 was 32 years. If one assumes, for simplicity's sake, a linear age distribution of the population, the average life span would be 64 years. If we take all persons over 18 years of age as adults, the adult population in 1985 would be about 171 million. According to these calculations, an estimated 16 percent of all adults would be functionally illiterate, and an additional 26 percent would have difficulty with reading.

A look at other sources of information, without going into a broad-range research on the subject, indicates that the above figures, excepting the rate of increase of functional illiterates, are, unfortunately, quite realistic.

Here are a few anecdotal data.

According to Charles C. Walcutt, editor of "Tomorrow's Illiterates: The State of Reading Instruction Today" (1961), "Considerably more than half (probably 75 percent) of our young people do not read as they could, and that at least 35 percent of them are seriously retarded [in reading]."

A brochure for the 1987 "The Governor's Literacy Exhibit" of the Virginia/Washington D.C. Library Association gives the following statistics: "The U. S. Department of Education estimates that 150,000 young people graduate from high school every year without being able to read their diplomas, and that 27 million adults are functionally illiterate today (that is unable to perform the tasks critical to survival in today's society.)"

The 1994 California Learning Assessment System determined that "statewide 3 percent of the tenth-grade students understood only an individual word, phrase or title in a text; and a further 21 percent had only a superficial understanding of the text." It can be safely stated that at least one quarter of the tenth-graders were functionally illiterate.

In the July 14, 1996 issue of the San Francisco Chronicle an article, "Learning how to read isn't a child's play," states "Adult functional illiteracy, a problem for one in five Bay Area residents and roughly 90 million adults nationwide, is defined as the inability to read and comprehend at ninth-grade level or write a moderately complex paragraph."

President Clinton on August 27, 1996 announced a proposed government literacy program which included $2.5 billion to support after-school and summer tutoring for children from kindergarten to third grade. The reason: about 6 million children, or 40 percent of American third-graders, cannot read independently.

In order to get a broader and more reliable picture of the literacy situation, I checked out two recent government sponsored surveys on the subject.

Adult Literacy in America

In 1988 Congress requested the U.S. Department of Education to determine the nature and extent of adult literacy in the United States. The DOE contracted Educational Testing Service to design and conduct the National Adult Literacy Survey to collect and compile accurate and detailed information on the English literacy skills of America's adults. The test was designed, reviewed and approved by various committees, and in the first eight months of 1992 a trained staff of 400 conducted interviews with a total of 26,091 persons. The tests included the completion of tasks for three literacy tests and of interviews relating to the background of the tested individuals. The results were published by the National Center for Education Statistics under the title of "Adult Literacy in America" in 1993.

For reference, literacy is defined in Webster's New World Dictionary, 1988 edition, as "The state or quality of being literate; specifically: a) ability to read and write . . ." The opposite of literacy is illiteracy, meaning, that a person cannot read and write. One would expect that a literacy study mandated by Congress would also determine how many people are *illiterate* in the country. No such thing happened. For the purpose of the survey, literacy was defined as "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential." This definition, it must be noted, is rather loose and open to all sorts of interpretations. In any event, the development committee agreed that a literacy test based on school grade levels would not be useful, nor would it be useful to establish a single cut point on a single scale to distinguish between "literates" and "illiterates." Taking a further step, the survey design committee postulated the existence of three kinds of literacy: Prose Literacy, Document Literacy and Quantitative Literacy, and proceeded to create tests for measuring each. They defined the three kinds of literacy as follows:

- Prose Literacy involves the knowledge and skills needed to understand and use information from texts.
- Document Literacy consists of knowledge and skills required to locate and use information contained in materials that include job applications, payroll forms, transportation schedules, maps, tables and graphs.
- Quantitative Literacy relates to the knowledge and skills required to apply arithmetic operations, either alone or sequentially, using numbers embedded in printed materials.

Proficiency in each literacy was measured on a scale of 1 to 500, with 5 proficiency levels established. The tasks comprising the test were assigned difficulty values within a 500-points range. If a person taking the test satisfactorily completed a task, he received the number of points associated with that particular task to reflect his proficiency level. The score associated with the most difficult task completed represented the proficiency level of the person. Curiously, in the 150-page book on the results of the study, no explanation is given why the levels were established at the selected specific scale points, and how the tasks were assigned difficulty values. I suspect the first was done more or less arbitrarily, the second on some subjective valuation basis.

Since the subject of this book is reading and functional illiteracy, we will concern ourselves only with Prose Literacy. The report of the study describes the five levels of it, which I quote in the following paragraphs. It is a rather unentertaining reading, I am afraid, but I think it is still worth the effort. Besides giving an idea of the levels of reading proficiency, it is a good illustration of the way literacy experts think.

- <u>Prose Level 1.</u> Scale range: 0 to 225; average difficulty value of tasks: 198. Description: Most of the tasks in this level require the reader to read relatively short text to locate a single piece of information which is identical to or synonymous with the information given in the question or directive. If plausible but incorrect information is present in the text, it tends not to be located near the correct information.
- <u>Prose Level 2.</u> Scale range: 226 to 275; average difficulty value of tasks: 259. Description: Some tasks in this level require readers to locate a single piece of information in the text; however, several distractors or plausible but incorrect pieces of information may be present, or low-level inferences may be required. Other tasks require the reader to integrate two or more pieces of information or to compare and contrast easily identifiable information based on a criterion provided in the question or directive.

- Prose Level 3. Scale range: 276 to 325; average difficulty level of tasks: 298. Description: Tasks in this level tend to require to make literal or synonymous matches between the text and information given in the task, or to make matches that require low-level inferences. Other tasks ask readers to integrate information from dense or lengthy text that contains no organizational aids such as headings. Readers may also be asked to generate a response based on information that can be easily identified in the text. Distracting information is present, but is not located near the correct information.
- Prose Level 4. Scale range: 326 to 375; average difficulty level of tasks: 352. Description: These tasks require readers to perform multiple-feature matches and to integrate or synthesize information from complex or lengthy passages. More complex inferences are needed to perform successfully. Conditional information is frequently present in task in this level and must be taken into consideration by the reader.
- Prose Level 5. Scale range: 376 to 500; average difficulty level of task: 423. Description: Some tasks in this level require the reader to search for information in dense text which contains a number of plausible distractors. Others ask readers to make high-level inferences or use specialized background knowledge. Some tasks ask readers to contrast complex information.

The report gives a sample task in each of the five levels to illustrate the requirements of the various levels of proficiency. Nevertheless, even from the above descriptions of the tasks it is evident that the attributes being tested are reading comprehension and the ability of processing and manipulating information, and that the ability to read (i.e. to "decode") printed text was not tested. It must be noted that the attributes tested come under a very broad definition of literacy.

The findings of the 26,091 persons tested were projected to the 191.3 million adult population of the United States. The survey found that 21 percent of the population, or 40 million in the entire country, can do no more than the requirements of Level 1, in other words the most they can do is find a word or two in a simple short paragraph when no similar word that could confuse the reader is present. (Strangely, no mention is made of the number of individuals who were not able to meet even the Level 1 requirements, even though there surely must be a statistically significant number of people in that category, which would be pertinent to publish.) An additional 27 percent, or 52 million people countrywide, could do no more than find a single piece of information in the text and compare it to other information. It is astonishing that nearly half of the adults in America can do no better than that, with most having gone through up to twelve years of attending school.

The study does not attempt to give a clear-cut answer to the paramount question of how many illiterate Americans there are, whether they had gone to school or not. Still, if one works his way through the data, interesting hints can be found. There is a table which gives a breakdown of the "Percentage of Adults Who Reported Getting A Lot of Help from Family Members or Friends With Various Types of Everyday Literacy Tasks." These are people who by their own admittance get help regularly if something needs to be read.

The report states that 9 percent of the total population, i.e. 17.2 million people fall into this "Getting A Lot of Help" category. Of this number 9.2 million are at Level 1, 4.2 million at Level 2, 3.1 million at Level 3, and 0.7 million at Level 4. The meaning of these figures is very hard to understand, keeping in mind that the tests, presumably, were performed by the individuals on their own, therefore while taking the test, they could read the tasks without getting any help at all from others. Since there is no category lower than Level 1, one is inclined to believe that the 9.2 million "Getting A Lot Of Help" could not even begin to perform the tasks of the test, being illiterate. Unfortunately, the study does not say this. It is harder to understand the 4.2 million that is in Level 2. Are they blind? Do the have Parkinson's disease? What is the explanation? Then, how does one

explain the 3.1 million people at Level 3 who can perform moderately complex tasks requiring fair comprehension and other skills, and yet regularly needing help in everyday literary tasks? Of course, the same goes for the 700,000 people getting help while being able to perform at Level 4.

Within its defined parameters, the study did a creditable job in sampling the proficiency of subgroups by gender, education, economic status, ethnic and racial background, age, etc. and reporting the results in a variety of breakdowns and tabulations. Most of these are not surprising for those who follow developments in education, particularly in reading education.

There are many oddities in the findings though. For example, a projected 16.3 million people in the country have done graduate studies or possess a graduate degree. Among this number a full half million performed the Prose Literacy test at Level 1 and 1.6 million at Level 2. One is tempted to ask, what had all those 2.1 million people studied in 8 years of grade school, 4 years of high school and perhaps 6 years of college — a total of 18 years, involving rather high financial costs to society and themselves — if they can do no better than find one piece of pertinent information in a few paragraphs of simple reading text? What do they have advanced degrees in? What do they do with their degree? What additional costs will society pay due to their apparent incompetence? It is also sad to see, that out of the 16.3 million people with a highly advanced level of education only 2 million could perform tasks of Level 5 complexity. Alternatively, one is inclined to ask: Was the test properly designed? Did it measure the right attributes? Can it be relied upon for setting policies or designing programs? Was it worth the effort and the cost?

In summary, there is extensive illiteracy in the United States, and one is inclined to believe that the authors tried to camouflage this shameful fact. This is, of course, very discouraging, as the denial of a problem prevents the beginning of a cure. Equally discouraging is a comment in the report to the effect that "the overwhelming majority of adults who demonstrated low levels of literacy did not perceive that they had a problem with respect to reading or writing in English." Perhaps all they need is to look around themselves to see that there is nothing abnormal about their difficulty with literacy. After all, every other person in the country has the same problem.

NAEP 1994 Reading Report Card

Just to verify the findings of the Adult Literacy Survey, I looked up a report of the National Assessment of Educational Progress. NAEP is an organization that for a quarter of a century has reported to policy-makers, educators, and the general public on the educational achievement of students in the United States.

The 1994 Reading Report Card, available on the Internet, compares the reading abilities of children in the fourth, eighth and twelfth grades in 1992 and 1994, giving statistical information on the children's achievement levels. The findings are based on sampling approximately 26,000 students in each of these grades, from a total of 1,500 public and non-public schools.

For twelfth-graders the basic level of proficiency was defined as follows: "When reading text appropriate to twelfth grade, they should be able to identify and relate aspects of the text to its overall meaning, extend the ideas in the text by making simple inferences, recognize interpretations, make connections among and relate ideas in the text to their personal experiences, and draw conclusions."

Nationwide, 40 percent of the students were not able to do this in 1994, while in 1992 38 percent was below the basic proficiency level. Let us translate this to number of graduates. The total nationwide enrollment in public schools in grades 1 through 12 was 42.7 million. Assuming even distribution among the grades, of the 3.5 million graduating high school students, 1.4 million had no more than minimal literacy skills when they tossed their caps into the air. Not a sterling achievement for twelve years of schooling that cost to the public on the average $65,000 per student.

Closing Observations

It is easy to see from the few pieces of information given above that the situation is, indeed, very bad regarding the literacy of the American public. It is alarming, as it has been for decade after decade. And the situation is not improving. As the executive summary of the NAEP report states, "The most striking finding from the 1994 assessment is that the average reading proficiency of twelfth-grade students declined significantly from 1992 to 1994."

What on earth is going on? Two generations have come into this world since the publication of Dr. Flesch's book and the uproar that followed it. An incredible amount of research took place since then, mountains of money were spent in the hope of remedying the situation, and the latest report indicates that in spite of all the effort, the application of intellectual and financial resources, we are sliding backwards rather than making progress. From year to year, more people rather than less must lead a life of semi-ignorance and economic dispossessment because of something frighteningly wrong in our way of teaching children how to read. But the identification of the problem goes farther back than the appearance in book stores of "Why Johnny Can't Read".

For example, in 1947 Arthur I. Gates, one of the foremost reading experts in the country, in his book, "The Improvement of Reading — A Program of Diagnostic & Remedial Methods," states that "reading is both the most important and most troublesome subject in elementary-school curriculum. It is most troublesome since pupils fail in reading far more frequently than in any other elementary skill." He states that studies show that the percentage of pupils who fail to read at grade level are as follows: Grade 3 — 68%; Grade 4 — 56%; Grade 6 — 33%; Grades 7 and 8 — 25%. He goes on to give and then to discuss, presumably in his order of importance, the causes of this terrible failure of the schools to teach children to read:

1. Reading is a very subtle and obscure activity
2. Mass teaching is responsible for difficulty and failure in reading
3. Reading difficulty conceived as due to organic defects
4. Reading difficulty due to organic conditions which are not really defects
5. Reading difficulty conceived as due to deficient psychological process
6. Constitutional immaturity
7. Educational immaturity; lack of "reading readiness"
8. Reading deficiencies due to unfortunate forms of motivation
9. Reading difficulties due to failures to acquire essential techniques
10. Reading difficulties may be due to ineffectual types of teaching
11. Unfortunate "accidents" in the process of learning [i.e. too many failure experiences]

It would be interesting to discuss all of the listed causes, but it would not be productive at this point. Suffice to say, I am convinced that causes 9 and 10 are the real reason for the dismal results that schools, in general, produce in trying to teach children to read. The cause of the failure is not lack of trying, or lack of effort, or lack of funding. The cause, in my opinion, is a lack of understanding of the process of learning to read in the English language, and of all those subtle and interesting aspects that underlie the process.

In the course of preparing to write this book, I came across many to me unknown facts and theorems, that put together make a big picture with many fine details, the seeing and understanding of which may help those responsible for teaching our children, and teaching our children's teachers, to finally see the light and adapt a sensible and workable way of handing the gift of literacy to each and every child, as it is done in so many countries in the world.

Chapter 2

Communication To Writing

I believe that one of the basic reasons for the confusion in how to teach children and adults to read and write is the lack of understanding of some elementary facts about the way the English language is written. At the risk of being faulted for going back to Adam and Eve to explain how we are related to first cousins, I will start at the very root of the entire matter: at communication.

Modes of communication

Living organisms have an elementary need to communicate by receiving and giving signals. This need is driven by two factors, one is to maintain the species and the other to maintain the existence of the individual. Communication is done in many ways, and many times several modes of communication are used in combination to achieve a goal.

The first and oldest mode of communication is by chemical means. This is understandable, since chemicals can be readily absorbed through the cell membrane of the most primitive organism and receiving vital messages in this manner works without elaborate sense organs. This does not mean, though, that creatures of higher order of development do not make use of this ancient message system though very elaborate organs. To give a few examples of how chemical communication works, consider the following. Ants lay down a trail of pheromones to mark a path or to let the rest of the community know the presence of danger. Female moths signal their readiness to mate by releasing powerful scents into the breeze which bring prospective mates from phenomenal distances. Flowers exude fragrances to invite would be pollinators for a treat of nectar and nutritious pollen. Trees let the world know they are ready to host a feast: they fill the air with the sweet aroma of ripe fruit in order to disperse the seeds of the next generation of trees. Some trees in forests, in an interesting exhibit of altruism, will release chemicals when attacked by pests, prompting other trees of their kin to manufacture repellents against similar attacks.

Chemicals can also work as warnings to others. Big cats scent-mark hunting territories to let uninvited visitors know it's best for them to stay clear. Certain insects give off foul odors to warn that they are unpalatable to would be predators. The examples are literally countless.

Other ways of communication are based on physical phenomena and the variety is mind boggling. Dolphins and whales send out sonic signals not only to discover schools of fish, but also to converse, and to literally see into one another (perhaps to cut through pretensions?). Flowers, in addition to their scents, advertise with colors of the visible and invisible spectrum that they are ready to trade nectar and pollen for the service of being pollinated by bees, bugs, birds and mammals.

And interesting mode of communication has become wider known lately: communication by colors. It was observed that certain cephalopods (squids, cuttlefish and octopuses) and certain fish can change their skin color and the pattern of coloration at will and instantaneously. It was also observed that in addition to serving as excellent camouflage in hiding from predators and lying in wait during hunting, these changes also serve as a means of communication in mating rituals, territorial disputes and who knows what else.

Then come the more customary ways of communication, namely the gestures and sounds.

When considering gestures as a way of communication, we all have seen countless examples on nature programs in the television. The arm waving of male crabs to attract the attention of a comely female, the push-ups of lizards for the same purpose, the for us comical antics of certain

birds to make the females of their species misty eyed, are all vital communication. Another example for communication with a different purpose is the elaborate dance the honey bee, giving accurate description of object, direction and distance to a source of wherewithal.

Gestures play an extremely important role in communication. The intricate, almost ritualistic movements and postures of wolves, wild dogs, monkeys and countless other creatures living in hierarchical groups provide enough material to fill volumes upon volumes of scientific works. Even with humans, a gesture or a facial expression sometimes tells more than any number of utterances.

The last means of communication to emerge in the animal world is that by sounds. In the evolutionary ladder vocalization appeared first among certain insects. We are all familiar with the frenetic efforts of crickets and cicadas, and the strange, squeaky sound produced by certain beetles. Among the vertebrates, certain fishes were the first to make grunts and other simple sounds. By the time higher animal life was ready to expand to dry land, that is, with the appearance of amphibians, vocalization took a grand leap forward as illustrated by the stentorian abilities of certain frogs. One only needs to visit a pond at dusk in the spring time to become aware of the quantum improvement in both volume and artistry of animal vocalization.

Reptiles in general are a quiet bunch, but birds and mammals make great use of vocal communication. In observing them one is often amazed by the level of sophistication, even among animals. Years ago we had a temporary family member, a pet mynah. It could talk, not only repeating sounds it heard from us, but expressing thoughts, needs, observations. The word "bath," uttered in a hoarse, lisping voice, meant anything connected with water. If the bird needed fresh drinking water, it would clamor, "Bath, bath!" If it rained outside, the mynah looked through the window and commented, "Bath." On one occasion it was sitting on its perch keeping impish, yellow eyes on the TV screen, watching a nature show about the sea shore with breakers washing up the sand. At one point it casually remarked, "Bath."

Speech as a means of communication

The apex of vocal communication was reached by a small group of mammals, mostly by homo sapiens, and, as we lately began to suspect and discover, by dolphins and whales. Since the presumably simple vocalization of our early forebears, the wanderers, gatherers and cave dwellers, our ability to communicate by utterances has reached remarkable levels. Literally thousands of vocalization systems we call languages developed to give individuals the means to express things vital to them and their communities. Some of the time, anyway. Sounds comprise words and phrases and sentences that can describe objective and subjective matters, tangible subjects and feelings, beliefs, theories, scientific and religious dissertations, anything and everything under the sun and more. They can educate and entertain in words spoken and sung.

There are two tragic flaws to this marvel of communication, the uttered human language, and they are the same as the ones that hamper the other one, the gestures. One is that as soon as the sounds have been uttered and the gestures completed, they are gone, unretrievable forever. The other is the relatively short effective range that they carry.

Until just recently, when the modern inventions of telephone, radio, audio and video recording made it possible to relay and preserve auditory and visual communication, these two limitations created very serious problems that had far reaching effects on the development and well being of communities. The problem could be summed up thus: How to preserve and pass on the knowledge and accumulated wisdom of generations past and present to generations future?

The simplest way to preserve uttered communications was, of course, to resort to mnemonic methods, as the people did in Polynesian cultures. They simply memorized their history, genealogy, religious and navigational knowledge. Sons and daughters of the appropriate social classes attended schools in order to perpetuate their culture. It is hypothesized that the reason for this may

have been the lack of materials what withstood the ravages of a climate which provided a pleasant environment to live in but ruined wood, leather and textiles made of fibers. This general lack of a medium to bear records very likely made it impractical to use markings.

Long before the development of Polynesian cultures, other peoples in other climates, from the early dawn of civilization, did begin to use markings to record significant facts and events. They made drawings and symbols of astronomical features on cave walls and cliffs protected from weather. They used charcoal from their fires, colored soil brought there for the purpose, or sharp stones to make etchings. In the widest sense, these markings were the germs of that unique human activity: writing.

The development of writing

But writing came about for another, more mundane and practical reason as well. With the development of crop growing and animal husbandry, and the increased stratification of the communal structure — namely the emergence of those paying tributes and those receiving them, and those owning more than they needed for consumption and those who did not — the need for record keeping emerged. How many bushels of yam did a neighbor borrow? How many sheep did old Limpy take to the hills? Pebbles in bags, knots on strings, grooves on sticks, beads on threads could be and were used for keeping records. In the broad sense, this also was writing, which can be defined as a system consisting of conventionally accepted markings used in human communication.

Of course, bags of pebbles and grooves on a stick do not make expressive writing possible, and humans, being vain as we are, want posterity to remember our valor and wisdom. Also, some of us want us to keep in mind the needs and wishes of supernatural powers. If we happen to be leaders of the community, we want the commands we lay down obeyed to small details. To do all these, the fleeting utterances somehow must be preserved.

The first attempts at this kind of records were described above when we referred to pictures and pictographs — stylized drawings — drawn on rocks in caves and on cliffs. These were handy expressions and records, but they had one disadvantage, namely that they were immovable and the reader had to go to them. This rendered them impractical for everyday use, although it may have lent them an aura of mystique. But human ingenuity is always at work. Various media were developed that made markings portable and opened the way to further development.

The first step in the direction of writing, the use of pictures to record some event or observation, cannot be called writing, since they depicted the objects themselves. Claude Monet did not go to any length in describing the mood, smell and feel of the lily pond at Giverny, but a look at his paintings will amply reflect them and more. We can safely state though, that pictures, no matter their nature and artistry, do not meet the criteria of writing. People with lesser talents need other tools to get their ideas across.

Writing, the use of symbols rather than pictorial renderings to communicate thoughts, appeared in two parts of the world, independently from each other. One was in the warm regions of the Americas, and the other in Asia Minor.

Although the American system of writing developed chronologically later than that in Asia Minor, perhaps we should discuss it first for the simple reason that they are not related to our system of writing and got bogged down at the hieroglyph level, or failed to reach even that.

The Olmec people about 3,500 years ago developed a significant culture in the Americas with organized communities, religion, agriculture, industry and trade. They had a system of pictographic writing, used mostly for account keeping.

The Maya people of what is today the Yucatan peninsula, developed a hieroglyphic system of writing some 2,500 to 2,000 years ago. It was used to make carvings on stelae (standing slabs of

stone) and decorative motives on buildings and churches. At those latter locations they were used to record historical events and matters relating to deities and astronomy.

Maya hieroglyphs were often color paintings on stucco, but they were also written on paper-like folded sheets made of the fibers of the maguey plant and bound in books. In spite of the determination of the Spanish conquistadors and the Catholic Church to destroy every one of these pagan abominations, four collections of Maya writings, now called codices, survive in museums in Europe. Their subjects cover weather, agriculture, diseases, hunting and astronomy. They Maya were very definitely a society with a well developed system of writing.

Interestingly, in the Inca Empire along the Pacific coast of the present Peru, no system of writing existed. Instead, they used *quipu* as their means of recording. Quipus are series of strings of various lengths, patterns and colors, tied to a stem-like string. Each of the branch strings contains one or more knots of different design, and sometimes the strings branch off. It is believed that with quipus the Incas not only kept records of commercial transactions, but also recorded historical events and other matters, presumably of religious and astronomical nature.

The Aztecs, whose empire had its beginnings at a much later time, also had a writing system which was quite dissimilar to the Maya's, even though the two empires were geographically rather close. The Aztec writing consisted of pictograms, but their writing system was less developed and more prone to inaccurate interpretation. Given time, these systems might have developed further, but following the first voyage of Christopher Columbus to the New World, events overtook all possibilities of such evolutional process.

The origin of all other systems of writing and, in fact, of all writing systems in use in our days, is in Mesopotamia, an area in modern Iraq and eastern Syria between the Tigris and Euphrates rivers. The ancient people which populated that region were the Sumers.

Perhaps a few words are in order here about various terms that are used in connection with writing. Pictograms are symbolic drawings of objects or ideas and are the most primitive means of written communication, but they are used even today. Many road signs, markings for rest rooms, handicapped parking, symbols for sports events at the Olympic Games — these are all pictograms. The word hieroglyph is similar in meaning to pictogram as they stand for ideas and objects. Hieroglyphs were used by the ancient Egyptian priests in religious and historic writings ("hieroglyphic" literally means "priest-writing"). Logograms are also symbols but they represent entire words. Chinese writing consists of logograms, Japanese writing contains numerous logograms in addition to symbols that represent spoken syllables. Logograms have nothing to do with spoken language — they go directly from a graphic symbol to an idea, although a spoken language also has a word for the same idea. The best examples of logograms we use are the Arabic numerals. Everybody knows what 2 means, even though an American says "two," a Russian says "dva," and a German says "zwei." Similarly, we know the meaning of such logograms as &, %, $, ¢, #, etc.

The first artifacts bearing hieroglyphic writing were found in Egypt and date to about seven thousand years ago, but writing, according to I. J. Gelb, goes back farther than that, to what is now called proto-Sumerian pictographic writing. Proto-Sumerian pictographic writing was not unique by any means. Besides the above mentioned Central American cultures, others, such as Scandinavian people and North-American native nations also used pictographic writing. Nevertheless, as it happens, our system of writing developed from the proto-Sumerian, which in time split into three branches. One developed into the Sumer cuneiform writing, which is now extinct. Another became the proto-Elamite pictorgaphic writing, which eventually developed into the Chinese logographic and Japanese syllabaric/logographic writing systems. The third branch took root in Egypt to become hieroglyphic writing, which over the span of nearly seven thousand years evolved into, along with many others, our own much maligned English alphabetic writing system.

As Oscar Ogg relates it in "The 26 Letters," at first the Egyptians used "thing-pictures," which depicted objects. The first known Egyptian royal tomb with hieroglyphic writing is dated from 4,777 B.C. From the thing-pictures developed the idea-pictures, or ideograms, graphic symbols representing an object or idea without expressing the sounds that form its name. The word "ideogram" also means a symbol representing an idea rather than an object. Ideograms have nothing to do with the spoken sounds of the idea they stand for, the same as logograms haven't. The fact that neither ideograms nor logograms have anything to do with spoken words is illustrated by the fact that Chinese writing can be read and understood by people speaking totally different languages. In Egypt, however, these ideograms evolved into word-sound pictures, or phonograms. For example, a picture of the sun not only represented the heavenly body, but — transliterated to the English language for ease of illustration — it could also stand for the spoken word "son." Perhaps the picture of a sailing ship could stand to advertise that something was for "sale," whereas the beak of a bird (bill) could signify that the written notice was a demand for payment, or a "bill." This use of pictograms as phonograms was a tremendously important development, because a phonogram is a symbol that represents a spoken word, syllable or sound, as do the symbols in modern shorthand, for example. Its development later gave rise to syllable-sound pictures and then to letter-sound pictures.

Interestingly, more than one writing system was in simultaneous use in ancient Egypt, although one of them, their phonogram based "alphabet" of 23 symbols just by itself could have served the same purpose as all the others. The oldest writing system consisted of hieroglyphs, at first chiseled into rock. The use of the chisel as a writing instrument set certain limitations to the shape of the pictures. They were stiff and rather graceless. The invention of the papyrus, or paper, made from the boiled pith of the stem of paper reed, a common plant that grows along rivers in Egypt, and the use of reed pen and ink for writing resulted in the modification of the form of the hieroglyphs into "hieratic" writing, which is an abridged form of cursive hieroglyphic writing and was used exclusively by Egyptian priests. In addition to the hieroglyphic and hieratic writing, the Egyptians developed a third writing form, which we call the "demotic" writing, the phonogram based system mentioned above. The present name for this writing system comes from the Greek word for people, "demos." Text in demotic writing appears on the famous Rosetta stone. It is the second of three texts, sandwiched between the top hieroglyphic writing and the Greek translation at the bottom. The demotic writing system was used by the common people for trade and commerce, as opposed to the hieroglyphic and hieratic writings, which were used by priests for religious purposes only.

Writing, thus, became an important tool of mankind well over five thousand years ago. Just think about the advantages it gave people. Besides being able to record with their cuneiform writing all sorts of things which had to be memorized before, the Sumers figured out an easy and cheap way of making the records portable. All they needed was a stick of wood with one end shaped to look like a slender wedge, plus a wet clay tablet upon which to make impressions with the marker. Make a series of markings, let the tablet dry in the sun for two hours, and you have a handy, portable, indisputable record of what was said or agreed to. It was an astounding invention.

The Egyptians, not to be left behind, invented papyrus not much later, making written records even more convenient to handle and store.

It took but a few hundred years before the demotic writing began its march across the land and sea, and undergo several metamorphoses in the course of evolution into our own writing system.

The emergence of the alphabetic writing

The present day Lebanon is the location of ancient Phoenicia, a "country" consisting of several city-states. It first began to be settled about 4,500 years ago. In 1800 B.C. the Egyptians conquered

Phoenicia and held it occupied for some 400 years. During this time the Phoenicians, who were vigorous traders and clever craftsmen by then, took over from the Egyptians the sound-symbol element of demotic writing and adopted it for writing their own spoken language. But instead of using the whole word that the symbol stood for, they used only the initial sound of the word the symbol represented. After all, the Egyptian word "sun" may have had no meaning at all in Phoenician, but the symbol for the word "sun" represented the sound /s/ for Phoenicians, and was used for it. This kind of writing, sort of alphabetic now since letters represented sounds only and not meaningful words, consisted of symbols standing for consonants only. This was not much of a problem. As it happens, Sumerian, Egyptian and Phoenician are all languages that belong in the Semitic family of languages. In Semitic languages, words are typically based on a series of three consonants. This series, called the root, carries the basic meaning. Superimposed on the root is a pattern of vowels (or vowels and consonants) that designates the variations in the basic meaning or that serves as an inflection (such as for verb tense and number). For this reason, the omission of vowels in written text did not cause much of a problem, and they could be added easily enough by the reader.

The Phoenicians were a very clever and diligent people. They developed whole industries, such as metal working, textile making, glass making (having invented it) and dye making. After becoming independent of Egypt, and perhaps even during the period of being Egypt's subjects, Phoenicians sailed the entire Mediterranean and established colonies as far as in Africa and the present day Spain. Quite naturally, they took their alphabet with them, spreading it wherever they went.

One of the "nations" to take over the Phoenician alphabet and modify it to their needs were the Greeks. We must not visualize the Greeks of those days as a unified nation with a central government and administrative organization in our modern sense of a nation. They were city-states speaking a generally common language and having very similar cultural roots and religious beliefs, but quite independent in their conduct of the business of state. The various Greek city states took over the art of writing from the Phoenicians, but they had a problem. The ancient Greek language belongs in an entirely different family of languages, the Indo-European family. Indo-European languages have quite different characteristics. Vowels in these languages play much more important roles, as they are organic parts of the roots of words. When using the adopted Phoenician alphabet, problems arose for the Greeks. For example, if the symbol for sun and pipe were written together, meaning now the letters **s** and **p**, they could mean "soup" "soap," "sap," or even "sip." And it was cumbersome to guess from the context of the written material the intended meaning of the word. Well, the resourceful Greeks solved the problem by taking certain letters that stood for consonant sounds that did not exist in their language, and assigned them to vowels that did. Thus, an important contribution of the Greeks to human culture was the invention of the vowel letters, with which they could write words exactly as they were spoken. No more guessing, no more uncertainties.

The Greek alphabetic writing was the first full alphabetic writing in the world. An additional advantage of the Greek alphabet was that its letters were simpler in form than the Phoenician letters. The Greek writing, however, was very indefinite about the direction of writing, in fact, it changed from city-state to city-state. In some texts the letters had to be read from right to left, in others from left to right, still in others the direction alternated from line to line and reading was curving like a snake. Another strange aspect of the Greek writing was, as was with other writings, that words were not separated, but rather written continuously and sentences were without any punctuation marks. Itwasalmostlikewritinginawaytodeliberatelyperlplexthereader I will be merciful and forego illustrating writing the same sentence to be read from right to left.

The Etruscan empire, Etruria, was located on the Apennine peninsula, north of Rome. Etruria began to rise about 3,000 years ago, and was the dominant military power in the area of present day central Italy. Etruscans took over the Greek alphabet for their own use, which was then taken over from them by the Romans, who for a time lived under Etruscan rule. The Romans began to use the

Greek alphabet a mere hundred years after it was brought to Greece, and about three hundred years before its left to right version was officially adopted by Athens, and thus became the generally used convention of writing in Greece.

The Romans changed the alphabet to their own taste by replacing many of the sharp corners and angles of the Greek letters with gradual curves. They also made the lines of the letters of varying thickness and invented the serifs, the little decorative finishes at the ends of the lines. Whereas the Greek letter looked something like E, the Roman letter looked **E**. Also, the Romans used the practice of consistently writing from left to right from the very first. They added another very important refinement, namely the separation of the words first with a dot, then with a space between words. Interestingly, the Roman or Latin alphabet consisted of capital letters only.

The Greek alphabetic writing represented a tremendous break-through. Imagine! By learning just two dozen or so symbols, one for each sound of the spoken language, and by a little practice, one could write down and read anything that could be expressed by spoken language. No more guessing at vowel sounds, no more need for rote memorization of hundreds upon hundreds of logographic symbols. A piece of cake, as we would say now. No wonder the Romans were so eager to take over and modify to their convenience this marvelous invention and, when their turn came a few hundred years later, to carry it to distant places. And carry they did it to the far reaches of Europe, even to those primitive folks across what is now called the English Channel.

By the fifth century the Latin alphabet spread all over Europe. The Roman Catholic Church became the core of literate activities inasmuch as scriptures and books were copied by hand in monasteries. The early manuscripts generally had ornate letters beginning the paragraphs and sentences in the text, while the body of the text was written in simplified letters. With time these letters developed into what is now called lower case letters, because they were simpler and faster to write, generally with less movements of the pen. By the time Johann Gutenberg invented practical printing with movable letters in 1454, the use of Latin capitals and small letters was quite general.

The art of printing spread like a grass fire. Within a few short years it was all over Europe. Printing shops sprung up in major cities, books became a commodity rather than rare and treasured artifacts that only churches and a few wealthy individuals could afford to own. By trade convention, printers kept the capitals letters in the upper one of two cases containing letters, while the lower part of the case contained the letters used in the body of the text. Hence the terms "upper and lower case" letters.

But we are not at the end of our story as yet.

Writing in the British Isles

Just about the time the Greeks were taking over the letter symbols from the Phoenicians, and the Romans were still a group of simple shepherds, western Europe was populated by a people we now call Celts and they were just beginning to settle the British Isles. They were called Keltoi by the Greeks. To the Romans, the Continental Celts were known as Gauls; those in Britain were called Britanni. In the 4th century B.C. the Celts invaded the Greco-Roman world. They plundered Rome in 390 B.C., and penetrated Asia Minor. They were the conquerors, rather invincible, they helped themselves to the worldly goods of the subjugated peoples, and they picked up along the way such handy inventions, too, as writing, adapting the alphabet to their own language. The wheel of fortune, however, turns inevitably. Two hundred years after the barbarians' march of victory across the lands of civilization and culture, the Transalpine Gauls were subdued by Julius Caesar, and most of Britain came under Roman rule within another hundred years.

When the Romans arrived in Britain, alphabetic writing was known there. The Celts used runes, characters in a now extinct alphabet that is believed to have been derived from the northern

Etruscan alphabet. Runic inscriptions have been found all over Western Europe, on stone monuments and on such objects as metal spear points and amulets. The greatest concentrations of such finds are in England and Scandinavia. The Celtic version of the runic alphabet consisted of 33 characters. With the Roman invasion and the later arrival of Christianity, the runic writing was replaced by the Roman alphabet. By the time the Germanic tribes of Jutes, Saxons and Angles invaded the islands in the fifth century, the Celts were all Christianized and wrote in Roman letters. Those few of them who were literate, that is.

Fast forward a thousand years. The Germanic tribes, the Celts, and various other invaders in the course of several centuries formed a blend, called the English people, who are now civilized, extremely conscious of their rights as subjects of the crown. They are rather individualistic, and wouldn't dream of telling the next man how to conduct his business, let alone how to write. No, that would be rude. If the man did not like the "blue sky," he could have the "blew skye" or the "blue skie," whichever suited him. And the same went, a little later, for those renegade former subjects across the Atlantic Ocean, who established a strange anarchistic form of government, called republic.

As we will see later, the vocabulary of the English language underwent periods of extensive changes and explosive growth, generally as the results of various invasions by aliens. The good old Anglo-Saxon words had to share usage with words the invaders brought with them, words that the local populace was compelled to learn and adopt if they wanted to get along in life. The situation became bad enough so that in 1604 a gentleman by the name Robert Cawdrey compiled a book containing about 2,500 hard words and their explanations in more understandable Anglo-Saxon terms. The book was "conteyning and teaching the true writing, and understanding of hard usuall English wordes, borrowed from the Hebrew, Greeke, Latine, or French with the interpretation thereof by plaine English words, gathered for the benefit and helpe of Ladies, Gentle-Women, or any other unskilfull persons whereby they may the more easilie and better understand hard English wordes, which they shall heare or read in Scriptures, Sermons, or elsewhere, and also be made able to use the same aptly themselves."

This was one of the first dictionaries of the English language, soon to be followed by numerous others. The beneficial result of these works, besides giving explanation on the meaning of all of these imported words, was that the spellings they gave for the words, little by little came to lay the foundation of the convention of spelling them in a consistent way.

The first definitive dictionary of the English language was compiled, on commission by a group of booksellers, by Samuel Johnson. It took eight years of work to complete this major project. In 1755 the Dictionary of the English Language was published. This remarkable work contains about 40,000 entries elucidated by vivid, idiosyncratic, still-quoted definitions and by an extraordinary range of illustrative examples. It was probably the first real attempt at standardizing English spelling.

In the New World it took a tenacious man like Noah Webster to put an end to this nonsense of spelling words any which way one wanted. Webster studied law and taught school. In 1783 he published a spelling book, known later as *Webster's Elementary Spelling Book* or *The Blue-Backed Speller.* He lived for a while in Amherst, Mass., where he helped to found Amherst College. In 1825, having devoted more than 20 years to the study of the English language and having traveled in both England and France, he completed his monumental *American Dictionary of the English Language* (1828). It contained 12,000 more words and about 40,000 more definitions than any earlier dictionary of the English language. Thanks to him and others who followed in his footsteps, now we have an accepted standard way to spell each word spoken in our language.

Well, we have reached the end of our story telling.

To summarize the facts, communication is a vitally important part of any form of life, both from the standpoint of maintaining life for the individual and of the continuation of the species.

There are many modes of communication in the plant and animal kingdoms. Communication by auditory means is quite common among animals of the higher orders of evolutionary development. Most likely, the most highly developed auditory communication is used by humans. The principal means of human communication is the spoken language. Over the ages mankind developed various systems of graphic signs to mark down spoken language. These systems are called writing systems.

So far, so good. We have arrived in our summary to the unique human achievement of writing.

One of the foremost American experts on the subject of reading, William S. Gray, made a study for the UNESCO on the subject of reading and writing and the teaching of them, the results of which were published in 1969 in a book, *The Teaching of Reading and Writing.* In this work Gray states that from the standpoint of writing, the languages of the world can be classified into three groups:

1. Those using word-concept characters, commonly called ideographs or ideograms [more properly called logographs or logograms]. Examples are the various languages spoken in China. Each character used in such writing represents an idea or concept, more strictly speaking, a morpheme, which is a meaningful linguistic unit rather than a sound (morphemes will be discussed in more detail in a later chapter).
2. Languages using syllable-sound characters, often called syllabaries, as in Cherokee language or Japanese. Each character used represents the sound of a syllable, which may consist of a single phoneme or a group of phonemes.
3. Languages using letter-sound characters, namely all those using alphabetic writing. Each letter or group of letters in these writing systems represents the sound of one, or sometimes more, phonemes.

Gray reports that in languages of alphabetic writing, the length of the alphabet varies from 12 in some Polynesian languages to nearly 50 (46 letters in Thai). The advantage of alphabetic writing is that by learning a relatively few symbols, the entire literature is open to the reader. He continues saying that some languages are phonetic, i.e. graphemes correspond to phonemes, like Spanish, Swedish, Korean, Russian. Others, like English and French, do not exhibit this general phonetic characteristic. Most alphabetic languages leave a space between words; however, some, like Thai, run the words together. In such languages reading has unusual characteristics.

We may cap this off by re-stating that in the English language we use the Latin alphabet to render our spoken language in graphic form, and our system of writing is alphabetic. The nature of all alphabetic writing systems is such that graphic symbols stand for sounds of the spoken language, and all a person needs to do to reconstitute written text into spoken language is to read out the sounds in sequence as indicated by the written symbols.

Some people will protest that this may be true for languages with a phonetic writing system and, unfortunately for us, English speakers, the English language is definitely not a phonetic language. Well, strictly speaking, there is no phonetic language in existence. To be pedantic, phonetic means that for each and every spoken sound there is one and only one written symbol, which is pronounced exactly the same every time. There is an alphabet which achieves exactly that, the International Phonetic Alphabet, also known by its abbreviation, IPA, which is used by linguists specializing in phonetics.

In languages that I am familiar with, which are generally considered to be phonetic, the phonetic characteristics are very limited and conditional. First of all, there are not only letters in their wiring systems, but also phonograms, such as the German “sch,” “ch” and “eu,” or the Spanish “ch” and “qu,” or the Hungarian “sz,” “cs,” and “ly,” just to mention a few. These are letter combinations that stand for one sound, therefore they are exceptions to the one symbol — one sound princi-

ple. Secondly, in any living language there are many regional dialects which can result in such drastically different pronunciation that one is sometimes hard put to understand what is being said by a person from a different geographic location. Yet, a literate user of each dialect can read a text or write down a spoken sentence without any difficulty, and without giving a second thought that a certain letter is uttered using one sound by him, and quite a different sound by someone living in another part of the country. In so-called phonetic languages the only truly phonetic dialect is the one that had been accepted by an unspoken convention over the years as the dominant, or standard pronunciation.

As far as English goes, no matter what we may think, it is a mostly phonetic language, for about 87 percent of the spoken syllables in the language are phonetic in the sense that they are uttered consistently by the use of the same sounds, depending on the dialect in use. Unfortunately, the conventions governing English language writing are devilishly complex and confusing. Still, the English language uses alphabetic writing and no matter how we look at it, it is simpler to become knowledgeable through systematic practice of the spelling conventions (close to two hundred of them), than to have to learn the looks of thousands upon thousands of written word symbols consisting of various letters of the alphabet as if they were logograms. It is best not to go the Chinese and Maya way. It is wise and practical to make good use of what the ingenious Greeks invented for the benefit of their own and the major part of humanity, the blessings of the alphabetic writing.

Chapter 3

Language, Learning, Comprehension

Since writing and reading has to do with language, it might be helpful to touch on the subject, and perhaps discuss such related topics as learning and comprehension.

What is language

Language can be defined as verbal expression of thoughts.

Spoken language, or speech, is a stream of sounds produced by forcing air out of the lungs to make the vocal chords in the throat vibrate at various intensities and pitches — or not to vibrate them at all—and then modulating the generated sound or the soundless air stream by shaping the lips, tongue, mouth cavity and using the soft palate in the mouth or the nasal passage to produce a wide variety of sounds. Humans are well equipped to make and perceive sounds. They also have a well developed ability to understand human speech which function is believed to involve the specialization of a part of the left hemisphere of the brain, called Broca's area.

There is a great variety of sounds that comprise human speech. Not all of them are used in all of the languages, but all sounds used in all languages are such that all human beings can produce them, unless they have some physiological or neurological impediment. The fact that adults, when learning a second language, often are unable to produce the right sounds and therefore speak with an accent all their life does not mean that they have some defect that prevents them from speaking with the proper pronunciation. It only means that they started learning the new language at an age by which they had developed inhibitions that prevent them from freely imitating sounds they hear in their environment. By conscious observation, experimentation and practice, people can speak second languages as if they were their first language.

Speech by itself is totally meaningless. Strictly speaking it is nothing but a series of sounds. Anybody who has heard people speak in a foreign language knows this. We hear strange, unfamiliar sounds flowing endlessly from people's lips, we see others listen, react and respond, and we sometimes wonder how is it possible to make any sense at all of all that gobbledygook. We also have heard talented comics imitate people speaking various languages that sound like the real language and yet is totally meaningless for those who do speak those languages.

What is the explanation?

Although language is verbal expression of thoughts, it is at the same time a means of communication among human beings that is characterized by the use of arbitrary acoustic symbols with conventionally accepted meanings.

Language can be studied from many aspects. Among those are its use, its structure, its evolution over time, or the relationship of one language to other languages. Each of these areas is quite complex and many scholars specialize in relatively narrow segments of the many sciences dealing with the subject of languages.

Those who choose the investigation of the use of languages as their subject of interest deal with literature, communications, sociology, psychology, among others. For each of these specialists, language means something different. A psychologist is interested in finding out what people think when they say something, for what people say is often quite different from what they mean to say; also, sometimes their communication gives hints at things they want to keep for themselves. A literary specialist sees language as words arranged to produce a logical or harmonious effect in a liter-

ary work through which an author wishes to impart to the rest of mankind something that is of importance to him. Content analysis and criticism of literature are part of this type of language-related work. Lexicographers study language from the standpoint of vocabulary, including the meanings, origins, and history of words. Although all of these areas of the language sciences are fascinating in themselves, most are only of peripheral interest to our subject and therefore can be left alone. Others will be discussed, as needed, later.

Of great interest to us is the work of structural linguists who examine spoken language with the purpose of shedding light on how can a stream of sounds convey messages which are sometimes the expressions of very complex and rather abstract thoughts. They have found that all languages have a hierarchical structure of three levels: sounds, sound combinations which we loosely call words, and word combinations which are generally known as sentences. Sentences are commonly regarded as the smallest units of expressive speech, each sentence representing a thought.

The sounds of the speech are studied by phoneticians, and their science is called phonetics. Individual sounds comprising speech are called phonemes. In the "standard American" speech there are 45 phonemes, of which five are short vowels, 14 long vowels and 26 consonants. Life is not quite so simple, though, that this statement can be made with absolute exactitude. Phoneticians point out that even though the listener recognizes certain sounds as one phoneme, often we hear quite different sounds, but our brain in processing the acoustical information makes the adjustment for the anomalies and processes these factually different sounds as if they were the same when it comes to determining the meaning being conveyed by the stream of sounds. (This ability of the brain is very important when it comes to the process of learning to read in English. In the act of decoding from written to spoken words, as done by the code-emphasis adherents, the beginning reader often approximates only the correct pronunciation of the written word, but the brain quite easily "recognizes" the word, even if somewhat mispronounced, for what it is.) To give an example for how we perceive different sounds as one phoneme, consider the sound /t/ in the following words: "time," "stop," "butter," "foot." Although we think we hear the same sound, graphic printouts of the sound waves of these sounds show that they are acoustically drastically different. Sounds that are physically different and we still recognize them as identical, are called allophones. The variation within groups of allophones can be quite great, particularly if we consider pronunciations in the various dialects of the English language.

Combinations of sounds, or phonemes, make up the smallest meaningful units of speech, the morphemes. There are two kinds of morphemes in the English language, free morphemes, which are root words, and bound morphemes, which are generally affixes. A word can consist of one or more morphemes. To give a couple of examples, the word "unreadable" consists of three morphemes, "un-" "read" and "-able." The first one is a prefix, which is a bound morpheme, the middle one is a root word, therefore a free morpheme, and the last is a suffix, also a bound morpheme. The word "blackboard" consists of two morphemes, both free, namely "black" and "board."

It is interesting to comment that phonemic awareness is of great importance in languages that use alphabetic writing systems, as the graphic symbols of writing are associated with the phonemes of the spoken language. In languages that use other writing systems this association does not exist, therefore the existence of phonemes is of little importance. Languages of China use logograms in their writing system, where each graphic symbol stands for a spoken word. In a book discussing phonetics, I read an anecdotal comment about an international scientific conference, where Chinese linguists at first had a problem with the concept of morphemes consisting of phonemes. For them a spoken word was a spoken word, which could not sensibly be divided into smaller parts. Nor could they see any need to do so.

The third level of language structure is that of groups of words. This is the area of linguistics which deals with the truly meaningful function of human speech. It studies the sentences, the ar-

rangement of and relationship among words, and among groups of words, called phrases and clauses, that make up sentences. This branch of linguistics is called the study of syntax.

Kenneth S. Goodman in his "Language & Literacy" postulates that "The basic units of speech are phonemes, but they have no existence outside of morphemes, the molecules of the language. Morphemes are the minimum units of language that can carry meaning, but they have no existence outside of syntactical structures. Syntactical structures such as sentences, have reality only in the stream of language." This view can be accepted as realistic, after all, why would language be used, unless for the communication of something with some degree of importance from the point of view of the communicator. For effective communication, a line of thoughts need to be conveyed. Most often this necessitates several sentences to express something. Still, the smallest practical building blocks of communication are sentences.

As far as our discussions go, this part of linguistics is the most pertinent one to our subject, since the two different philosophies of teaching reading — namely meaning-emphasis and code-emphasis based teaching — have their roots in the question of what is of primary importance in reading, the deriving of meaning directly from the printed text or the decoding of printed text to produce spoken language. In order to consider which of the two approaches have greater validity and merit, one needs to be well acquainted with the basics of how meaning is contained in and conveyed by language.

The three structures of verbal communication

Frank Smith in his 1971 book, "Understanding Reading," agrees with the psycholinguists' model of communication, namely that the act of communication starts out with a so-called *deep structure*, which is the thought or idea that a person wishes to communicate. This deep structure is translated by the brain into an *underlying structure*, which is the language — words in a semantic structure — that contains the best approximation of the thought as a function of the communicator's knowledge of the language. This underlying structure is then transposed into a *surface structure*, which can be spoken language or writing. Writing, in turn, may be a reflection of the spoken language as in alphabetic and syllabic writing systems, or it may be the underlying structure directly expressed in logograms, as in the Chinese writing system.

To give an example of this process, let us consider this situation. A woman sits by a table, eating stew, having bread with it to soak up the juice. She just ate the last piece of her bread and needs some more. The basket with slices of bread if too far for her to reach, but is close enough to a man sitting between her and the basket. She wishes the man to take a slice and hand it to her. This idea, namely making the man execute a series of actions which ends in her getting a slice of bread is the *deep structure* of her communication. At this point it is an abstract thought which envisions the man taking hold of a piece of bread and handing it to her. Her brain, knowing the language, puts this thought into words, establishing the sentence she intends to communicate, creating the *underlying structure*. Then she opens her mouth and utters the sentence, with the spoken words being the *surface structure* of her communication: "Adj egy darab kenyeret." Wait a minute! What did she say? Well, I did not mention that she is a Hungarian, as is her companion, so her utterance makes perfect sense and the man hands her the bread. If she were a German, she would say, "Geb' mir ein Stück Brot." If she spoke English, she would say, "Give me a piece of bread." However, depending on where she lives, namely which part of Hungary, or Germany, or America, her spoken words could sound quite differently. If she lives in Houston, Chicago or in the Bronx, her words surely would come out in the characteristic dialect of the English language prevalent at that particular location.

The above example illustrates that deep structure is language independent, as it concerns abstract ideas. The underlying structure is language, and it can be any language that has words and syntactical structure to accurately express the idea of the deep structure. The surface structure in our example is spoken language and, again, can be different depending on a number of conditions, even though it is derived from the identical underlying structure. But the surface structure for the same underlying structure could be something else, too. She could have written down her request, or she could have used sign language, for example.

The understanding of this concept of the layered nature of communication is very helpful. From the standpoint of discussing reading, the concept of surface structure is particularly important. The same underlying structure, or sentence, can be expressed in several different ways, for example, in speech, conventional writing, short-hand writing, Braille writing, etc.

It is not always easy to transpose deep structure into underlying structure, as those who have done any serious writing are keenly aware of. Quite often we have an idea in our head and we have to try several versions of word selections and word combinations before we are satisfied that the words say what we have on mind. *Unease, consternation, apprehension, alarm, scare, fear, fright, dread, terror, panic* are all expressions of a similar mental condition, but a communicator must be very careful to select the appropriate word for conveying the intended degree, intensity and character of the feeling. Law makers and judges in particular need to be extremely careful in their wording of documents, as any ambiguity may have far reaching effects.

At the surface structure are the words and sentence elements as spoken or written. At the underlying structure level the emphasis is on the words and sentence elements as they are grammatically structured. The step from the underlying structure level to the deep structure level is the place where ambiguity in the message may appear. One underlying structure may have two different meanings, i.e. reflect two different deep structures, while two different underlying structures can mean the very same thing, i.e. express the same deep structure. The sentence "Flying planes can be dangerous" means both that it can be dangerous for someone to fly planes and that planes that are flying can be dangerous. On the other hand, "To please John is easy" and "It is easy to please John," despite being different underlying structures, have the same meaning at the level of deep structure.

Charles C. Fries in his book, “Linguistics and Reading,” dwells on this subject. He takes issue with such prominent reading expert as Professor William S. Gray who in his 1956 book “The Teaching of Reading and Writing,” states that meaning in writing comes from the fusing of words into ideas. Not only the words, but the structure of the sentences as well matter, says Fries, and perhaps more importantly so. Gray gives an example of his theory with the following sentence:

The water in our village well is good to drink.

If it were the mere sum of words that gives sense to the sentence, Fries counters, it should not matter in what sequence the words appear. Yet, the same words used in different sequences make quite different senses:

Is the water in our village well good to drink.

To drink the well water in our village is good.

To water well the drink in our village is good.

Fries concludes that meaning comes from the application of grammatical knowledge to words in the spoken or written communication. Furthermore, not only is the sequence of the words, thus the sentence structure, important for meaning. In spoken communication emphasis and pauses are

many times the determinants of the meaning of a sentence. Fries gives several examples, including the following one (we use underlining to show emphasis and back-slash \ for a brief pause):

> They are to come to the office directly \ after the play.
>
> They are to come to the office \ directly after the play.

As we note, the meanings are quite different. In conventionally written messages such indication of meaning by emphasis and pause is not possible to convey, and the meaning can be communicated only by changing the structure of the sentences, such as:

> After the play they are to come directly to the office.
>
> Directly after the play, they are to come to the office.

It is interesting to note that this character of spoken communication has been recognized by playwrights, some of whom make liberal use of directorial comments in dialogs, such as, "angrily," or "disbelieving," or "joyfully," giving cues for proper emphasis.

As we see, making the accurate translation from the deep structure of a message to the underlying structure is not as simple as we perceive it in our use of language as a means of communication. It feels easy in practice, because we have done it countless of times and the human brain is a marvel of data processing capabilities.

The difficulty of transition between deep and underlying structures exists not only on the sender's end of the communication. The receiver is faced with the problem of transition from surface structure to underlying structure and then to deep structure. The first transition is relatively easy in spoken communication, but we may encounter hindrances. In a situation where the communicator speaks blurred, or very fast, or in a dialect that is unfamiliar to our ears, we may have difficulty "understanding" what is being said: we may have to struggle in making out what the underlying structure is so we can take it to the next step, which is the discovery of the deep structure.

Once the recipient of the communication perceives the beginning of the surface structure, and it is sufficiently familiar to translate into underlying structure, his brain begins to immediately derive the deep structure: the meaning of the communication. In other words, we do not wait to hear the end of a sentence before we begin to make out its meaning. Rather, we construe a meaning and then verify it from the part of the communication that follows, or disprove the perceived meaning and proceed to construe a modified meaning until the new meaning is verified. This is why many times we anticipate the words of speakers before they are ever uttered.

The transition from underlying structure to deep structure, however, is complicated by the fact that in most languages the same words can have several meanings. Consequently, even once we have the correct underlying structure, namely the communicated sentence, we still have the formidable mental task of determining from the meaning of the entire sentence the proper meanings of all of the constituent words. This step can be rather complex. Fortunately, in most of our communication we use customary expressions which are familiar already, and therefore need minimum mental processing.

In discussing this issue, namely the multiple meanings of words, Fries states that "it became clear from the fifty years of editorial work upon the Oxford English Dictionary and the other collections of usage, that multiple meanings for words is normal, not 'queer.' We must everywhere in language expect to find that the frequently used words have a variety of meanings — not just one so-called literal meaning and a few figurative or transferred meanings. The number of different meanings for each of the commonly used words of English as recorded and illustrated in the Oxford English Dictionary will not be believed without a thorough study of the evidence. For example, for the 500 most used words in English (as listed by the Thorndike word-count) the Oxford Dictionary

records 14,070 separate and different meanings — an average of 28 different meanings for each word."

This character of the words, i.e. many having multiple meanings, and the fact that the specific meaning can be determined only from the context of the word, supports the view that fluent reading is an activity involving as units of reading sentences or paragraphs, rather than words. It is likely that this observation gave rise to the "whole sentence" method of teaching to read. But perhaps we are jumping ahead with this comment, as this subject will be discussed later in more detail.

The above examples illustrate in very broad-brush strokes how devilishly complex a thing language is. How is it possible then, that almost all human beings are capable of learning to use at least one language to send and receive communication? Considering the preceding discussion, one is inclined to conclude that a person needs the mental prowess of a rocket scientist to handle the complexities of deep structure - underlying structure - surface structure transitions and the complex semantic tasks that are involved in just vocal communication. And yet, simple people all over the world, most without any schooling at all, manage to express their needs, their thoughts, their ideas, which quite often are astonishingly complex and astute, if we only take the trouble to hear them out. They know and instantly recall thousands of words, many with multiple meanings, they know how to put them in complex syntactic and semantic structures in order to match them to the meaning of their message. How do they do it? How do they learn such complicated process? How do people learn language?

Learning

Learning can be defined as any relatively permanent change in behavior resulting from past experience. This change in behavior can be obvious and physical, or subtle — detectable only under special conditions.

When psychology became a science about a hundred years ago, following the pattern of other natural sciences such as physics and chemistry, experiments were conducted with animals to uncover the secrets of behavioral changes and the mechanics of such topics as perception, memory, thinking, learning, and problem solving.

The first school of thoughts was based on what is called behaviorist theory, which claims that learning, for example, is based on stimulus and response in the subject — the individual being studied and experimented with. According to this school, when the subject was exposed to two stimuli, one natural and one artificial, it could be conditioned such that the artificial stimulus by itself resulted in the same response as the original stimulus had elicited. Furthermore, if a stimulus was presented and coupled with a reward, learning — meaning modification of behavior — would take place, which was the normal and only way of learning. It was held also, that animals could not think and the results of animal experiments were cleverly extrapolated to human behavior. It was true that dogs were made to salivate at the sound of a bell, chickens ran faster when they were given four kernels of corn rather than one kernel, rats ran through mazes and pressed levers to get food, and captive tigers by giving them morsels of meat could be "taught" to stand on their hind legs, turn around and leap through flaming hoops. Humans were also observed and the conclusion was reached that the stimulus - response mechanism, when coupled with "reinforcement" (i.e. a reward of some kind), verified the validity of observations on animals. The behaviorists were thorough scientists. They constructed experiments to study small elements of complex behavioral phenomena and arrived at their conclusions by synthesizing the results.

Regarding the non-thinking nature of animals, any observer of animals in their natural habitat soon reaches the conclusion that animals do think, indeed. They certainly will not solve an algebraic equation system with three unknowns, but the tiger will purposefully select an advantageous

place to stalk its prey, spot a lame or young or old individual in the herd, separate it at the right moment and make the kill in order to have a meal. It learns to perceive a situation, evaluate it, make a decision to act and to execute a plan, and it learns all these by observing mother tiger hunt, and by learning from the success or failure of past hunting experiences. If animals could not think to a degree necessary for their survival, how can we explain, for example, why birds inspect numerous potential nesting sites before judging one as acceptable by some criterion known only to them to build their nest just there and not elsewhere?

The fact that something was amiss in the theorems of the behaviorists became evident in a short time, and soon they had dissenters. In Austria and Southern Germany a group of psychologists came up with the idea that not parts make up a whole, but rather the whole is constituted of parts which only in their interrelationship make up the whole. The German language has a word for this concept: Gestalt. The group of psychologists advancing this idea became known as Gestalt psychologists. They said that studying the parts separately and integrate the results to explain the whole would not do. The exact reverse was necessary. By the 1920s they were a forceful influence in the world of psychology. In fact, they became so influential that modern psychology evolved from the Gestalt theory.

Today it is generally accepted that there are two kinds of learning: *cognitive learning* and *associative learning*. The former is the process whereby the individual learns by "discovering and figuring out" the material to be learned, while the latter consists of "being told" the facts to remember and then memorizing those facts.

The purpose of learning is the building in our mind of a model of the world around us. In this model of the world we seem to create and test hypotheses about the organization of the real world and place things in categories within the order of the system reflecting the world as we perceive it. If no category exists for an item, we establish a new one and then create interrelationships with other categories. This process is called acquisition of knowledge or learning, and it is a subconscious process. This kind of knowledge acquisition is postulated by cognitive psychologists and is called cognitive learning. The cognitive learning process is based on observation and the drawing of conclusions, on the understanding of how things work and what is their interrelationship. In the view of cognitive psychologists things can be learned but not taught. The teacher facilitates learning by the student, by presenting the subject in a way that is easy to understand.

Behaviorists, on the other hand, hold that learning is the result of habit formation, whereby a certain stimulus results in a response which is then reinforced. After several repetitions it becomes a habit, i.e. forms a part of our store of knowledge. This is associative learning, as the stimulus and the habit become associated through repetition and reinforcement. Examples of this latter learning may be how a trainer teaches a seal to balance a ball on its nose by rewarding proper behavior with a fish and punishing wrong behavior by withholding the fish, or the infant upon uttering the right words getting a smile, accolades and a big kiss from mom.

A crude example for the two modes of learning is how a child learns that fire is hot. He can touch the stove, burn his hand and learn directly from the experience that the stove is hot, therefore touching it should be avoided as it can cause a painful sensation. Alternatively, an adult can explain that the stove is hot, perhaps hold the child's hand at a safe distance from it to demonstrate the effect of heat upon the skin, and admonish the child to remember. Psychologists state that the cognitive learning process if faster and more effective. They also state that a more developed mental power, or higher intelligence, or greater "g-factor" is associated with the extensive use of cognitive learning. This does not mean, though, that there is any degree of difference in the quality of the acquired knowledge because of the method used for the internalization. Something learned by the associative possess is knowledge just the same as if learned by the cognitive process. Still, a teacher has it easier when the pupil can learn by cognitive learning, since less explanation and exposition is needed to transmit the same amount of knowledge.

This aspect of the process of learning has a profound impact upon the teaching of reading in the United States. Most of the methods of teaching, namely all of those coming collectively under the heading of meaning-emphasis methods: the whole-word, sentence, whole-language, eclectic methods, are essentially based on learning to read by the cognitive process. While they use living language in the process of learning, which is a definite advantage, they are all based on the learner making the connection between the spoken language and its graphic representation. Most methods go so far as to only touch upon the existence of letters and the relationship of letters and sounds as an incidental matter to be discussed only when the learner brings up the subject. This works acceptably well with those learners who are familiar with the concept of letters from home or through some other exposure, and those for whom writing and literacy is part of their natural environment. The majority of children in our schools belong in this group. However, there is a significant minority who do not. To expect those children to learn reading cognitively is a tragic folly.

An interesting aspect of learning is that all learning needs a foundation. The basic terms, facts and parameters must be known already in order to build on them whether by cognitive or associative learning. In fact, cognitive learning is not possible if there is no basis to build on, therefore the learning process starts by either being told what the basis is, or by observation of the basic facts.

Of course, like with most things in life, the line separating the two modes of learning is blurred. Any learning situation can consist a little of this and a little of that, or can turn from associative learning into cognitive learning, or vice-versa. Take the case of the dolphin that, in order to teach it to keep the pool clean, was rewarded with a fish whenever it brought to the trainer trash that had fallen into the pool. One day the trainer noticed that the dolphin hid pieces of paper in a nook of the pool and brought it up piecemeal to receive a fish for each scrap. This is a situation where associative learning became cognitive learning, and one wonders who was training whom, and just how limited the thought process of certain animals is.

Intelligence

Of course, there is another aspect of learning that needs to be discussed briefly. This is a politically charged subject these days: intelligence.

Webster's Ninth New Collegiate Dictionary defines intelligence as the ability to learn or understand or to deal with new or trying situations; the skilled use of reason; the ability to apply knowledge to manipulate one's environment or to think abstractly as measured by objective criteria (as tests).

William Kottmeyer in "Decoding and Meaning: A Modest Proposal," mentions the fact that not all children are endowed with equally high intelligence. Those who have better intellectual capabilities will learn faster and easier than those who do not. This, he states, is acknowledged in Europe, where those less inclined or less capable to learn are directed to a simpler education and learning a trade after the first four years in school. In the United States the idea of egalitarianism is extended to schooling and all children are sent to high school whether they are suited for it or not. He dares to bring up the ideas of Arthur R. Jensen about intelligence. He summarizes Jensen's view as follows: "Jensen recognized a distinction between what has been called fluid intelligence and crystallized intelligence. Fluid intelligence is, briefly, the substantially heritable capacity for abstracting, generalizing, and perceiving relationships, that is, the facility for cognitive learning demanded by the traditional academic curriculum. Crystallized intelligence includes the skills and knowledge which have been acquired by associative learning, that is, the learning which is the result of direct teaching which does not rely wholly upon the pupil's general intelligence."

Jensen's definition of intelligence is given in the Harvard Educational Review, 1969, as follows: "Intelligence is mental brightness; it is a capacity for conceptualization, abstract reasoning and problem solving, for processing information in the form of words and symbols, for integrating

and understanding what is learned, and for making broad transfer from past learning to the solution of novel problems."

Cognitive learning is an intuitive process that occurs through the exercise of g-power; associative learning is the rote learning that is acquired by direct instruction. The g-power is used in the sense of the utilization of the g-factor, the "marker of general intelligence," which is the purely natural (fluid) intelligence of a person without the added (crystallized) intelligence acquired through learning. A person's intelligence includes both fluid and crystallized intelligence. In their application there is probably no difference, but while the first comes at birth and is effortless, the second has to be worked for.

There can be no denial that intelligence has something to do with the ability to learn in general, and the ability to learn to read in particular. Intelligence, or rather the intelligence quotient — the now much maligned I.Q., which was used for a long time as a measurement of relative intelligence by dividing a person's mental age as reported on a standardized test by his chronological age and multiplying the result by one hundred — used to be the metric on the basis of which children were started on their scholastic careers.

There has been an argument going on for a number of decades about intelligence, whether it is due to nature or nurture, whether it is an hereditary trait of humans, or it develops during the maturing of the individual. Egalitarian, or at least democratic, considerations make it politically desirable to adopt the latter view, namely that heredity has nothing to do with intelligence.

Perhaps it is closer to the truth that heredity is not everything that has to do with intelligence. Although it is generally true that parents of higher intellect are more likely to have progeny of high intellect, this is not an iron rule. One only needs to look around among his friends and acquaintances to see that there are plenty of exceptions in both directions. One of the best arguments against the dominance of heredity in the passing on of intelligence is the fact that people of lower education and presumably of lower intellectual level tend to have more children than their higher educated and more intelligent fellow humans. If heredity were the dominant factor in passing on intelligence, humanity long ago would have degenerated to a level where there would be no civilization as we know it. Yet completely the opposite seems to have happened. It appears that the general intelligence and education of the population improves as time goes on, not to speak of the fact that the amount of knowledge an average person must possess in order to function in our society would have tasked top ten percentile of society just one hundred years ago.

Nevertheless, the fact remains that some people are blessed with more native intelligence than others. These are the persons who can figure out things for themselves, for whom the "light goes on" in their head when confronted with a problem, who never seem to study in school yet are passing test after test with enviable ease. These people can learn things in the cognitive mode. The rest of us must struggle for it, namely use the rugged path of associative learning to reach a similar level of knowledge.

Learning Languages

Having touched upon the subject of learning and intelligence, we can commence discussing the acquisition of such a complex bundle of knowledge as the use of a language.

One of the great child psychologists, the Swiss Jean Piaget, identified four stages in the mental growth of children. The first one is the "sensorimotor stage," which lasts from birth to about age 2. During this developmental period, the child is concerned with gaining motor control of his body and learning about physical objects in his environment. The next stage of development, which he called the "preoperational stage," extends to about age 7, during which the child is preoccupied with verbal skills. At this stage the child can name objects and reason intuitively. In the third developmental period, which he calls "concrete operational stage," extending from ages 7 to 12, the child begins

to deal with abstract concepts such as numbers and relationships. Finally, in the "formal operational stage," ages 12 to 15, the child begins to reason logically and systematically. Of course, as with all such categorizations, the reality is somewhat different and the lines of demarcation are zones of transition and they range from pale gray to dark gray. Also, the timing and length of these various developmental periods will change significantly from child to child.

Generally speaking, children learn their "mother tongue" between the age of 18 months and 3 years. The process begins with "baby talk," which appears to be universal, an almost identical vocalization regardless of the nationality, language, or ethnic background of the parents, and includes an astonishing variety of sounds, many of which are not used at all in the language the child eventually will learn. "Words" like "mamma," "wawa," "dada," etc. are followed by imitations of words heard from those around them, who are generally the parents, siblings and family members, all speaking the same language. The infant will imitate the sounds, picking up simple words in time, generally words that mean surrounding objects, or persons, or things the infant needs. Little by little infants modify what they say and test it against what they hear in their environment. The first sentences they construct will be imperfect and sketchy, generally a few rudimentary words put in some sequence which the recipients of the communication needs to decipher. But once the message is understood, the mature recipient of the communication generally bounces it back in correct form. After a while it sticks and the infant learns the proper syntactical forms.

The end result of this trying, testing, modification process is the ultimate acquisition of and fluency in one's native language. It takes time, of course, but it is astonishing, if one but gives it some consideration, that a young child in the course of two years or so can learn to form the proper sounds of the language, memorize two or three thousand words, many with several meanings (this represents three or four new words each and every day), and memorize to the point of instant recall and application a host of syntactical and semantic rules. Needless to say, the child will not recite those rules, as the vast majority of adults could not either, but he is subconsciously knowledgeable about them and applies them with ease.

The learning of the language is not finished here. The expansion of the vocabulary, the learning of the more complex sentence structures are still to come, but the basics are there. Fortunately, probably due to genetic coding, it is easy for young children to learn, just as it appears to be easy to learn for young animals, too. Learning a language before the age of ten is a rather effortless exercise, which has long been recognized by the privileged, who go to the trouble and expense of employing governesses speaking a foreign language to teach their children a second language while they are young. Our own children speak fluent Hungarian besides their "native" English, and our friends' daughter, having a Hungarian father and a German mother, has the advantage of speaking three languages fluently without having had to spend any effort in learning them. Past the age of ten or twelve, we seem to lose our facility of learning languages without having to work for it, and our inclination seems to shift towards learning other subjects that need the power of reasoning and deal with ideas rather than with the "hardware" of the language.

When learning a second language one can do so like a child, by associating sounds, words and sentences, i.e. surface structure, to underlying structure, and then get the meaning, i.e. the deep structure. There are many people who understand and speak a second and third language and are unaware of its rules of grammar, or are unable to write and read it. A language can also be learned by just reading, when it uses an alphabetic or syllabic writing system. In such case a person can read the text in the "foreign" language and can discern the meaning, generally on the basis of a bilingual dictionary for lexicography and a book of grammar for syntactical structure. On the basis of these, the surface structure — writing in this case — can be learned sufficiently well to get to the underlying and deep structures without any connection to the spoken surface structure, even though the written surface structure has its origins in the spoken surface structure. Thus, many people can

read for meaning in a second language without being able to understand or speak the spoken language.

Most often, though, a second language is learned simultaneously in its spoken and written forms. In such case the learning of one form helps the learning of the other, in a mutual and alternating feedback relationship. This is particularly true when it is done deliberately and purposefully.

While on these peripheral subjects, perhaps we should spend a little time on comprehension and the processing of information, in short, thinking.

Our very own image of the world

A little earlier mention was made of our mental model of the world around us. This subject has been the topic of discussion ever since the day's psychology was considered to be a branch of philosophy, which goes back to the days of the ancient Greeks. Some of our great thinkers questioned even the existence of a real world outside of our mind, as its reality could not be proven by independent means, only through our sense organs. These, of course, feed all information to our mind, which fact makes all such information suspect because we may sense things we want to sense and believe to be there, while in reality nothing may be there. To illustrate the point, look at a pencil cross-eyed. You will see two pencils. Which, if any, of the two images is the real pencil? Or take the craze of a few years back of the "Magic Eye" images that looked like meaningless jumble on a flat surface of paper, yet when looked at slightly cross-eyed, the flat surface arranged itself into three dimensional figures with their surfaces covered in strange patterns. Which image is the true one, the two or the three dimensional one? Or what color is a woman's dress? In sunlight it may be green. In the red neon light of a disco it is black. Under the orange sodium street light it is faded khaki. We can smell gasoline, garlic, and perfumes sold at horrendous prices under fancy names, but we miss 95 percent of all smells our dog picks up effortlessly. When we think we are surrounded by pristine silence, Fido will clearly hear Aunt Emma's familiar footsteps before she turns the corner. Our senses are deceptive and too imperfect to rely upon. Thus, said the philosophers, we may never know what the real world is like; we can know only what our own image of it is. And our image of the world dwells in our brain.

The average human brain would fit into three pint-size containers and consists of about 10 billion nerve cells. This relatively small quantity of complex tissue performs a host of functions. It is the control center for movement, sleep, hunger, thirst, and virtually every other bodily function necessary for living. All human emotions, from love to hate, fear, joy and sadness, are controlled by the brain. It receives, filters, and interprets the countless signals that are sent to it by the sensory organs reporting on the environment. In addition to this, the brain is the storage of an incredible amount of data. Its storage capacity, efficiency of sorting, storing and retrieving data is simply astonishing, and shames the most sophisticated systems of electronic data handling in modern computers. It is not known how the brain does all these complex tasks physically and/or chemically, and one can only speculate about the prospects of ever discovering all of the hows and the whys of its operation. Not that scientists of all stripes are not trying, and little cracks are continuously opening through which glimpses at the mysteries are gained.

One of these insights on how we learn, remember and recall is the result of research related to reading and comprehension. I came across it reading an article by Richard C. Anderson, "Role of the Reader's Schema in Comprehension, Learning, and Memory," in a 1984 book titled "Learning To Read In American Schools," a collection of articles.

Although we don't know how memory works and how information is stored in the brain, we are quite certain about how it is organized. In our minds we build images of parts of the world around us. Each of these models is called a *schema* (the word "schema" means an outline, diagram,

plan or preliminary draft, and its plural is "*schemata*") and the idea of how this system works is called the schema theory. The brain stores a huge number of schemata.

A schema can reflect something concrete, or an occurrence, or something abstract, or even something that does not exist. Schemata can fit one into the other, like Russian dolls, or groups of them can fit into a schema, and several of these can fit into yet another schema, like boxes of chocolate assortments in cartons transported on a truck. Let's take a few examples.

Your room is represented by a schema. You know — in many cases — where can you find things, you can navigate through the room even in darkness, you notice if something is out of its customary position. You know where the room is in the house or apartment, how the dwelling fits into the block where you live, and so on. At your customary supermarket, when in a hurry, you head straight to the aisle that contains what you want, and become somewhat upset if the store manager had ordered a re-shuffling of items so as to force you to look at things you usually don't, because the new reality does not fit your schema of the place.

Another schema may be the memory of an exchange of words with a fellow worker, or a pleasant evening with someone you like to spend time with. Or a vacation. You name it. Schemata such as these are stored under various headings and may be cross-referenced. When thinking of a person, the exchange of words may come to mind. When thinking of the subject of the exchange, the same may come to mind. When thinking of the location of the exchange, the same schema may come to mind.

The conjugation of verbs in past tense in a foreign language may be a schema, or the sequence of events in the Civil War that you learned about in high school. The Pythagorean Theorem is a schema that fits within the schema about trigonometry, which fits within geometry.

When an architect designs a building, she has an accurate mental picture of it down to the smallest details even before the land is cleared and the cornerstone is laid. The entire building is a schema and also a collection of schemata. Even if the architect never had a chance during construction to visit the building she designed, she will find her way unhesitatingly at her first site visit, unless changes from the plans were made unbeknownst to her. The reason for this remarkable feat, of course, is the schema of the building in her mind.

Schemata are of great importance in comprehending, learning and remembering. We do not understand a subject until it fits an existing schema, or we construct a new schema for it. Once the existing schema is modified or the new one is created, we have "learned" the subject and we "know it." When we try to recall something, our brain searches the related schemata, most likely in some hierarchical fashion, until it comes across the proper information, generally within a small fraction of a second. To illustrate how astonishingly efficiently this mechanism works for some people, all one has to do is watch Jeopardy on the television. Although few of us have the mental brawn to walk away with $15,000 in cash from such contest of minds, the cruising speed with which the brain of most of us works is still rather phenomenal, and serves us perfectly well without much conscious effort on our part.

Existing schemata have profound and far-reaching effect on our comprehension. Anderson and his colleagues constructed tests to prove this experimentally. One, for example, consisted of two letters, one written by an American about an American wedding, the other written by an Indian about an Indian wedding. Both were given to groups of American and Indian readers. Their reading was timed and their understanding and recollection was tested by multiple-choice and essay type questions. As expected, members of both ethnic groups read the ethnically familiar text faster and the level of recollection was higher. Furthermore, there were gross misunderstandings by members of both groups relative to the various aspects of the wedding. For example, mention was made in the American letter of the bride wearing the dress her grandmother had on her wedding. While the American readers construed this as a positive aspect — reverence for tradition — the In-

dians thought it an indication that the bride's family was rather poor as they could not afford a fashionable new wedding dress, as is the preference in India. On the other side of the example, the Indian letter described the care and circumspection that went into the selection of gifts by the bride's family to the members of the groom's family. This is part of the still customary dowry the bride's family "pays" to the groom's family. While the Indian readers understood quite clearly what was the issue, the Americans interpreted this aspect as an exchange of gifts between the two families, as the idea of dowry is quite alien to most contemporary Americans. This experiment illustrated that the different schemata of the two groups regarding weddings significantly influenced the understanding and interpretation of the described events.

As Anderson puts it, "The thesis of this section is that comprehension is a matter of activating or constructing a schema that provides a coherent explanation of objects and events mentioned in a discourse. In sharp contrast is the conventional view that comprehension consists of aggregating the meaning of words to form the meanings of sentences, aggregating the meanings of sentences to form the meanings of paragraphs, and so on. The illustrations in this section were intended to demonstrate the insufficiency of this conventional view. The meanings of the words cannot be 'added up' to give meaning of the whole. The click of comprehension occurs only when the reader evolves a schema that explains the whole message."

We got acquainted, or refreshed our acquaintance, with a few new concepts in this chapter. We were shown that communication is a rather complex process involving three levels of mental operation, the *deep structure* being the sense or meaning of the communication, the *underlying structure,* which is the linguistic framework containing the meaning, and the *surface structure*, which is the physical expression of the message contained in the linguistic framework. These concepts, as we will see later, are very important when it comes to discussing reading, particularly the transition of the beginner reader from receiving communication verbal surface structure to receiving it in written, or graphic, surface structure.

We were exposed also to the theory of two modes of learning, namely the *cognitive learning* process, in which the person "finds out for himself" whatever is learned, and *associative learning,* where the person "is told" what needs to be learned.

Finally, we touched upon the way the brain stores information of the world around us. These packages of organized data are called *schemata*, which can be embedded, contained or linked to another *schema* or several schemata.

The importance of these concepts will be evident later, for by understanding them, it will be easier to recognize why certain practices are more likely than others to result in the effective and lasting learning of the skills needed for productive fluent reading.

Chapter 4

Writing in the English Language

A slim book published in 1955 stirred up quite a fuss in the teaching profession. The book was "Why Johnny Can't Read" by Rudolf Flesch. It claimed that the lamentably high number of illiterates and semi-literates among young people completing public schools can be blamed on the shortcomings of the methods used in teaching them to read. It prompted a response of nearly general outrage from teachers and other reading professionals.

Where does the blame lie?

One of them, Stanley L. Sharp, a professor of English, who taught for 17 years at Stanford and 24 at the College of San Mateo, California, after a teaching career spanning 43 years, devoted ten years of his life after retirement to responding to Rudolf Flesch's book and in 1982 published a book with the title of "The REAL Reason Why Johnny Still Can't Read." He put the blame squarely where he thought it belongs: on the horrid orthography of the English language. He states in the book that scores of scholars agree how unsystematic and irrational a spelling English has. He quotes 18 of them, duly giving source and page number for each quotation. In one of the chapters he gives long lists of examples of how nonsensical English is, inasmuch as the exact same spelling is pronounced one way in one word and totally differently in another. Examples are like the following: hinder - binder, novice - notice, senate - senior, days - says, break - creak, hew - sew, age - savage, etc. To prove the code-emphasis advocates wrong, he points out that even starting a word with a pattern of known pronunciation can be misleading, and he shows examples, 78 of them, such as: broth - brother, fun - funeral, rod - rodent, know - knowledge, show - shower, steal - stealth.

Professor Sharp sure got one thing right: English is strange when it comes to writing. But like so many times in the world around us, there is system in the madness, there is a good reason for nearly everything, and the situation is not as hopelessly bad as it appears to diehard pessimists and apologists.

The problem with English writing is twofold. Folks started writing in the language too early — from our present day point of view — and they started out on the wrong foot, or rather with the wrong alphabet.

In order to see how the present spelling came about, we have to go back in history quite a ways.

How did the English language evolve?

The English language is of the Indo-European language family, which consists of several subfamilies. All of the Indo-European languages are believed to have developed from a common ancestral language thousands of years ago. Among the subfamilies are the Celtic, Germanic, Romance and Slavonic languages. Our main interest is in the Germanic subfamily, which encompasses Scandinavian and West Germanic languages. The former group includes Danish, Norwegian and Swedish, the latter Dutch, English and German.

Over two thousand years ago, the British Isles were populated by people of the Celtic and Gaelic tribes. The languages they spoke are mostly extinct now; however, today some two million people still speak the Celtic Cornish and Welsh, and the Gaelic Irish and Scottish. Before the emergence of the Roman Empire, Etruria, north of Rome, was the dominant power in the region, and its influence extended quite far into the barbaric northern part of Europe. This influence is manifest in

the fact that the Celtic, Gaul and Germanic tribes all adopted some version of the Etruscan alphabet as the foundation of their runic system of writing.

Not much after the birth of Christ, Roman legions invaded the main island of the British Isles and occupied most of the present day England. Needless to say, they brought with them the Latin alphabet, which in a short time replaced the runic alphabet then in use among the natives. When Christianity spread within the empire, it also reached Britannia, and the Celtic population converted to the new religion. With the waning of the Roman Empire and the abandonment of the province of Britannia in 410 A.D., the opportunity opened to Germanic tribes living in the present-day Southern Denmark and Western Germany to expand into the British Isles, which they did, beginning in the middle of the fifth century. The first to arrive were the Jutes, who were followed by Angles and Saxons, all speaking Germanic languages, quite different from Celtic and Gaelic. The invaders pushed the native population west and north.

The common origin of the present day English and German is manifest in many old words that are very similar in the two languages. Consider the following examples out of probably several hundred that can be given: mother - Mutter, son - Sohne, water - Wasser, earth - Erde, thunder - Donner, five - fünf, thief - Diebe, snow - Schnee, hound - Hunde, etc. An astonishing number of basic words are almost identical. As it is inevitable during the migration of peoples, the invaders took over a number of words from the indigenous population — understandably not each and every Celtic and Gaelic individual or family relocated and, without doubt, intermarriages occurred.

The language spoken by the invaders is now called Old English, but in reality it was an aggregation of several Germanic dialects. As time went on, Old English changed from the original Continental form as the regional dialects underwent development. The four major dialects recognized in Old English are Kentish, originally the dialect spoken by the Jutes; West Saxon, a branch of the dialect used by the Saxons; and Northumbrian and Mercian, subdivisions of the dialects of the Angles. Four eventful centuries later, by the 9th century, due to the influence of Alfred, king of West Saxons and the first ruler of a unified England, the West Saxon dialect became dominant in prose literature.

But long before that, and some time after the Jutes, Angles and Saxons settled in their new country, Christian missionaries came from Ireland, bringing with them the Latin language and the Latin alphabet, and as the settlers in England became Christianized, the Latin letters replaced the runic symbols for writing their native Germanic languages.

Miriam Balmuth in her "The Roots of Phonics" writes about the development of the Roman alphabet, that when Romans started to use the Etruscan alphabet, they adopted 21 letters (**A B C D E F Z H I K L M N O P Q R S T V X**) where **V** was used both for sounds /v/ and /u/. Later on the letter **G** was added in place of **Z**, since the latter was not used in Latin, but **Z** was added again in the last position of the alphabet after the Roman conquest of Greece and the subsequent use of Greek in learned Roman circles. Thus the Roman alphabet contained 22 capital letters.

Charles C. Fries in his book, "Linguistics and Reading," expresses his opinion that the root of the problem with the commonly recognized difficulty of English spelling is the fact that the Latin alphabet was adopted for the writing of the Old English language without significant modification. To begin with, the Latin language has only five vowel sounds, /a/, /e/, /i/, /o/ and /u/, therefore the five vowel letters, **A, E, I, O** and **U,** were quite sufficient for writing it. Old English, on the other hand, had many more vowel sounds — there are 19 in "standard American" English: 5 short and 14 long vowels of which 5 may be considered diphthongs — but there were only five letters to write them with. For reasons of their own, the ancients did not add "umlauts" like their German cousins, nor any other diacritical marks like the Swedes and Danes, to denote their additional unique vowel sounds. Instead, they used letter combinations to achieve a similar effect. One may speculate that since the new writing was introduced by Celtic and Gaelic speaking missionaries, they may not

have had adequate knowledge of the Germanic languages to make the proper decisions as to what was needed to write them with Latin rather than runic letters. In any event, whatever they did or did not do certainly did not promote ease of spelling.

In the evolution of the English alphabet, four letters were added to the Latin alphabet. Two were "runic" letters, the **W** and a letter similar to **P** but with an extended stem. The former stood for the initial sound of the word "won," while the other for the initial sound of the word "thin." A **D** with its stem crossed was used for the initial sound of the word "then." In later times these last two letters were replaced by **TH**, which is still in use today. Additionally, the letters **J, U** and **Y** were added, bringing the total number of letters to 26.

By the end of the first millennium, the English alphabet as we know it today was in use.

Hardly three generations after the turn of the millennium, a cataclysmic even occurred which had far reaching effects on the English language. After a series of invasions by the Danes, and following the reign of several inept Anglo-Saxon kings, the last of them, Edward the Confessor, died in 1066 without an heir. Several contestants stepped in to fill the power vacuum. Duke William of Normandy in the battle of Hastings became the ultimate winner, ushering in the era of the Norman Conquest. This event marks the end of the Old English and the beginning of the Middle English period in the development of the language.

The Norman Conquest brought to England a French-speaking ruling class that was more literate than the local population and that retained its French language. During their nearly 150-year rule many of their words migrated into the language of the people, but when written, they retained their French spellings, even though their pronunciation became Anglicized. Because of this period of history, about one quarter of the present English words is French in origin. About the same portion of the words is Old English in origin, i.e. they are words brought by the Angles, Saxons and Jutes.

During the Norman rule, many of the conquerors intermarried with English women and the two languages, namely the English and French, got mixed in everyday use, while the official language was still French. Thus, at the end of the Norman rule, many French imports were securely rooted in the language of the common people.

King John, the last of the Norman rulers of England, lost Normandy in 1204 and, as a consequence of his high-handed governance, was forced to accept the Magna Carta in 1215, recognizing his errors and accepting the rule of law and English feudal customs. With the end of the Norman period, England was ruled again by Englishmen, and the language of governance became English again.

During the period of from about 1350 to 1550, a unique development took place in the English language. We call it "The Great Vowel Shift." In these two hundred years the pronunciation of 18 of the 20 distinctive vowels and diphthongs of Middle English changed. The "Germanic-sounding" vowels became "English-sounding" vowels as we speak them today. This was a gradual process, of course, nobody knows why and how it happened. Some of the vowels turned into other vowels, or into more than one different vowels, others changed from vowels to diphthongs.

Miriam Balmuth in "The Roots of Phonics" gives examples of the changes the Great Vowel Shift brought:

a changed from a vowel as in *alms* to the one in *ax*, or to the vowel in *ate*.
e this vowel turned from the one in *ate* to the one in *feet*
e the vowel like in *ax* became one like in *great* or *eat*
i the second vowel in *marine* shifted to the diphthong in *my*
o the vowel sound in *born* became the vowel sound in *boot*
u the vowel in *book* shifted to the vowel in *blood*
u the long vowel of *rude* became the diphthong of *out*

Unfortunately, the changes in the sounds did not always carry through to changes in the letters with which they were written. This is understandable, since the shift took place over a long period of time. Who would have decided the exact point in time when the shift was deemed to have taken place and it was appropriate to change the spelling? So the spelling remained while the pronunciation became markedly different. Naturally, there were exceptions. And when the spelling did change, the changes created inconsistencies. Consider the words *door, floor, food, goose, book, foot, blood, flood,* to illustrate the confusing effect of using the same spelling for writing four different vowels sounds.

During the Great Vowel Change something very important happened on the Continent. In 1454, in the German city of Mainz, Johann Gutenberg, a printer, invented printing with moveable letters, which revolutionized the printing of books. The new trade spread rapidly, and in 1475 printing was introduced to England. The simple fact that books could now be printed in relatively large numbers and relatively cheaply, changed life and certainly changed the development of the English language, inasmuch as the existing spelling became fixed.

During the Modern English period, which began some 75 years after the printers began setting up their shops, and particularly during the Renaissance period, many words were imported to English from the Latin and Greek languages, even though there were acceptable synonyms already in the language. While people speaking other languages, such as the Germans and Hungarians, coined German and Hungarian words when new words were required to express new ideas, the English preferred to adopt and use words from other languages, including their spelling, even if the words in the spoken language became Anglicized.

Professor Sharp in his book "The REAL Reason Johnny…" takes a very negative view of this practice. In fact, he condemns it and blames it for some of the problems of English orthography. He seems to disregard the reality that these borrowings are an accomplished fact now and cannot be helped. He seems to ignore the benefits, too, namely that the English language in the process of borrowing became the richest language in the world, in which one can express nuances impossible to replicate in other languages. His stance is reflected in the following lines on page 163: "Sometimes one or two native words survived, but they were supplemented again and again. For instance, the words 'to end' and 'to stop' stayed alive. But English took over six new words from French: 'to cease,' 'to close,' 'to complete,' 'to discontinue,' 'to finish,' and 'to quit.' Now shouldn't eight words be enough to express a thought? One would think so, but the pattern had been established, and three new synonyms were brought in from Latin, 'to conclude,' 'to intermit,' and 'to terminate.' So we have eleven words, and surely four or five should have sufficed." Of course, Professor Sharp's opinion on what suffices does not matter. These words are part of the English language now, and had been for a long time before he came into this word. Additionally, each of the eleven words have different meanings and connotations. To wish them away serves no purpose at all, and if he could have undone, through some miracle, the adoptation of these words, he would have done a disservice by making the English language less expressive.

<u>Our modern English language</u>

William A. Craigie, one of the editors of the Oxford English Dictionary, in his book "English Spelling: Its Rules and Reasons" gives an explanation of the method in the madness of English spelling, where there exist words similarly pronounced but differently spelled, such as *rain — reign, strait — straight, flocks — phlox, time — thyme*. The reason he gives for these inconsistencies is etymology.

Etymology is the history of a linguistic form (such as a word, for example) shown by tracing its development since its earliest recorded occurrence in the language where it is found, by tracing its transmission from one language to another, by analyzing it into its component parts, by identifying its cognates in other languages, or by tracing it and its cognates to a common ancestral form in an ancestral language.

Craigie identifies seven basic groups of English words from the standpoint of spelling and origin.

1. Native English, first appearing in Old English texts. These are the Anglo-Saxon words that came from Germanic languages. Examples: *sun, moon, heaven, earth, day, night, life, death, grave, king, queen, white, black, great, small, broad, narrow, speak, think, throw, cast, teach, learn, seek, find, apple, butter, carry, digging, water.*
2. Early French that came in the course of the Norman Conquest. These are exemplified by *cage, chance, chamber, circle, guard, guile, juice, language, money, value, vault, feudal, royal, strange, very, attach, conquer, discover, ensue.*
3. Latin in origin, introduced by the French. Examples are: *capital, censure, decision, religion, captive, circular, definite, feminine, general, calculate, certify, emerge, imitate, sacrifice.*
4. Originating in Latin or Romance languages, taken over without alteration, such as: *arena, formula, inertia, larva, spatula, apparatus, census, circus, cumulus, nucleus, aquarium, opprobrium, fulcrum.* The plural of these words are generally Latin, like *fungi, nuclei, etc.* The Spanish and Italian origins are: *gondola, guerrilla, influenza, siesta, canto, cargo, falsetto, Negro, piano, cello.*
5. Greek, usually spelled according to Latin conventions. Examples are *aeronaut, aphorism, architect, character, genealogy, hemisphere, acoustic, phonetic, analyze, hypothesis, paralyze, chorus, catastrophe, epitome, myopia, neuralgia.*
6. Modern French words are recent arrivals, such as: *beau, belle, crochet, fete, menu, queue, raconteur, apropos, encore.*
7. Exotic words what came from any language in recent times. Such words are *llama, mazurka, pagoda, pajama, polka, vodka, zebra, rajah, khaki, houri, kangaroo, kraal, quartz, taboo, wigwam.*

Thus, Craigie concludes, the spelling of English words greatly depends on their origin.

G. H. Vallins in his book, "Spelling," (revised by D. G. Scragg) agrees. He also reached the conclusion that the modern English spelling system began to crystallize soon after the introduction of printing in 1475 and before certain extensive sound changes took place. Thus while the spelling remained the same, the sounds of the words changed and whatever phonetic character was present went by the wayside. The other problem is that words taken over from other languages were spelled as in the original language to indicate their source, but the pronunciation became Anglicized, thus the phonetic characteristic that may have existed in the original word was lost.

To give a few random examples out of the book of what took place and how the various sounds can have a number of spellings, consider the following. The sound /k/ per Old English, French and Latin is spelled with **c** before **a**, **o**, **u** and as the final sound in a word (*arc*, *disc*); it is spelled with **k** before **e** and **i** per Old English and French practice; with **ck** per Middle English practice, with **q** per French and Latin practice and with **ch** per Greek spelling (*chorus*, *archive*, *chasm*). At the same time, **ch** also stands for the sound /ch/ as in *child* per English practice, and the sound /sh/ line in *chef*, *machine* and *chaperon* per French spelling.

The sound /s/ is spelled with **s, ss, c, sc** (*sit*, *dissociate*, *advice, science*,); /ch/ is spelled with **ch, tch, t, c** (*church*, *ditch*, *fortune*, *question*, *cicerone*); /sh/ is spelled with **s, sh, ch, c, t, sc** (*sure*, *shake*, *chauffeur*, *gracious*, *nation*, *conscience*); /z/ is spelled with **z, zz, s, ss** such as in (*zero*, *wizard*, *puzzle*, *business*, *was*, *scissors*); and /zh/ is spelled with **s, z** as in (*vision*, *seizure*).

Interestingly, when one reads the tabulations of how the various vowels sounds are spelled, many of the classifications do not work for American English. For example, Vallins lists the following words in the same pronunciation family: *bath*, *calm*, *dance*, *father*, *depart*, *clerk*, *Derby*. Mostly, however, the English sounds match the American ones.

Vallins and Scragg list numerous examples of how vowel sounds and diphthongs are written in several spellings:

- cat, plaid
- get, dread, heavy, leisure, leopard, bury
- kiss, became, donkey, women, busy, build, abyss, ladies, dotage, foliage
- up, hot, what, folly, knowledge, love, blood, couple
- grate, faint, away, great, feint, gray
- decent, meat, seek, deceive, key, people, thief
- go, float, echoed, soul, mow
- aisle, either, bright, wine, die, by, dye, buy
- all, balk, taught, taut, lawn
- more, door, four
- round, how
- boil, boy
- put, foot, woman, could, to
- flew, approve, two, fool, wound, truth, rule, blue, fruit, neurotic
- few, denude, future, cue, nuisance
- herd, earnest, bird, work, journey, burden
- here, dear, cheer, weir, bier
- care, fair, prayer, there, their
- poor, tour

Based on the examination of the above listing, and considering nothing beyond the letter combinations standing for the various sounds, English spelling sure appears to be a senseless mess.

So, where does this all leave us?

The fact — perhaps disheartening fact — is that English spelling is etymological rather than phonetic. How we write down words spoken in English is governed not so much by the phonemes in them as by the origin of the words. Is this a reason to throw in the towel and go home, resigning ourselves to the hopelessness of the situation and accepting that either some people will never learn to read in English, or else they have no choice but to learn the spelling of each and every English word as if they all were Chinese logograms?

Not by a long shot.

If this were the case, how to explain the sizable majority of people who do manage to learn to read? Are they all geniuses? Unlikely.

But coming up with a plausible and credible explanation took some original thinking, and that is one commodity that mankind is in constant shortage of.

The mapping model

The beginnings of rigorously scientific study of the language in the United States is marked by the publication of Leonard Bloomfield's book, "Language," in 1933. It, and Professor Bloomfield's teaching, started a movement of rethinking old concepts in linguistics.

It was probably Charles C. Fries in his 1962 book, "Linguistics and Reading," who first brought up the idea of correspondences between groups of phonemes and groups of letters, or morphemes. He proposed the astonishing theory that alphabetic writing is not necessarily phonetic writing, where each letter represents a single phoneme in the pronunciation of a word. Alphabetic writing is basically phonemic. When a child learns his native language he does not develop habits of hearing and producing separate sounds, but rather sound clusters. In writing, certain clusters of graphic patterns correspond to the phonemic patterns familiar from the spoken language.

The same conclusion was reached by Noam Chomsky and Morris Halle in their 1968 book, "The Sound Pattern of English," where they proposed that in writing certain patterns of letters are "mapped" to corresponding patterns of phonemes, forming associative connections between written and spoken morphemes, which they consider the basic building blocks of language.

Two years later, Richard L. Venezky in "The Structure of English Orthography" states that" the simple fact is that the present orthography is not merely letter-to-sound system riddled with imperfections, but instead, a more complex and more regular relationship wherein phoneme and morpheme share leading roles. The synchronic study described here shows these different levels of patterning in the current orthography."

Venezky made a thorough analysis of the most commonly used 20,000 English words regarding their spelling-to-sound correspondences, and tabulating consonant and vowel clusters within the printed words and their pronunciation. He listed them by percentage of common occurrence, thereby evaluating what can be regarded as "regular" and what not. He found that the correspondences are very significant. This means, of course, that once certain spelling patterns are learned and associated with corresponding sound patterns, there are not all that many choices of how printed words can be read. An interesting observation he makes is that English orthography is based on more than the 26 letters. One must consider, similarly to practice in other languages, certain groups of letters as one "grapheme," such as **ea**, **ee**, **oo**, **ch**, **sh**, **th**, **ng**, **tch**, **ck**, **dg**, **gh**, etc.

One of the most important points in Venezky's book is that by identifying grapheme patterns and determining which are "regular," i.e. frequently occurring patterns, they can be mapped with relative ease upon pronunciation patterns, which narrows the choices in identifying the appropriate phoneme pattern.

He writes about the spelling reformers, most of whom wanted to establish a phonetic spelling system, disregarding other aspects of the English language and orthography. In his opinion all such efforts are ill-advised, as the various English dialects would necessitate markedly different spellings, and certain advantages inherent in the present "mapping" writing actually help in getting the meaning of written words.

He is not alone in his opposition to spelling reformers. Fries, Chomsky and Halle are of the same opinion. They all recognize that English spelling is less consistent than most alphabetic writing, but they hold that the view that it is completely erratic to the extent that alphabetic practices cannot be used in its teaching is erroneous and totally without foundation.

Venezky states that morphemes and phonemes play leading roles in our present orthography. Even though *know* and *knowledge* have differing pronunciation for the initial morpheme, the similarity of the graphemes helps in figuring out the meaning of the derivative word. Nevertheless, this helpfulness to the experienced reader is an added difficulty to the beginner reader. On the balance, though, this property of the language helps in understanding what is being read.

By the way, the correspondence, or mapping, between groups of phonemes and groups of graphemes is not unique for English, only more obvious and pronounced than for other languages. Although alphabetic writing systems are generally developed for the standard literary dialect of the various languages, they are readily workable for the multitude of dialects and their different rules of pronunciation. For example, without the least difficulty, the same German text is read by a Viennese, a Swiss and a Prussian, even though they each assign different phonemic values to the very same graphemes. Their spoken words will sound markedly different, yet each will assure you they are only reading what is written.

English is probably the most diverse language when it comes to dialects. Not only the vowel sounds change from dialect to dialect as it most often occurs in other languages, but in English single vowels change to diphthongs and vice-versa, vowels and consonants are dropped or spliced in, all sorts of strange things happen. Just think of the differences in pronunciation among Irish, Scottish, Hackney, Eaton-educated, Welsh, New Yorker, New Englander, Georgian, Texan, Australian, New Zealander and "standard American" speech. Sometimes one gets in situations when it is hard work at first to understand what the speaker is saying because of the strange dialect he uses, and it takes time to notice the differences and establish correspondences: to "decode" and understand the spoken language. We do this subconsciously and call it "getting used to the way" the other persons speaks. Now contemplate for a moment that these dozen different pronunciations are written exactly the same way, and the fluent reader in each dialect reads letter patterns unhesitatingly to produce the appropriate sounds, which for him is "the natural way" to pronounce the words. When one considers these facts, one has to reach the conclusion that mapping is the only workable system for English writing, and it should be welcomed, lauded and explicitly taught rather than ignored, or disparaged, or cursed.

English orthology went through several phases of development during which the spelling rules changed, but they are still surprisingly consistent as far as letter clusters standing for sound clusters is concerned. As Fries puts it in "Linguistics and Reading," "for English spelling we must emphasize the fact that throughout its history single letters have never matched single sound features. There have always been patterns of letter sequences which represented (but not necessarily duplicated) those patterns of contrastive differences of sound that identify word-patterns. In other words, in English as spoken, the lexical units, 'words,' are identified by word-patterns consisting of 'unique' sequences of phonemes. In English as written, these word-patterns (identified by unique sequences of phonemes) are represented by spelling-patterns consisting of sequences of letters. The spelling-patterns represent the word-patterns; but the individual letters in the sequence of a spelling pattern do not necessarily duplicate the sequence of the phonemes in the word-pattern for which the spelling-patterns stand."

I think this needs to be read several times to comprehend, but it makes excellent sense once it is understood.

It bears to repeat in paraphrasing: Although the English language is not phonetic in writing, it uses an alphabetic writing system. Additionally, groups of sounds of spoken English map with great regularity onto groups of letters of written English. The reverse is equally true, namely groups of letters of written English map with great regularity onto groups of sounds of spoken English. This last statement has great importance when it comes to learning to read, as we will see later.

Chapter 5

Reading and Learning to Read

Now that we have refreshed or expanded our understanding of what is thinking, communication, language, and learning, how writing came about and what are the peculiarities of writing in the English language, we can start our discussion of reading and how people learn to read.

What is reading

I mentioned at the beginning of this book the interesting discussion I had with the first reading professional I've ever encountered regarding the definition of reading. She flatly stated that "Reading is understanding." My question to her was: Does this mean then that we can't read when we peruse a text and do not understand what it says? Her answer was that reading is comprehending, and if we do not comprehend we do not read.

Let's see how this classification of readers and non-readers works in practice. I put together a selection of excerpts from various printed materials to test her idea. I assume those who have gotten this far in reading this book consider themselves readers, therefore they should understand perfectly all of the selections, i.e. by her definition be able to read them.

> Carol studied the woman. She was as imitative as a glass diamond. She was the more rustic in her effort to appear urban. She wore a severe high-collared blouse with a row of small black buttons, which was becoming to her low-breasted slim neatness, but her skirt was hysterically checkered, her cheeks were too highly rouged, her lips too sharply penciled. She was magnificent a specimen of the illiterate divorcée of forty made up to look thirty, clever, and alluring. (Sinclair Lewis: Main Street)

> The fact that an electric charge, that is, an excess deficiency of electrons, resides only on the surface of a conductor is seen to be a consequence of Gauss' law. Although we have given no proof of Gauss' law, it should be emphasized that the proof rests upon the inverse square law of attraction or repulsion among electric charges. As a matter of fact, starting with the contention that a charge resides on the surface, it is possible to derive the inverse square law. If like charges repelled one another with a force inversely proportional, say, to the cube of the separation, the charges on conductors would not be found on the surface only. (Francis W. Sears: College Physics — Addison-Wesley Publishing Company, 1960)

> Ef you doan care 'bout how folks talks 'bout dis fambly, Ah does," she rumbled. "Ah ain' gwine stand by an' have eve'body at de pahty sayin' how you ain' fotched up right. Ah has tole you an' tole you dat you kin allus tell a lady by dat she eat lak a bird. An' Ah ain' aimin' ter have you go ter Mist' Wilkes' an' eat lak a fe'el han' an' gobble lak a hawg." (Margaret Mitchell: Gone with the Wind)

> Prazosin hydrochloride may cause syncope with sudden loss of consciousness. In most cases this is believed to be due to an excessive postural hypotensive effect, although occasionally the syncopal episode has been preceded by a bout of severe tachycardia with heart rates of 120-160 beats per minute. Syncopal episodes usually occurred within 30 to 90 minutes of the initial dose of the drug; occasionally they have been reported in association with rapid dosage increases or the introduction of another anti-hypertensive drug into the regimen of a patient taking high doses of prazosin. (Prazosin drug information — Mylan Pharmaceuticals Inc.)

> Neither the principal nor the income of the Trust shall be liable for the debts of a Beneficiary. Except as otherwise expressly provided in this Agreement, no beneficiary of any trust shall have any right, power or authority to alienate, encumber or hypothecate his or her interest in the principal or income of this Trust in any manner, nor shall the interests of any Beneficiary be subject to the claims of his or her creditors or liable to attachment, execution or other process of law. The limitations herein shall not restrict the exercise of any power of appointment of the right to disclaim. (From a Revocable Living Trust Agreement)

> Neutrally-buoyant plumes overlying high-temperature "Black Smoker" hydrothermal fields exhibit pronounced enrichments compared to ambient sea water in a range of characteristic tracers. Consequently, analysis of water-column samples can be used as a powerful tool to prospect for the presence of hydrothermal activity in previously unexplored sections of mid-ocean ridge crest. A limitation of these approaches is that they have typically relied upon collection of discrete samples for shore-based or ship-board analysis, yielding only limited data coverage. More recently, optical sensors — both nephelometers which record light-scattering and transmissometers which record light obscuration — have been utilized widely to prospect for and investigate hydrothermal plumes along various sections of the global mid-ocean ridge system. (C. R. German and L. M. Parson: Hydrothermal Exploration at the Azores Triple-Junction — Earth and Planetary Science Letters, 1995)

> Now sleep yslaked hath the rout;
> No din but snores the house about,
> Made louder by the o'er-fed breast
> Of this most pompous marriage-feast.
> The cat, with eyne of burning coal,
> Now crouches for the mouse's hole;
> And crickets sing at the oven's mouth,
> E'er the blither for their drouth.
> Hymen hath brought the bride to bed,
> Where, by the loss of maidenhead,
> A babe is moulded. Be attent,
> And time that is so briefly spent
> With your fine fancies quaintly eche:
> What's dumb in show I'll plain with speech.
> (Shakespeare: Pericles)

Well, how are we doing? Was everything perfectly understood? If not, something may be amiss with the definition of reading as being the equivalent of understanding.

Perhaps it is in order to examine the subject closer.

Read.

Four letters: two vowels sandwiched between two consonants, making a word. The dilemma of the users of the English language is summed up in this single word. Consider this sentence: *You must read the article I read about the red reed.* Here the word "read" is uttered in two different ways — first the same as the plant "reed" and then as the color "red" — depending on the sense of the word in the statement. Those practical and clever Greeks were wasting time when they invented alphabetic writing with vowels and all, which is supposed to be the blessing of humanity, for it matches written symbols to spoken sounds so they can be used to easily record our utterances for the benefit of those not present, whether living or yet to be born.

But there is more to it than mere pronunciation, because once we figured out whether it is "reed" or "red," we still don't precisely know what the blessed word means, unless it is in a sentence, like in the example above. Because if the word is in a different sentence, such as: *The outside thermometer reads 95 degrees*, it means that the instrument *indicates* it is mighty hot out there.

As a matter of fact, the word "read," like most of the commonest words in the English language, has a multitude of meanings.

For example, Webster's New World Dictionary, Third College Edition of 1984, lists 15 meanings. The American Heritage Dictionary, New College Edition of 1978, lists 12 meanings. The Random House Dictionary of the English Language of 1967, gives 17 meanings which, for the fun of it, are shown below:

1. to peruse or apprehend the meaning of (something written, printed, etc.) /to *read* a book/
2. to utter aloud or render in speech (something written, printed, etc.) /to *read* a story for children/
3. to have such knowledge of (a language) as to be able to understand things written in it
4. to apprehend the meanings of (signs, characters, etc.)otherwise than with the eyes, as by means of the fingers: to *read* Braille
5. to make out the significance of by scrutiny or observation /he *read* the dark sky as a threat of storm/
6. to foresee, foretell, or predict /to *read* a person's future in tea leaves/
7. to make out the character, motivations, desires, etc. of (a person or persons), as by interpretation of outward signs
8. to infer (something not expressed or directly indicated) from what is read or considered /he *read* an underlying sarcasm into her letter/
9. to adopt or give as a reading in a particular passage /for "one thousand" another version *reads* "ten thousand"/
10. to register or indicate, as a thermometer, clock, etc.
11. (in a computer) to obtain information from an external unit
12. to study as by perusing books /*read* law/
13. to learn by or as if by perusal /to *read* a person's thoughts/
14. to bring, put, etc. by reading /to *read* oneself to sleep/
15. to give one (a lecture or lesson) by way of admonition
16. to discover or explain the meaning of (a dream or riddle)
17. to oust publicly (followed by out) /he was *read* out of the association/

With all these meanings to the word "read," it is no wonder that scholars, educators and reading specialists have been arguing for about a century and a half what "reading" means when it comes to the activity of examining black symbols on a sheet of paper and trying to get some sense out of them. Some claim that reading is the getting of meaning out of the written text as per definition No. 1 above, others that it is simply the decoding of written symbols to render language, whether uttered aloud or not, as in definition No. 2 above.

Let's see how the activity of reading is defined.

The Encyclopedia Britannica (1971) flatly states, "Contrary to certain views, pronunciation of words is not reading."

The 1995 Encarta Multimedia Encyclopedia advises, "Reading is an activity characterized by the translation of symbols into words and sentences that have meaning to the individual. The ultimate goal of reading is to be able to understand written material, evaluate it and use it for one's needs."

William S. Gray in "Reading in the High School and College" states, "Reading is conceived today as a complex activity of four dimensions: the perception of words, a clear grasp of meaning, thoughtful reaction, and integration. All four steps are essential in varying combinations if adults are to secure through reading an adequate understanding of the conflicting issues that current life presents, to choose wisely between alternatives, to find valid solutions to challenging personal and social problems faced, and to develop richer and more stable personalities."

Another definition of reading is given in "Teaching Elementary Reading" by M. A. Tinker and C. M. McCullough: "Reading involves the identification and recognition of printed or written symbols which serve as stimuli for the recall of meanings built up through past experience, and further the construction of new meanings through the reader's manipulation of relevant concepts already in his possession. The resulting meanings are organized into thought processes according to the purposes that are operating in the reader. Such an organization results in modifications of thought, and perhaps of behavior, or it may even lead to radically new behavior which takes place in the personal or social development of the individual."

As we see, things can get rather complicated when explained by experts. The last two definitions are rather broad, one must say. They may well be true for "reading" when it is done by scientists and scholars, but most people in everyday reading are satisfied to find out how their football team is doing and pass up the remolding of the world in some different pattern. Also, do these definitions mean that all such activities are expected from a six-year-old as he tries to unlock the secrets of a printed page?

Strange as it may seem, actually both of the first dictionary definitions are right. Even the above quoted experts are right, depending on the degree of advancement in reading prowess we have under consideration. For the person whose eyes race across the pages of an exciting mystery novel, letters and words and sentences go unnoticed. He is absorbed in the story and gets the booze straight out of the bottle. For the professional who is reading a book with the contents to be well understood and integrated into his schema of the subject, reading is an infinitely more complex process involving many levels of mental activity. For the first grader confronted with a book that contains pretty color pictures and rows of strange black figures that he must make sense of, it is most definitely decoding. If you don't believe this, read the following: Θε δσχ ρυνσ. Chances are that you can't. It is a short sentence, reading: *The dog runs.* The only problem is that it is written in the letters of the Greek alphabet. In order to understand the meaning of a written text, it first must be decoded.

Two modes of reading

If we want to discuss the subject sensibly, we must differentiate between the first and second dictionary meaning of the word "read." The first one ("To peruse or apprehend the meaning of") can be called *Fluent Reading,* whereas the second ("To render in speech") can be called *Mediated Reading*.

Fluent reading can be defined as extracting communication by a sender remote in time and/or space through the visual sensing of symbols rendered in a known surface structure that is coupled to a known underlying structure, and converting the sensed information into deep structure, thus achieving comprehension.

Mediated reading, on the other hand, can be defined as converting visual surface structure into auditory surface structure so as to enable the processing of information via customary channels through underlying structure to deep structure, thus achieving comprehension.

Admittedly, these two definitions are quite a mouthful, phrased in a lingo so that common folks have a hard time understanding them, therefore they must be regarded as extremely learned and clever. Surprisingly, though, they make a great deal of sense once they are put into kitchen English, even though the translation takes a bit of time.

As we will see, while fluent reading goes straight for the meaning, mediated reading is an intermediate step on the way from the writing on a sheet of paper to understanding what is the writing all about. This is quite unfortunate for the beginning reader, since the build of our brain, as we understand it, is such that its pipelines get clogged up rather quickly if information does not flow

through at a reasonable speed. The inexperienced reader literally forgets what is the meaning of one word while he puzzles over what the next word may be, thus he loses his opportunity to get the meaning of the entire sentence, unless he goes back and reads the sentence again at an appropriate rate of speed. He may be able to read the words in the sense that he utters them, but he remains ignorant of their meaning and becomes what is called in the teaching trade "a word caller." He is in the situation of a person who cannot see the forest because the trees stand in the way.

In the chapter about communication we discussed the model of idea transfer as consisting of three layers: the *deep structure*, which is the as yet unformulated thought, the *underlying structure*, which is the formulation of thought in a linguistic framework, and the *surface structure*, which is the expression of the linguistic framework, the physical means of communication.

Charles C. Fries in "Linguistics and Reading" discusses the act of reading (the emphases in the text are his). He says that for a person "the process of receiving a message through 'talk' is a responding to the language signals of his native language code — language signals that make their contact with his nervous system by *sound vibrations through the ear.* The process of getting the same message (the same meanings) by 'reading' is a responding to *the same set of language signals* of the same language code, but language signals that make their contact with his nervous system by *light vibrations through the eye.* The message is the same; the language code is the same; *the language signals are the same* for both 'talking' and 'reading.'" This is to say that the deep structure is the same, the underlying structure is the same, but the surface structures are different. "The only essential difference here is the fact that in 'talk' the means of connection to the human nervous system consists of patterns of sound waves stimulating nerves in the ear, but in 'reading' the means of connection to the human nervous system consists of patterns of graphic shapes stimulating the nerves in the eye. All 'writing' is the substituting of patterns of graphic shapes to represent the language signals of a code for the patterns of sound waves that have been learned as representing the same language signals. One can 'read,' insofar as he 'can respond' to the language signals represented by patterns of graphic shapes as fully as he has already learned to respond to the same language signals of his code represented by patterns of auditory shapes." Although Fries does not say so, he is quite obviously discussing persons who read without conscious effort, namely fluent readers.

The process of comprehension is understood to consist of two steps. The sensory impulses, be they auditory or visual, are transmitted to the short term memory of the brain in "packages" of information, which may be sounds or letters, words, or phrases. The short term memory can retain only five or six items as they come in sequentially, and after about no more than half a second retention the "packages" are processed for meaning before the information proceeds to the long term memory area of the brain to become part of an existing schema, or to form a new schema. It is due to this process that most often we paraphrase the received communication if it is understood and internalized, because we do not memorize the verbatim message, but rather only the sense of it.

When it comes to the act of reading, the fluent reader goes directly from the surface structure of writing (by virtue of instantly recognizing graphic symbols) through the underlying structure of language to the deep structure of meaning, so in that sense reading equals comprehension. However, for the mediated, or beginner, reader there is an additional step in-between, and that is the conversion of the unfamiliar surface structure of a written text into the familiar surface structure of a spoken language, and then proceeding from this second surface structure through the underlying structure of language to the deep structure of meaning. In both cases the intervening underlying structure, namely the peculiarities of the language, are handled quite automatically by the brain.

Of course, the ultimate purpose of reading is comprehension — why else would one read?

Reading is not a simple process by any means. Consider the following sentence: "*You can bank on the bank at the river bank*." What is the meaning of the word "bank?" In the sequence of

appearance in the sentence it means "count on," "financial institute," "dry land next to flowing water." How do we know which meaning to use and where?

Reading is a feed-back process

Dianne Lapp and James Flood in "Teaching Reading to Every Child" state that comprehension is the ultimate purpose of reading. They point out that there are two concepts of the reading process. One postulates that the reader first reads the words and from the words constructs the meaning of the sentence. This is the so-called *bottom-up model*, because it builds up the meaning on the foundation of the words. The other theory claims that from the first words of a sentence the reader assumes a meaning and then verifies the assumed meaning on the basis of the rest of the sentence. This is called the *top-down model*, because this is the opposite of the first model. Frank Smith is probably the first advocate of the top-down model of reading, saying that the reader must comprehend the sentence before he can correctly assess the meaning of the words. The following sentence is given as an example: "We should *read* the *minute* print on the *permit*," where the meaning of the italicized words can be ascertained only on the basis of the meaning of the sentence.

The same man, Frank Smith in "Understanding Reading" explains that reading (meaning fluent reading) is a reciprocal activity involving the eyes, which do the sensing of the symbols for forwarding images to the brain, and the brain, which receives the messages for processing. But the brain also sends out messages to the eyes about what to look for. (This search command can be quite strong to the extent of making us blind to other things. I am sure everybody had experiences like the following I had. On one occasion I was looking for a measuring tape I wanted to take along on a shopping errand. In my mind I had an image of the tape having a yellow label on the side, when in fact it had a red label. I was looking for it on the work bench and could not find it for my life. When my wife joined me in the search, she picked up the tape with the red label from the middle of the bench. All along it was in plain view, yet I did not see it because I was looking for a tape with a yellow label, which I kept in the drawer of my desk in my office.) For the sensing phase of reading Smith makes the following three observations:

1. The reader has to be fast — the information that he gets from the page is not available to him continuously, but is delivered in "packages of visual image" about four times a second to a sensory store where it stays for not much more than half a second.
2. The reader must be selective — no more than four or five items can get through the short term memory, so he must choose among the information available which to pick up and which not.
3. The reader must be able to use prior knowledge in order to process information in larger and larger sensory units. Reading letter by letter can get a word of no more than 5 letters to his cognitive processing center. (Which is the reason an inexperienced or beginner reader has to practice letter-by-letter reading on short words until he develops the ability to recognize letter patterns, which then become the minimal units of sensing.) Once the reader is up to word-length sensing units, he can go after phrase meaning, because enough material gets to the brain to make sense of them. When he gets up to sensing phrases, he becomes an efficient reader, a fluent reader. In this stage of reading ability, the sensing units become packages of meaning, which are the basic sensory units of fluent reading.

When one knows the language and follows the meaning of the text, the brain tells the eye what to fixate on, because from the meaning, the knowledge of grammar, and the knowledge of the looks

of whole words and phrases, we anticipate what comes up for reading in the text and look there for verification of the expectation as much as for finding out what the text tells us. This is why in reading on an unfamiliar subject we often slow down and go in smaller sensing units, and have to go back and re-read sections to get full understanding of meaning.

Smith goes on to say that word identification has three schools: whole-word, letter-by-letter and letter cluster. The fact that the average fluent reader can recognize over 50,000 words by sight (immediate recognition), does not mean that he has the optical image of all those words engraved in his brain, as the whole-word advocates postulate. Just consider the word "cat." It is easy to see that pattern matching must be more than 50,000 patterns for the 50,000 words, for *cat* and **CAT** look quite different as graphic features, yet we have no problem recognizing the two words for what they are. Even if we encounter **cat** or *Cat* we can read the words. Whole-word recognition does not account for this kind of reading, in other words, the brain does not match the visual pattern on the paper against one in the brain.

Here we need to introduce the concept of *allogram*. Allograms are graphic symbols which are different in appearance and still stand for the same linguistic unit. The following symbols all stand for the seventh letter of the English alphabet:

G g **G** **g** G g *G* *g* **G** **g** *G* *g*

We read the whole dozen of these symbols as the letter **g** without realizing that our eyes see entirely different graphic patterns. We are used to these drastic differences in the graphic configuration of letters to the point of totally ignoring them. Most of the time we are completely unaware of the multitude of shapes and sizes of the 26 letters of the alphabet we encounter daily. To prove the point take a copy of your favorite magazine and look through the first ten pages of text and advertisements with the eyes of a typographer and consciously look at the shapes, styles and designs of the letters you encounter. Strangely, these differences represent no hindrance in our ability to identify words.

Smith says that "the fact that the three traditional theories of word recognition continue to enjoy wide and uncritical acceptance obviously implies that they rest on a fairly solid foundation, despite shortcomings. No one can conclusively prove them wrong. Each approach, however, has inadequacies that are partly met by an opposing view, which would suggest that they are not mutually exclusive, and that no one of them has any real claim to be the closest representation of the truth. In their place we need to find a theory of the reading process that will not only be incompatible with any of the data, but will also offer an explanation of inadequate aspects of the three traditional views. In short, any serious attempt to understand reading must be able to explain why it might sometimes appear that words are identified as wholes, and other times through the identification of component letters or groups of letters."

Smith proposes a *feature-analytic* model of word recognition, which involves the position of features (letters) within a sequence (word). If we take five-letter words and assume that all the letters of the alphabet can be used to make them up, over 11 million five-letter words should exist, against perhaps 20,000 that actually do. The reason for this is that in the English language certain letter combinations and sequences do not exist. (For example, something like "qexlp" would be quite unusual, while "eamos" would be a more likely word.) In reading "there are two sources of information available for the identification of words: one is *featural*, the visual information available to the eye, and the other is sequential, our knowledge of the way words are constructed. When there is an overlap between the featural and sequential information — when both sources can be used to eliminate some of the same alternatives — redundancy exists. And because redundancy ex-

ists, the skilled reader can trade off between the two sources — he can make identifications on less featural information because he can make use of his knowledge of sequential constraints." This relates only to word recognition, the contextual element that provides further redundancy in reading for meaning has not yet entered the picture.

Immediate word identification occurs when the fluent reader encounters a word and recognizes it. *Mediated word identification* occurs when any reader encounters an unfamiliar word which needs to be identified. The means of mediated word identification can be phonic method or letter group method; however, if the word is unknown to the reader, its meaning must be found out either from the context, or by asking somebody who knows the meaning of the word, or else by looking it up in a dictionary. Phonics is essentially a teaching technique, where the letters making up a word are related to sounds in the spoken language. It can also be used in mediated word recognition. But even when the word is identified, many times the proper pronunciation and meaning cannot be determined without the context of the word. For example, consider the sentence, "*Permit* me to look at your *permit*."

Smith's view regarding the top-down process of cognition makes sense. How else could we otherwise anticipate, in listening to somebody talk, certain words that should be used? Sometimes we even feed words to the speaker when we sense hesitation. Nevertheless, while reading, comprehension cannot even begin before the words in the text are accurately decoded. Smith is right in his example, but for one thing, relatively few sentences contain such ambiguities, and secondly, the absolutely exact decoding of words must be achieved before such fine analysis of meaning can even begin.

<u>The mind of the reader works on two levels</u>

In discussing how to derive meaning when reading, we need to introduce a new concept, *metacognition*. Metacognition is a thought process that takes place on a secondary level while a person is reading. It is a subconscious monitoring activity that guides and aids the comprehension functions of the brain. It becomes active when something interferes with the process of gathering meaning from the text being read, as in the case of encountering an unknown or misspelled word, an unclear semantic structure, or an ambiguous feature of the text. Metacognition is the trigger that makes us stop and ask: What? Do I understand this correctly? It also monitors whether the text being read measures up to the reader's expectations in being germane, interesting or informative, or whether the reader has the prerequisite knowledge to understand the meaning.

Metacognition is an extremely important component of productive reading, even if the reading is for purely entertainment purpose. Cognition is the function of understanding the meaning of the text. Metacognition is the little inner voice that makes one slam down an irritating book, that makes one agree or disagree with a postulate in a text, or spot a misspelled word or a word in the wrong application of meaning. Metacognition makes one go back to re-read a phrase to ensure it is clearly understood, or to stop and ponder an important point to make sure what is its meaning and to remember it as a step to further one's understanding.

When a reader needs to spend considerable energy and effort in mediated reading, his full mental capacity is kept busy with that complex activity, and little reserve is left for the cognitive and metacognitive activities of the brain. It follows then, that the prerequisite of vigorous metacognition is facility in fluent reading, metacognition being closely connected with effective winnowing of meaning from text. This is the most important reason to develop the mechanics of reading to the point where the reading of words is an effortless exercise before emphasis is placed upon getting meaning out of sentence structures. This statement is not to be misunderstood for advocating that meaning should be neglected until all words are within the instant-recognition reading vocabulary of the reader. It only means that first the reading of letter patterns should be practiced until a suffi-

cient level of proficiency is reached in the mechanics of reading, i.e. in decoding, before sentences composed of the familiar words are presented to the beginner reader for extracting meaning.

The process of fluent reading can be summarized then as follows: we instantly recognize patterns of allograms as words, we assume from the material we read the meaning of the sentence we are in the process of reading, and we verify this assumed meaning on the basis of the words we subsequently read. If the initial assumption is incorrect, we make the necessary correction based on the evidence. Our metacognitive process checks whether we know the meaning of the words we are reading. If we do not, and the meaning cannot be deduced from the context, we stop and find it out in some way.

Reading in other languages

Up to this point it seems that we have talked about reading in the English language only. To look at the rest of the world, perhaps we should defer to William S. Gray and his book, "The Teaching of Reading and Writing," which is the 1969 report on several studies conducted under his leadership for UNESCO.

In studying the process of reading in various alphabetic writing systems, it was observed that people read sometimes by words and phrases, sometimes by groups of letters, and at other times by individual letters, according to their familiarity with the material, its difficulty and the skill or efficiency of the reader. The good reader is intent on getting the meaning from the text. At each fixation he recognizes a word or a group of words, generally by their unique aggregate features, and proceeds along the line rapidly to extract the meaning. Gray comments, this finding "also casts doubt on the validity of teaching methods which focused attention on skill in word recognition." He fails to note, though, that these habits relate to experienced fluent readers. None of the discussed studies focused on learning to read, or on the habits of beginner readers.

The various studies he reported on in the book also found that the number and duration of fixations are approximately the same in all languages among readers of comparable skill. This was true even when reading in Chinese and Japanese were compared to reading in alphabetic languages. Evidence has been given in six languages: French, German, English, Chinese, Japanese and Spanish, that although the languages and the writing systems differ radically, the basic process of reading is essentially the same. It appears, therefore, that fluent readers have the same habits, they read faster silently than aloud, and there are great variations in the silent reading speed of individuals.

Another study encompassing Arabic, Burmese, Chinese, English, French, Hebrew, Hindi, Japanese, Korean, Navaho, Spanish, Thai, Urdu and Yoruba languages compared the reading habits (fixations per word) in both silent and oral reading, and tested the comprehension of the readers. The results of the studies demonstrated that the general nature of the act of reading is essentially the same among fluent readers in any language. Also, there is no changing of reading habits when a fluent reader in one language learns to read in another language. In this latter group of readers the only causal break in the normal reading process was the inability to understand a semantic unit as the eye traversed the left-to-right line. As a rule, two or three words are recognized at one fixation. From time to time the experienced reader makes regressive eye movements to recognize unfamiliar words or to verify meaning.

Reading habits, once the reader reaches a certain proficiency through sufficient practice, seem to be much similar, if not uniform, regardless of language or writing system. Perhaps, similarly to speaking, humans have a commonality in their facility in using their brain to decode and get the meaning of graphic symbols that reflect language.

Still, the basic mechanics of reading is the rendering of written symbols into spoken language, which in reality is the actual means of communication, because it predates writing and reading. Before the process of comprehension of a written text can begin, visual symbols need to be converted

to language. The reader must be able to decode the graphic symbols to derive meaningful linguistic units, in short he must master the second meaning of the word "read," which is to render the writing in speech. Conversely, before the underlying structure of language can be transposed into the surface structure of writing, the communicator must know the conventions of transposing verbal communication into graphic communication, in short he has to know how to write.

As we have seen, during reading data passes through the short term memory which has a limited capacity. It cannot handle more than five or six "packages" of information, regardless of the size of each "package." These packages may be letters, groups of letters, words or phrases, depending on the abilities of the reader in recognizing smaller or greater groups of graphic characters. The greater are the packages, the more efficient is the process of winnowing meaning from the symbols. For this reason it is imperative that the reader possess the ability of instant recognition of large groups of symbols. How does such ability come about? The same way we learn other complex activities.

Doing and learning to do

Doing and learning to do something are two entirely different activities. Learning to dance, for example, which many of us struggled through at one time in our lives, involves a series of rather complex steps. When I was at the awkward age of having to learn to dance, the tango, rumba and samba were the rage. Swing came later. In the course of the learning process, first of all, we had to learn to discern the rhythm of the music and to respond to it, namely that certain actions are to be initiated or performed at certain accents in the music. Next came the steps. This involved observing an experienced dancer perform a series of motions, which then were broken down into elementary moves, such as stepping out with the right foot, stepping next to it with the left, taking a step with the right then with the left in one place, then taking a step back with the right, stepping next to it with the left, taking a step in place with the right then the left foot, and so on.

These steps were replicated slowly and awkwardly and repeated many times over and over while counting the rhythm, until we could perform the series of movements without paying attention to the sequence of the elementary motions. Then came the performance of the steps with music, then with a partner. Here we had to be careful how to hold the partner, how not to step on the partner's foot, we had to maintain the proper body posture, and to wipe that stiff, terror stricken expression off our face.

With sufficient practice and the proper incentive, namely the opportunity to hold a member of the opposite sex close to us, the bedeviling series of arbitrary motions fused and changed into the enjoyable activity of dance, which is performed without any attention paid to its mechanics, and which allows the practitioner to show off his suaveness and wit while gracefully gliding over the dance floor with his partner on his arm. When one reaches this stage of being able to dance, one does not remember any longer the chagrin of the learning process and its joyless tediousness.

The same story can be told of the learning process on one hand, and of the performance on the other hand, of many other activities. Take for example playing a musical instrument, or driving an automobile, or playing a new card game where, although the faces of the cards are known, the rules must be learned and applied, the turn of the cards need to be followed and remembered, and strategies need to be formulated, kept in mind and executed.

All of these learning experiences involve generally the same process. The activity is broken down into its elements, the elements are learned separately then in combination or in sequence, the activity is then repeated enough times to allow its performance without paying conscious attention to the process, so that attention can be paid then to an underlying interest, such as the enjoyment of the card game, the expression of feelings in a musical composition, or the avoidance of collisions with other vehicles using the road.

Other examples of the learning process where the learner goes from initial step-by-step slow performance of sequential elements to a fluent activity in which the elements are linked into one continuum in a seemingly effortless process:

- riding a bicycle
- swimming
- typing
- short hand writing
- gymnastic exercises
- reading sheet music

With reading the learning process is the same. The mechanics of converting the graphic symbols into meaningful units of language needs to be made automatic to the point of performing this part of the reading process without any conscious effort. Once this level of skill in converting visual data into language is reached, the second and more important function of reading can commence, namely, getting meaning from the written text. This does not mean that reading for meaning, i.e. fluent reading, must be postponed until all of the letters are very well known and all letter groups are fully associated with phoneme groups for efficient decoding of all phonic combinations of words.

Metalanguage

In order to learn to read, the students need to learn a number of new concepts which come under the heading of *metalanguage*. Even though the term sounds extremely scientific and perhaps a bit frightening, the word metalinguistic means matters related to the nuts and bolts of the language. For example, the pupils need to know that spoken words are strings of sounds, that sounds can be classified as vowels and consonants. They also need to be able to distinguish and manipulate speech sounds, and to recognize the sounds that make up words. They need to know that in general, alphabetical writing is when letters are used to represent sounds in spoken language, consequently that written words consist of strings of letters, in most writing systems written consecutively from left to right. They need to know what is a word and what is a sentence. Another metalinguistic concept is that in writing there is a space between consecutive words. Thoughts are expressed in sentences, which contain punctuation marks. They need to know that the function of the punctuation marks is to define the end of the sentence, and to give an indication of stress, pause and accent to clarify meaning, and as an aid in converting the written text to spoken language.

In the case of learning to read in the English language, pupils need to learn that English writing is based on the use of the Latin alphabet, and the English alphabet consists of 26 letters. These letters have two basic formats, the capital letters and the lower case letters. Also, each letter can have many different shapes and styles, all of which are equivalent in their linguistic function. (The allograms mentioned above.) Later on they will learn metalinguistic expressions and definitions relating to linguistic aspects of the language. *Phrase, verb, declarative sentence, adjective, preposition, conjugate, etc.* are all part of metalanguage.

Learning to read

Charles C. Fries in "Linguistics and Reading" writes, "The process of learning to read in one's native language is *the process of transfer* from the auditory signs for language signals, which the child already learned, to the new visual signs for the same signals. This process of transfer is not the learning of the language code or of a new language code; it is not learning of a different set of language signals. It is not the learning of new 'words,' or of new grammatical structures, or of new meanings. These are all matters of the language signals which he has on the whole already learned so well that he is not conscious of their use. The child will continue, as he grows in experience, to develop his language capacity, especially in the variety and number of the lexical signals he can control. But this continued growth in meanings and in language signals must not take attention and effort away from the main business of the 'transfer stage' of learning to read … The 'transfer stage' is not the time to push the development of additional language mastery … The 'transfer stage' will have much less confusion for the pupil if the body of language meanings and language signals used is limited very strictly to those already within his linguistic experience."

Learning to read in an alphabetic writing system involves the acquisition of multiple skills. First, the graphemes (letters) of the writing system must be learned to the point of effortless recognition. Second, the grapheme-phoneme correspondences must be learned. Third, the skill of blending phonemes must be acquired to reproduce spoken words of the language, which are presumably known to the reader. Fourth, the identified words must be placed in the context of the material in order to determine their meanings. And fifth, on the basis of the word meanings and their contextual relations, i.e. the underlying structure of the message, the deep structure must be reconstituted. There is a possible sixth step in the reading process, which is the analysis and critical evaluation of the deep structure, although this can be considered an intellectual activity that is taking place simultaneously with the reading activity.

From all of these skills, the first one must be acquired by associative learning. The letters must to be learned, there are no two ways about it. There is no such thing that a child can find out intuitively what the letters are, although it may appear to be that way. When the child is interested in written material and a letter becomes a familiar graphic symbol, he will ask what it is. The parent names the letter. Even though this is a spontaneous learning process, it is still an associative one. Once the letters are known, the rest of the process can go either way, or by a combination of cognitive and associative learning. Generally, the process starts by associative learning and, if the teacher and pupil are lucky, it continues by cognitive learning, which is then quite rapid and rewarding in producing good results.

Kenneth S. Goodman in "Language & Literacy" writes, "It is assumed by some that readers engage in a process of recoding graphic input as aural input and then decoding. While this may in fact take place in beginning stages of the acquisition of literacy among some learners, it is not necessary or characteristic of proficient reading. An analogy can be found in the early stages of learning a second language. The learner may be going through a process of continuous translation into his first language before he decodes. But eventually he must be able to derive meaning directly from the second language with no recourse to the first," which really means, thinking in the second language.

On the same subject Frank Smith states, "In a sense there is no easy way for a child to learn to read, just as there is no easy way to learn to swim or ride a bicycle; none of these learning experiences is as easy as actually swimming or cycling — or reading — after the skill is learned. Mediated word recognition is not as easy as instant recognition, yet the beginner has to identify many more of his words by mediating methods than does the fluent reader."

"When Children Don't Learn" is an insightful book by Diane McGuinnes. In discussing reading, she says, "Reading is a complex set of operations involving the visual and auditory senses, knowledge of a spoken language, memory, and motor skills. At each level, from sensory to linguistic to motor, there are a series of transformations, or recodings carried out by the brain, ranging from the simple to the complex. At the most basic level, a child has to remember the visual appearance of each letter. When phonemes are combined into syllables, short-term memory comes into play. Short-term memory allows us to remember a series of items in the correct temporal sequence, such as distinguishing 'fa-mi-ly' from 'fa-ly-mi.' Short-term memory deteriorates rapidly over time and is particularly disrupted by interference from any distracting stimulation. This means that the speed at which each individual item can be decoded is extremely important."

Once words are decoded fluently, the reader needs to call upon his knowledge of the language, to anticipate the structure of sentences on the basis of grammatical rules and to determine the meaning from the context of the story. The ability to utter grammatically correct sentences and to comprehend the meaning of spoken language is essential to this process, even though it is reading related. Therefore it is natural to expect that in learning to read, difficulties may arise many areas. "What is surprising is," she says, "that it has taken researchers over eighty years since Montessori's pioneering efforts at the turn of the century to be able to specify the reading process in all its complexity and to devise tests to pinpoint adequately each child's particular deficiencies."

"It is now generally acknowledged," she continues, "that the two earliest stages involved in the reading process, visual discrimination and learning letter names, seldom cause problems in learning to read. The major stumbling block occurs at the stage where phonemes must be combined into syllables. Phonemic decoding and encoding is the central problem in the mastery of any phonetic writing system. For a long time it was believed that students of English had a far worse time than students of languages with fewer complex vowel sounds, such as Italian, Spanish, and German. Although students of English might need to learn a slightly larger set of rules than is necessary in other languages, adopting a system based on phonetic and orthographic rules is far more efficient than memorizing each word separately. In brief, current studies comparing children with and with-

out reading disorders have demonstrated that there are at least two major principles involved: success in learning to read and write is highly dependent on linguistic competence, especially analysis of speech sounds, fluent production, and verbal comprehension, and second, on short-term memory for temporal sequences. These two major dimensions are comprised of six categories of skills: (1) phoneme/syllable decoding, (2) phonological coding, (3) naming fluency, (4) short-term memory, (5) fine-motor fluency, and (6) language comprehension."

Contrary to the opinion of many experts on reading and learning to read, mixing reading and comprehension at the stage of learning the mechanics of reading in an alphabetic language divides the attention of the student. The first item in the order of priorities is the decoding of the written material into something that can be processed for meaning. The human brain evolved such over the millennia that it seeks sense and meaning in the received information. It wants to organize information into schemata, which is the format of information storage. Once mediated reading reaches a sufficient degree of proficiency, looking for comprehension will automatically follow. Care must be taken, though, that the vocabulary of the practice reading material should match the receptive vocabulary of the student but not be limited to an artificially small selection of words, because if such is the case, the exercise quickly becomes an utter bore, and therefore loses effectiveness. Also, being too narrow, such exercise does not provide enough practice for the development of effective instant recognition of words.

Before effective comprehension and vocabulary building can commence, the mechanics of reading needs to be mastered. The learning of correct spelling of new words comes automatically during the vocabulary building period of the reader, provided that he is trained in alphabetic reading and not logogram-based reading. Alphabetic type reading, by the way, is not unique to reading text. Students of music also learn the individual symbols of the sheet music at the beginning of their studies. It is only later, when they have had acquired sufficient experience and proficiency that they read phrases and chords instead of individual notes. It is true that practiced readers read entire words and phrases at each eye fixation, but this ability develops only with practice, due to the tendency of the brain to simplify tasks. But to try to short-cut the natural process of progressing from reading letters to reading syllables to reading words by forcing the students to read alphabetically written words as if they were logograms negates the basic concept and convenience of the alphabetical writing system.

Although children getting into the first grade are believed to possess large expressive and receptive vocabularies (the first may be as great as 5,000 words, while the second can range upwards of 10,000), sometimes there is a problem in encountering written words that are unknown as spoken words.

Vocabulary

One of the problems with reading may be the insufficient receptive vocabulary of the students. My student in Project Read was a San Francisco-born man of 35 and a high school graduate. He lived in an economically depressed area of the city with obviously limited opportunities to get acquainted with many facets of life that comes naturally to more fortunate children. To my surprise he had never encountered such words as "moss" and "mole" and "lark," for example. He did not know their meaning and did not know how to pronounce them. It was therefore only natural that although he could sound them out based on the letters the written words contain, he had no idea whether his pronunciation was correct or not. Similarly to him, readers with small receptive vocabulary will run into difficulty when they encounter unknown words. The reader either recognizes them, or has to find out the meaning from the context of the piece, or else he would have to look it up in a dictionary, or ask the teacher, and learn the meaning of the word, thereby enlarging his vocabulary.

Increasing one's vocabulary is identical in process with learning a foreign language, namely memorizing the meaning of sound patterns, which are the words in a language and connecting that with an appropriate meaning. There is absolutely no difference between learning a new word in English, or, say, Portuguese. We read the letters, make out the sounds of the word, then check for its meaning. In many cases when learning a second language, even looking up a word in a dictionary does not give an unequivocal meaning for the word. In translation dictionaries, such as English-Spanish, for example, several meanings are given for many words, some of which may not be correct at all. The "flavor" of a word in a language can be learned only from the usage of it in that language, which can be achieved by means of reading a lot and conversing a lot in that language. To be a literate and a proficient user of a language, even one's own native tongue, one must be able to read in the sense of reconstituting spoken words from written symbols. This is the only way one can learn a living language, and perfect the mastery of one's own native language.

Reading and learning to read in a foreign language

When it comes to the mechanics of reading and the process of learning to read, it is perhaps useful to consider the process of learning to speak, read and write in a foreign language.

Learning a foreign language is a unique experience for each individual and there is no single rule as to how to do it best. Nevertheless there are certain observations that can be made. One is that building up a vocabulary by rote memorization of words out of a dictionary is a waste of time. Many words in all languages have multiple meanings depending on their contextual position, and dictionaries give only approximations of meanings. This does not mean that one is to avoid the use of dictionaries. On the contrary, frequent reference to a dictionary is imperative in learning a language for two reasons. First, one can have an idea about the choices in meaning related to the word so that one can get the sense of the sentence one is trying to understand. Second, in many cases, among them in the English language, one can find out the pronunciation of the word by using the phonetic key of the dictionary.

A language can be learned in a totally unstructured way by simply getting immersed into it and being forced to use it. This is the way children learn language, and this is the way many people of low native literacy acquire a second language.

For more literate persons it is more customary to learn the language in a structured way, meaning, by the use of a language book and a dictionary, and by learning explicitly some of the rules of grammar of the language. If such manner of learning the language is chosen, the first step invariably is the learning of the correspondences between letters and sounds, or graphemes and phonemes. The first or second lesson in any language book is a key of pronunciation with examples on how to sound out certain letters or groups of letters. In many cases this can be quite extensive, giving precise instructions on how to use the tongue, lips and teeth in producing the sounds of speech, and which area of the mouth cavity to use while forming the vowel sounds. When learning Russian, I had to learn the alphabet first, as the Cyrillic alphabet is quite different from the Latin alphabet. Not such an extreme case was my language experience in Austria in the late fifties, when some of the printed matter, for example the biggest newspaper in Vienna, Die Presse, used Gothic letters.

The first step, then, in a structured process of learning a foreign language is to learn the grapheme-phoneme correspondences. This gives the person the ability to pronounce words by reading printed text, even without understanding their meaning. Is this reading? It depends on which sense the word "read" is used. If it is rendering visual symbols into vocalized expressions, the answer is yes. If it is extracting meaning from text, the answer is no. But in the case of learning to speak a foreign language, one first must learn the sounds of words before they can be associated with meanings. Also, the first kind of reading, namely sounding out without getting meaning, has a value for the learner of the language. "Word calling," as the meaning-oriented segment of reading teachers

calls the practice, is an excellent exercise in the vocal formation of words, which very much helps in acquiring the ability to speak a language fluently.

In learning a language, a literate person learns along two parallel tracks. He learns the auditory language, while he also learns the written language. The chances of encountering new words simultaneously in auditory and visual forms is practically zero. So in some cases the person will learn a word in written form first, and in other cases in spoken form. Eventually a stage of proficiency in the language is reached, where most of the new words come from written material. This is due to the fact that in spoken language, except in orations, we tend to use a much smaller vocabulary than in written texts. If the language in question is phonetic, this represents no particular problem, as the learner can simply sound out the letters and instantly discover the spoken form of the word. However, in a language like English, which has an often unpredictable orthography, a dictionary must be consulted to get the correct pronunciation. Of course, we can guess at the pronunciation, and we often do. Quite often we even memorize the incorrect guesses and use them in our speech to the amusement of native listeners.

Nevertheless, a somewhat similar situation exists for the native speakers of English when encountering unknown written words, for they are similarly at a loss for correct pronunciation. In one of the tutoring classes the word "aborigine" was given as an example for something. When the instructor got to that particular word and pronounced it, one of my fellow tutor candidates, a young lady with a college degree, exclaimed, "So this is the way it's written!" Then she explained that she had heard the word many times before, but had never encountered it in writing. She had always thought it was spelled "aborigeny."

Conclusion

What does all this tell us? Letter-sound, i.e. grapheme-phoneme, correspondences is the basis of written rendering of a language using alphabetic writing. Letters or groups of letters stand for phonemes, letter sequences and phoneme sequences make words. Words then make phrases and sentences, which in turn make discourses that convey meaning and communication. Just like objects are impossible to exist without molecules, and molecules are impossible to exist without atoms, linguistic surface structures are impossible to exist without words, and words are impossible to exist without phonemes, or without graphemes in the case of alphabetic writing. In such languages the teaching of reading can be attempted without first teaching the letters, but sooner or later the hens come home to roost and the letters must be learned by the student. Needless to say, it is imperative that the pupil quickly advance from letter by letter reading to recognizing and reading letter groups, then whole words, then groups of words, for this speeds up reading and enhances comprehension. But fluent reading resulting in comprehension comes only with practice. The foundation still must be laid by learning the letters in the possibly most interesting and least boring way. As early as possible, the newly acquired knowledge of the letters and letter-sound correspondences must be put to use to read words and sentences, and to extract meaning from reading. Furthermore, this must be done with texts that interest the student. Learning to read and write must be made entertaining, and a challenge to the child's intellect, while at the same time giving food to the child's curiosity.

Chapter 6

Teaching to Read in Other Languages

During the past fifteen years I had the opportunity to travel to various countries in the course of my work in the mining industry. Also, I met many people from foreign countries coming to visit the projects I was working on. When I became interested in reading and the teaching of reading, I made it a point to bring up the subject during lunches and dinners when one is not supposed to talk about business. I inquired about literacy in the homeland of my guests and also about the way reading is taught back home.

When my guests were from non-English speaking countries, without exception they did not understand my question of how many functionally illiterate people are there among those who had finished grade school in their country. I had to explain what functionally illiterate is. "What?" they would say, "Do you mean to say there are kids who finish school here and can't read?" They found this incredible.

Not that I can blame them. In their own country such a thing just does not occur. Children go to school to learn to read and write first of all, and they do. In fact, they are not advanced past the first grade unless they read and write. For those who have the opportunity to go to school literacy is the norm. With hardly any exception children in the countries I visited, namely in Austria, Chile, Germany, Hungary, Italy, The Netherlands, Norway, South Africa, Switzerland and Venezuela, go to school under compulsory education laws, and they learn literacy even when they are from the poorest economic segment of society. This is not to say they all become voracious readers and highly literate, but they all can read whatever they need to for a normal life in a civilized society and they can communicate in writing as they need to.

The obvious thought that came to my mind upon seeing this truly general literacy: What do their teachers know that ours don't? Why does their system of teaching achieve such incomparable results when measured against our own?

I acquired primers from three of the countries I visited and read up on how reading is taught in a few others. Perhaps there is something we can learn from the experience of others, I thought. My mother tongue being Hungarian, I will start with Hungary.

Hungarian primers

When I learned to read and write, there was one primer used in all schools. It was published by the Ministry of Education. Later, when the country became the People's Republic of Hungary, there was still one primer, although its contents were markedly different from the one I learned from before World War II. Now that Hungary is simply the Republic of Hungary, there is a freedom of choice even in primers. My niece happens to be a grade school teacher in Budapest and I asked her to send me a primer. "What kind would you like," she asked. "We have twelve or fourteen different publications." This news rather stunned me. In a country of 10.5 million people there may be a little over 200,000 first graders. Why on earth would they need a dozen different primers for so few students? Well, it seems that capitalism and the market forces work wherever they are given a chance. In any event, I received two primers so as to make sure I get the drift.

One of them was published by Nemzeti Tankönyvkiadó (National Textbook Publisher, Budapest, 1995). It actually consists of two volumes, plus two work books for practicing writing. The first volume, "Szótagoló Ábécéskönyv" (Syllabicating Primer), is used during the first semester, and the second one, "Gyakorló Olvasókönyv" (Exercise Reader), during the spring semester. Both

are 6-1/2 inches by 9-1/2 inches in size, soft cover books illustrated with color pictures, printed on heavy white stock.

The first pages of the primer show small pictures of objects and actions that have for initial letter one phoneme of Hungarian speech. Phonemic exercises with plenty of illustrations follow. They are mixed with pictures showing various scenes and activities, such as a family sleeping in a room during a winter night with the moon and the snowy houses visible through the window, or a scene on the beach with children playing and adults doing various things. The children are asked to tell stories on the basis of the pictures. Sentences are given and the children are told to make new sentences using the same words. Next come exercises where the children have to find certain sounds in words. These activities are interspersed with simple little poems, which the children learn by heart and stories that the teacher reads for them.

When it comes to writing, instruction runs parallel with reading. The children begin to practice drawing vertical and horizontal lines and making curved shapes: elements of various letters.

On page 28 (out of the total of 169 pages), which is reached at the beginning of the fourth week in school, the learning of letters begins. Four allograms of each letter are taught: printed and cursive capital and lower case letters. The children learn cursive writing in the work books right from the beginning of learning the letters. Phonic exercises are continued along with introducing metalinguistic terms such as word, syllable, phoneme and letter, and drills are given to practice, among them to break down long words into syllables and finding phonemes in words.

I must comment here that the Hungarian language is very well suited for such exercises. Most of the words are multisyllabic, mainly because Hungarian is a conjugating language and multiple suffixes are generously added onto the root words. Also, Hungarian is, by and large, phonetic and the rules of syllabication are simple and straightforward. Although the alphabet is said to contain 44 letters, in reality only 26 graphemes are used. Out of the five basic vowel letters, namely **a, e, i, o** and **u**, 12 graphemes are derived by the use of diacritical markings, corresponding to the 12 vowel phonemes in the language. Furthermore, letter pairs, and in one case three letters, are used to represent certain consonant sounds. For example, **sz** stands for /s/, **cs** stands for /ch/ and **dzs** stands for /j/.

In another three weeks, by the middle of October, the children learn the vowel letters **a, o, e** and **i** together with their long versions and the consonants **d, c, l** and **t**. With this inventory of twelve grapheme-phoneme correspondences under their belts they begin to read words and very simple sentences. The words are introduced in syllabicated and conventional forms. Initially, when certain key words are needed and not all of the letters comprising them are known, those words are substituted with little drawings, pictographs, to make sentences with meaning. An example is the following sentence at the introduction of the letter **r** (The pictographs are shown here by brackets: {pictograph}.): "A {bird} flies over the meadow. A {dog} chases it. It flies away frightened. Renate and Aron would have liked to feed it." This device, obviously intended to teach reading for meaning right from the outset, is used very sparingly, and by about the firs half of November, is not needed at all, because by then so many letters are known by the children that a large vocabulary comprised of these letters can be used.

Vowels and consonants are continuously introduced. As the reading exercises for the children increase in number and length, the extent of the text read by the teacher decreases. The single- and two-syllable words are printed conventionally, the longer ones still in syllabicated form so as to make reading simpler. There is no deliberate repetition of words, and there is nothing artificial in the sentences or in the vocabulary used. They are all commensurate with the normal speech habits of first graders.

Punctuation marks are used right from the appearance of the first full sentence. They include period, exclamation point, question mark, comma and quotation mark.

By the time the Christmas vacation arrives, the primer is completed, the children know all of the letters and can read any text, albeit slowly. The following is the translation of the last story in the book:

> "The glittering fir of Christmas Eve holds a surprise on every bough. Do you know why the fir ended up in the festive light of the holiday instead of the chestnut tree with its white candle-like flowers, or the honey-smelling acacia?
>
> "Look at the winter forest! Only the fir stands in the splendor of its full tent of foliage when the holidays arrive. We still enjoy its wintry beauty when all the other trees had long lost their leaves. Go close to it. Do you see its long, slender leaves? They look like needles. If you rub the leaves of the fir between your fingers, you can smell a fine fragrance, because there is a fragrant oil inside of the needles.
>
> "Look at the fir again in the spring. At the ends of the dark green boughs pale green young shoots beckon. Every year the boughs grow by the length of the new shoots.
>
> "Squirrels like the longish, hard, brown cones of the fir. Little prickly scales show on the surface of the cones, and under each scale hides a seed. Once the seeds are ripe, the scales open up and the little winged seeds are carried away upon the wind. The little seeds land and cling to the soil, extend roots into it and grow into new firs."

Quite obviously, there is no vocabulary control here, and children read texts like this after only sixteen weeks in school. The second half of their first year in grade school is spent with reading stories and poems, and writing stories of their own, as far as language related learning is concerned.

The other primer I looked over is "A Mesék Csodái ABC és Olvasókönyv" (The Wonders of Fairy Tales Primer and Reader), published by Dinasztia Kiadó, Budapest, 1996. It is 8-1/2 inches by 11 inches in format, full of color illustrations, printed on white glossy paper. It is set up to spend the first four weeks of the year with phonemic exercises, after which only the lower case letters are introduced. The first letters taught are **a, i, u, m** and **t**. Letters are added at nearly daily intervals and immediately words are assembled from them. All words are hyphenated between syllables and wherever capitals should be used, the lower case letters are printed in red. Initially about 60-point letter size is used, which is reduced to about 40 points after a few weeks, and then to 30 points. Writing proceeds parallel with the learning of the letters. Writing is in cursive letters. By about week eleven all of the letters are introduced and children read stories such as the following one:

> "**k**o-pe (a personal name) goes on a hik-ing trip. **m**a-ma is an-xious. '**l**ook out at the river. **t**he wa-ter is deep. **l**ook be-fore your feet. **d**o not fall in-to a pit. **t**here are ma-ny danger-ous plac-es.' **k**o-pe was care-ful. **h**e had no prob-lem."

Admittedly, not a very sophisticated story, but not bad for three months of effort. After this stage of learning to read, the capital letters are introduced one by one. The letter size is reduced to about 16 points. As the capitals are learned by the children, the red initial lower case letters are replaced by black capitals as appropriate. Shortly after the beginning of the instruction with capital letters, the hyphenations marking the syllables are omitted and the words are printed regularly. With this primer, too, by the time Christmas vacation comes around, the children read everything with no restriction on vocabulary. The second semester is utilized for practicing to gain reading speed.

<u>German primer</u>

"Die Kunterbund Fibel" (The Parti-colored Primer) is the title of the German first grade reader I reviewed, one of several publications used to teach reading in German elementary schools. (Ernst Klett Schulbuchverlag GmbH, Stuttgart, 1993)

The book measures 7-1/2 inches by 10 inches and contains 100 pages of richly illustrated text, printed on bleached acid free paper. At the end of the book 15 Klett publications are listed as teaching aids to the book. These include exercise books for writing, word and picture tables, reading cards and individual pictures.

On pages 2 and 3 is a spread of a bird's eye view of a busy town showing streets with traffic, stores, a movie theater, a school, an open air market, a construction site — all peopled by busy adults and children. It is a picture children can talk about for several hours, I'm sure. Signs are all over, as if proclaiming the usefulness of being able to read.

The next page shows the inside of a class room with children sitting on chairs and a teacher saying to a little girl standing in the open door, "Komm, Lisa." (Come, Lisa.) On the opposing page are illustrations on how to make paper name tags with Lisa's and three other children's names on them. The consonant letters **l, s, k, t, m** and **s**, and the vowel letters **a, i** and **o** are introduced right at the outset.

The entire book is covered during the first school year, which requires that the 100 pages are taught in the course of 36 weeks, making the work load roughly three pages per week. The above nine letters comprise the subject of the first 24 pages, which probably take 8 weeks to cover. Beyond page 25, letters and diphthongs are introduced at a rate of one for every two pages.

The German language is quite regular and nearly phonetic, which facilitates the learning of reading. The alphabet consists of 30 letters: **a, ä, b, c, d, e, f, g, h, i, j, k, l, m, n, o, ö, p, q, r, s, t, u, ü, v, w, x, y, z, ß;** however, the matter does not stop there. There is no strict one-to-one letter-sound relationship. There are special rules that need to be remembered. To give examples, the letter **s** is pronounced /s/ or /z/ in different circumstances, and when standing before **p** and **t**, it is pronounced /sh/. Both **f** and **v** are pronounced /f/. The letters **z** and **tz** are pronounced /ts/. **Sch** is /sh/, **ck, c** and **k** are pronounced /k/, a **qu** is /kv/, a **ch** is /kh/, and so on. Vowels have their own complications. **Ie** is a long /ee/, **äu** and **eu** are pronounced /oy/, **ah, eh** and **uh** are long vowel sounds and **ei** stand for /ay/.

Looking at the text of the primer, an obvious and surprising observation can be made, namely that there are hardly any repetition of words in the book. The authors seem to have opted for less text to read as a trade-off for making the book as much of an interesting reading as possible. Since this evaluation is based on a review of the primer only without an opportunity to observe classroom activities, and in view of the list of supplemental teaching materials at the end of the book, I am sure that there is some augmentation of the reading material in classroom use besides the text in the book.

Around Christmas the children read texts such as this: "Papa will buy noodles. By car? Papa, no, no car! Come, we run." True, not much to brag about. At this point the text has a similar level of sophistication as the American primers.

Six weeks later they read sentences like this: "My month is June. In June the sun shines often. My month is January. Then there is show and ice. My month is July, when there is sunshine and ice cream."

In yet another six weeks, by the end of March, they read a little poem: "Early morning at six comes the old witch. Early morning at seven she chops yellow carrots. Early morning at eight the coffee is made. Early morning at nine she goes to the barn. Early morning at ten she brings in wood and kindling. She sets fire at eleven and cooks until twelve the frog bones, toads and fish. Hurry children, come to the table!" A few pages later they read the following story that contains a wee bit of sociological message: "The bell midget. 'What is a bell midget?' asked Marco. 'One

rings the door bell anywhere and then runs quickly away,' explained Julia. 'I know this from Spain,' shouted Elena. 'Let's play bell midget,' Daniel urged. The children looked for a house with many door bells. Julia rang a few and then they all ran away. A window opened and a man shouted. 'Shameful! These Turkish children are at it again!'"

In April the children read quite elaborate stories, such as the following: "Why has the porcupine quills? The quills of the porcupine are actually its hair. They developed such that the porcupine can protect itself with them. Its enemies are the weasels, foxes, wild boars and prey birds. When the porcupine rolls itself up, its enemies lose their appetite for porcupine. Unfortunately, the quills give no protection to the porcupine against its greatest enemy, the automobile."

By the time the children are through with the book, they can read literally everything. Although the book contains only about 650 new words, it deals with every word type that a reader encounters in German reading material. From then on all the child needs is practice so that he can develop reading speed.

By the end of the second grade, the children not only read everything, they also will have learned to read text printed in many different fonts, including the nightmare-to-read texts in old Gothic letters.

Chilean primer

"Yo Pienso Y Aprendo" (I Think and Learn), is the title of the Chilean primer, used to teach reading in Chilean elementary schools. (Editorial Andres Bello, Santiago de Chile, 1995; fifth edition.)

The two-volume book measures 7-1/4 inches by 10-1/2 inches in size and contains richly illustrated text of 224 pages. Both volumes are spiral bound on a good quality white paper. Volume one contains five teaching units; volume two six, the two being taught during the first year, which allows a little over three weeks for each unit. At the bottom of each page there is a teacher's aid printed in 10-point Arial letters on orange background, giving instructions as to the presentation of the material, as well as providing suggestions relative to asking questions and guiding class discussions.

Chile being a relatively poor country, schools and parents can generally not afford to spend much money on instructional materials. I found no indication in the books that there are additional published work books. The children have note books which are used for writing exercises.

The first page after the title page shows the picture of a little girl and boy prancing merrily in a green meadow under a blue sky with butterflies fluttering above them, and a little dog and a tortoise joining them. The text is: "How good! I am in the first grade. I take good care of my book, which serves me to learn to read, write and think about so many new things." It then provides space to fill in the child's name, birth date, age, address, etc. On the facing page is the picture of a T-shirt, which is to be promptly marked up with the child's name. One assumes that the teacher does this for each child.

The first unit, covering seven pages in addition to the introductory double page just described, is aimed at the development of oral and visual comprehension and oral expression. It also starts the children in writing exercises. It introduces the idea of words. A little story about a mother duck and her three ducklings prints the words "rain," "duck," "three," "ducklings," "water" and "hat" in blue letters with a simple little drawing next to the words to illustrate their meaning. Similarly, the words "balloon," "sun," "stars," "rocket" and "astronaut" are introduced in the next story. These are not sight words to be memorized, just illustrations that written words represent spoken words. The stories are read by the teacher.

The Spanish alphabet consists of **a, b, c, ch, d, e, f, g, h, i, j, k, l, ll, m, n, ñ, o, p, q, r, s, t, u, v, w, x, y** and **z**, for a total of 29 "letters," of which two are digraphs. Spanish is a very consistent lan-

guage from the standpoint of pronunciation, generally the letter-sound correspondence is quite strict. The letters **c, g** and **y** can each stand for either of two sounds, but when are they to be pronounced this way or that is readily definable and consistent.

Section two, from pages 13 to 34 teaches the five vowels in the Spanish language, namely **a, e, i, o** and **u.** The children learn to read and write the letters at the same time. Several animal names are given with initial letters just learned. The exercises are pictures to be colored, showing the animals, little rhymes that the children memorize, all centered on learning the sounds that the letters stand for. As yet, the children do not read in the sense of decoding words or comprehending them.

In section three the consonants **p, s, m** and **l** are introduced. This section extends over 24 pages, and here, nearly two months into the school year, the children begin to write and read their first words, *papa, sapo* (frog), *pipa* **(**pipe). Learning is still almost equates with playing. The little stories are read by the teacher; however, with the four consonants and five vowels, simple sentences are written, such as "*Susi mima a su osa***.**" (Suzy pets her bear.) At the end of this section the letter **y** is taught, which is one of the few non-phonetic letters in Spanish, as it can stand for the vowel sound /i/ and the consonant sound /y/. In Spanish it is an important letter, as "*y*" means "and" and "*yo*" means "I."

Sections four (20 pages) and five (28 pages) are about learning the letters **n, t, c** and **f, d, h, r** respectively. One must add that the letter "**c**" is pronounced similarly to its pronunciation in English, namely it stands for the sound /k/ before the letters **a, o** and **u**, and for the sound /s/ before **e** and **i**. In section four, **c** is used only before **a, o** and **u**. Right from the beginning of section four simple sentences are read by the children. The device of picture writing is used for words that the children cannot read as yet due to their unfamiliarity with all of the letters in certain words. In the exercise "How do I read?" there are five sentences. (The pictographs are shown here by brackets: {pictograph}.) One, to give an example, translates to: "In the {water} there are {fish} and in my {heart} are dad and mom." Again, this usage is clever, because it serves two important purposes. First, it gives an opportunity to the children to read words containing the letters already learned, second, by giving complete sentences, the children read for meaning from the very beginning of the process of learning to read. The practice is phased out rather quickly as more letters are learned and as the vocabulary the children are able to read increases rapidly. By using pictographs as temporary supplements to written words, the sentences are made interesting and no use is made of "sight words."

Section five, in addition to teaching the four consonants listed above, introduces the eight digraph-diphthong correspondences of Spanish, namely the **ie, ue, ei, io, ia, ai, eu** and **au.** These, plus the five vowels and the eleven consonants learned so far represent a substantial basis for a rather large written vocabulary, which enables the children to read quite advanced texts — such as little poems — not quite half way through the first grade. Up to this point the children will have encountered about 240 words. For their efforts in learning to read, there is a colorful testimonial of congratulation on the last page of the first volume of the book, which both the teacher and the parent sign with presumable pride.

In the second part of the year there are six sections to cover. These sections deal with the remaining letters of the alphabet, namely **q, ñ, b, j, ll, z, v, g** and **ch,** as well as with the consonant groups of **tr, dr, cr, pr, gr, fr, br, fl, bl, tl, cl, pl** and **gl.** The children read the text, write by dictation, answer questions related to the text to ensure they comprehend what they read, and they learn little poems. By the end of the volume and of the year, they can read literally everything. Obviously, the complexity of the reading material at the end of the book is commensurate with the interest and receptive vocabulary of seven year olds, but there is no limitation to what they can read. They are capable of reading any Spanish word in the sense that they can pronounce it, and from this

point on the concern is to improve reading speed, develop vocabulary and constructive reading habits.

Quite obviously, not all Chileanos are voracious readers, but if one stands on a corner of Avenida Apoquindo in Santiago, and sees the swarms of yellow buses with a whole litany of destination names written on their front panels barrel down the lanes, and then one watches the people flagging down the buses they need to take, one cannot but be impressed by the fact that they all can read fine print quickly and efficiently.

Other languages

During the post Sputnik period, when the American educational system went through one of the periodical shocks after the public and the media became convinced that it is ineffective in educating America's children, Arther S. Trace, Jr. wrote a book, "What Ivan Knows That Johnny Doesn't." In the book Trace compares the teaching methods and curricula in Soviet and American schools in the areas of reading and writing, literature, foreign languages, history and geography. By the time the book was written, the inferiority of American education in the areas of mathematics and the natural sciences was amply demonstrated by other authors.

Much of the material in the book is outdated now, having been overtaken by historical developments, but his observations on the teaching of reading remain of interest and bear reviewing.

Reading instruction begins at age seven. A standardized primer, "Bukvar," is used throughout the country. Having finished this book, children are provided with a series of four readers, called "Rodnaya Rech" (Native Language), one each for the first four grades. The chief aim of the program is to teach Soviet students to read anything of moderate difficulty by the end of the fourth grade.

It needs to be noted that the Russian language is very phonetic, even though it is difficult to learn for foreigners because of the complicated grammar and the overabundance of consonants, which tend to bunch together, making some words sound like veritable tongue twisters. The primary purpose of the "Bukvar" is for children to learn the Cyrillic alphabet, and the sound each letter stands for. They learn to sound out single letters and combinations of letters. Additionally, they learn to read words, short sentences and paragraphs, using a total vocabulary of about 300 words. They finish "Bukvar" within the span of a few weeks' time.

Having learned the basics of reading, and being able to "decode," as well as to write down any word, the children are switched over to the first reader. This volume contains about 130 reading selections and a vocabulary of about 2,000 words. By this time the children are thoroughly trained to read any word, and they are expected to have no difficulty in reading texts with such great vocabulary.

The reading exercises encompass not only stories written exclusively for the young reader, but material by such authors as Leo Tolstoy, Mikhail Lermontov, Alexander Pushkin, Nicholas Nekrassov. They also include a number of folk tales, and 18 poems. The subjects of the stories range from how Lenin studied, to family oriented readings, school, health matters, nature, animals — encompassing virtually all aspects of life a seven year old encounters.

The second grade reader contains about 160 reading selections and has a vocabulary of about 4,000 words. The third grade consists of 384 pages with relatively few illustrations and a vocabulary of some 8,000 words. The fourth grade reader has long and quite sophisticated selections, many by classic Russian writers, and has a vocabulary of about 10,000 words. Any child completing the fourth grade in the elementary school, which is by age eleven, is a competent reader of any Russian text. Comprehension is limited only by his knowledge of the meaning of new words.

Bruno Bettelheim and Karen Zelan in "On learning to Read, The Child's Fascination with Meaning," write that "A visiting professorship at Kyoto University permitted one of us to visit

classes in public schools where Japanese children were taught to read. It was amazing to observe the interesting stories, conveying complex thoughts, that were used to teach first graders, and it seemed that they all learned at least the basic skills involved. By the end of the first grade, the Japanese school child is supposed to have mastered the two different syllabic alphabets — hira-gana and kata-kana — each consisting of forty-six syllables, which themselves consist either of a single vowel, or a consonant followed by a vowel. All Japanese words are built up out of these syllables. In addition, every Japanese child by the end of the first grade is supposed to have mastered seventy-six pictographs [the authors mean logograms]. Although the children are taught the strokes of the pen, or brush, out of which the syllables and particularly the pictographs are built up, the pictograph itself has to be learned as such, and its meaning must be comprehended if the child is to learn to read and write. Therefore, from the very beginning, the teaching of reading is concentrated only on the meaning of a pictograph, and not on the elements out of which it is built up."

William S. Gray in "The Teaching of Reading and Writing" explains that Japanese is the only widely used syllabic system of writing. Japanese contains Chinese characters which are interspersed in writing with syllabic symbols, the average ratio is 1:5. There are two syllabaries, each consisting of 46 symbols. The kata-kana, or "rigid" style, is used in scientific literature, official documents and transliteration of foreign names. The hira-gana, of "plain," "simple" style, is used in newspapers, novels and everyday life. The hira-gana signs have many variants, analog to the various letter styles of the Latin alphabet. The kana signs stand for open syllables, i.e. consonant followed by vowel, which is the only type syllable in the Japanese language. In elementary school 881 Chinese characters are taught in addition to the two syllabaries. In high school the number of Chinese characters is increased to 1,850. Learning to read starts with learning words and this gradually extends to reading sentences. At adult level there is no illiteracy in Japan.

Eleanor J. Gibson and Harry Levin in "The Psychology of Reading" (1975) devote a part of the work to "Questions People Ask about Reading." One of these questions is "Are There Cross-National Differences in Reading Achievement?" This part was actually co-authored by Ellen Garber.

She explains that there are three writing systems: alphabetic (each character represents a phoneme), syllabic (each character represents a syllable), and logographic (each character represents a morpheme, a meaningful unit of speech).

Chinese writing is perceived as being the hardest to learn, as there are some 42,000 characters. All of the characters are made of strokes, of which there are about 20. Logograms consist of one to fifty-six strokes with an average of eleven strokes. Furthermore, generally the logograms consist of a radical and a phonetic unit. At the present there are 214 radicals in use, which combine with 1,700 phonetic units for forming 80 to 90 percent of logograms in common use. Thus, there is a phonetic principle underlying many Chinese characters.

Japanese is written with two syllabaries and a good number of logograms, the kanji characters, originally borrowed from Chinese writing. Hira-gana is used mostly for writing spoken language, kata-kana for writing names and imported words. Kanji usually carries the main ideas in sentences so that the main point of the sentence can be grasped quickly and easily. It is claimed that Japanese children learn all characters of hira-gana in less than one year while in kindergarten.

Of the languages using alphabetic writing, Garber discusses the characteristics of several:

> **Danish** has an irregular orthography with very complex rules of relations between vowel graphemes and vowel phonemes. Teaching reading is individualized and the methods vary widely. There are many reading problems, although many experts attribute this to the Danes' high level of consciousness of potential reading problems and claim that in other countries those deemed needing remedial help would not be considered problem cases.

Finnish is an extremely phonetic language with 21 letters in its alphabet and one superscript. The good sound-to-symbol correspondence helps pronunciation. Children by the end of the first grade can read anything, however, their comprehension may not be universal. There is no reading problem in Finland.

French is one of the most phonetically irregular languages. It has fewer sounds than the English language. It makes use of diacritical marks to designate certain vowels. It is systematized, regular and consistent. The learner is able to identify the characteristics of the language, memorize the exceptions and make use of word derivations. About 25 percent of the children fail to read by the end of the first grade and are thus compelled to repeat the year, it is blamed not on the language or the method of teaching, but rather on the teacher with insufficient training. No instruction is given to teachers on how to teach reading.

Hebrew writing is difficult to read as the 22 consonants look quite similar, and the 9 vowel sounds are either not written, or written by small diacritical marks under the text. The symbols are introduced gradually and the children immediately start reading meaningful material. The language is nearly perfectly phonetic, and there is no illiteracy problem.

Hindi is the official language if India, it is one of the estimated 179 languages and 544 dialects that are spoken in the country. Hindi contains 14 vowels and 39 consonants, the name of the graphemes are the sounds themselves. Children are taught to sound out words, with emphasis in the early grades being entirely on decoding and not on meaning. Although literacy in the country is low (34.5 percent of males and 13 percent of females), all of those who attended school can read.

Norwegian is a phonetic language. Instruction begins with the sounds of the letters and once the connection is made, develops into word method, with mediated reading remaining phonetic. Only 5 to 6 percent of children experience difficulty in learning, but by third grade every child reads.

Swedish is highly phonetic, the phonic method is used for teaching reading, although meaning is stressed in reading right from the beginning. Schools strive to give children positive experience in learning and strive to create a desire in the child to read. Failure to learn to read is not accepted. There are remedial clinics available for the few cases where regular instruction does not succeed.

The moral of the story

We have seen a good sampling of how reading is taught in other countries and what results are achieved. We were shown earlier that English orthography is a class by itself, therefore there is no exact correspondence between reading in English and reading in other languages. Nevertheless, there are analogies.

It is clear that learning to read does not happen spontaneously, nor is it the outcome of a miracle. It is the normal result of a process of the systematic introduction and practice of the basic elements of reading.

Each and every first grade reading program starts out with exercises aimed at developing phonemic awareness and the introduction of metalinguistic concepts such as speech sounds, letters, syllables, words, sentences. In all programs the initial emphasis is on the verification and development of language skills, namely telling stories, understanding them, and in general, brushing up on verbal communication. The child is made aware of the language, which he had been using spontaneously up to the entrance into the first grade.

The most obvious common thread running through the primers is the elementary importance of teaching the letters and the relationship between the letters and the sounds of speech. No matter how letters are introduced, the children are given ample time and opportunity to practice the material, to internalize the graphic symbols of letters, and to associate them with the sounds of speech. If words are too long for efficient processing through the short term memory of the brain, devices are applied, such as marking syllabication, to break them down into easily manageable units.

All of the primers are quite aggressive in the introduction of new words, not shying away from relatively rare words. Also, they avoid repetition of words. They all aim at using language as natural as possible for a six year old child. They also strive to provide the children with interesting reading material to practice on, including poems, riddles, proverbs and fairy tales. If families are the subject of the stories, they are realistic and political correctness is most definitely not a consideration.

They set out to equip the children no later than by the end of the first grade with skills to read any and all printed material, and they achieve this goal with universal regularity. Although the reading programs are no guarantee to make every student a connoisseur of literature, they provide all with the basics to function as literate members of a society, in which many activities are based on written communication.

Chapter 7

Teaching to Read in the U. S. — A Retrospect

English writing is very different from writing in such languages as German, Spanish, Hungarian, or Russian, for example, inasmuch as those languages are much more phonetic than English. For this reason, a different method must be used in teaching reading in English. While in other languages a child can spend an entire school year learning the letters and certain letter combinations, in English the letters need to be learned in a relatively short time so that the learning of reading can concentrate on the relationship of letter combinations and sound combinations, which is the characteristic that sets the English orthography apart from all other languages. This necessity should not be hard on the children, after all, we are talking about learning a total of 54 simple symbols if we take into account the upper and lower case letters and the two common allograms of the lower case letters **a** (**a ɑ**) and **g** (**g g**). The mental power of children is often underestimated when it comes to what they can learn. We all know from experience that children can learn an incredible amount of information in a short time, particularly when "they are not supposed to." They do have the mental ability to learn a lot, and they do learn in a phenomenally short time if the subject interests them.

The key to teaching reading is to make the child want to learn to read. Some children come from homes where reading is an everyday common occurrence, where they had read to them in early childhood, where printed material is part of life. Such children seldom have problem learning to read if they are not unfortunate enough to get into a school where they become thoroughly confused due to a method of teaching that is not conducive to produce workable reading technique and habits.

Other children come from environments — one is reluctant to use the word "home" to describe the living circumstances of some — where reading is alien, where there is no printed matter around, where the parents or the single parent hardly ever reads or is practically illiterate. In the cases of such children the idea of reading and the value and usefulness of reading has to be first introduced and taught. Reading awareness needs to be developed, and the seed of loving reading must be planted. Unless this is done, and, unfortunately, this is a time consuming process, the child will see reading as a totally useless activity and will never develop enough interest to learn it. To teach reading, similarly to teaching anything else, is impossible. The only thing a teacher can do is to enable, encourage, help and guide the child to learn to read.

Learning to read

Writing is not an English invention, nor is the teaching of reading. We have seen that the first full alphabetic writing was invented by the ancient Greeks, from which it follows that teaching to read in a full alphabetic writing system was also invented by them. From what we know about these matters, teaching reading back then was a simple mater. The beginner reader was to learn the letters, 24 of them, as the Greeks used only capitals, learn their names and forms and the sounds they stand for. Then they practiced to write the letters and to utter the sounds they stand for confluently and in the sequence of the letters to produce meaningful words and sentences. The method worked. A significant segment of the population became literate.

As the craft of writing spread, the method of teaching reading and writing went along with it. The Etruscans and the Romans followed in the footsteps of the Greeks, as did the Germanic tribes when they developed their runic writing system. Later with the Roman invasion of Britannia and

the replacement of runic letters with the Latin alphabet, the methods of learning to read still remained the same. Namely, the student learned the shapes and names of the letters as the first step. Then followed the practice of uttering the sounds associated with pairs of letters in nonsense words, until, perhaps in the second or third year of the process of learning, real words were read, mostly words appearing in prayers and the Bible. The initial phase of the learning process was dull and dreary, and it had a selective effect regarding who would eventually become literate. Only the dedicated ones did, the ones who were tenacious enough to stick out the mind-numbing exercises that seemed meaningless and irrelevant to reading, or the keen ones who were able to use their cognitive learning talents to figure out the essence of reading and work out for themselves quickly the interrelationship between letters and spoken language.

Early teaching to read in America

Nila Banton Smith in "American Reading Instruction" (1967) says that the main purpose of reading in early America was to enable people to read the Bible and other religious materials. Oral reading was important, because a large segment of the population was illiterate and could participate in religious activities only verbally and aurally. Also, reading material was scarce. Reading instruction started with the "horn book," which is a board with a handle (somewhat like a cutting board in the kitchen), covered on one side by a translucent sheet of horn under which paper with printing could be slipped. The first paper showed the alphabet together with letter combinations to form open or closed syllables of two letters. Pupils had to memorize the names of the letters and practice the syllabary prior to reading simple texts, which were printed on subsequent sheets. After this tedious and boring first phase of learning to read, the pupil was given the Bible, and with the help of the teacher began reading it. This method, by necessity, involved a long period of memorizing abstract symbols (the letters) before any practical use was discovered or reward was received by the pupil for the effort.

The first primer (the name comes from the fact that the book containing the first reading instruction also contained the basic instruction in religion) published in America was "The Protestant Tutor" printed in Boston in 1685. The contents of the book were the alphabet, a syllabarium, the Lord's Prayer, the Creed, the Ten Commandments, and various religious texts. The "New England Primer" was printed somewhat later, it was much the same, except that it contained some pictures as well as some alphabet rhymes. The teaching method was still memorizing the alphabet, spelling syllables with no meanings, memorizing sections of content, and reading orally.

In 1833 Noah Webster wrote "The American Spelling Book," which became the standard for many years to come. Instead of religious-oriented texts, it contained moralistic texts for practice of reading; however, the method of teaching reading was essentially the same as using the horn book.

Innovations in the method of teaching

Even though by this time public schools were established in many parts of the United Sates, literacy was not general. One might say it was the exception rather than the rule. One reason was, of course, the tedious and long-term nature of learning to read a write. This was not unique for America. The situation was much the same in the countries of Europe. The general difficulty in learning to read started a new movement in Europe a couple of decades before this time. It began as a consequence of Jean Jacques Rousseau's writing in "Emile," in which he advocates education based on the observation of nature first, followed by literacy schooling. Johann Pestalozzi, a Swiss-born educator, applied Rousseau's principles in a school he established for poor children in Yverdon, Switzerland in 1805. The Yverdon curriculum was based on drawing and writing, singing, physical activities, and group recitals rather than individual vocal reading. It also involved the making of

models, preparing collections of various kinds, field trips, etc. This educational process as opposed to the rigid, class room activities and rote memorization typical of the contemporary schools was revolutionary and yielded comparatively good results. It is easy to understand that it generated great interest in pedagogic circles.

The first part of the 19th century was an era of renewal in education. New ideas cropped up and evolved independently, only to reinforce and amplify each other as they became known more widely.

The Philadelphia-born Thomas Hopkins Gallaudet, a graduate of Yale College and Andover Theological Seminary, became interested in the teaching of the deaf and went to Europe to learn their methods of teaching, including the use of sign language. Helped by a land grant from Congress, in 1816 he founded the first free public school for the deaf in the U.S., the American Asylum for Deaf-Mutes, in Hartford, Connecticut. Since the children in Reverend Gallaudet's school had varying degrees of difficulty to speak or understand English, he taught them to read by writing down words — the names of objects first, then expanding to other words, teaching them reading and writing on the basis of whole written words without any reference to the sounds of English speech. It is interesting to note that Gallaudet, evidently, in addition to teaching his charges to read and write, also taught them the use of the English language, but only in written surface structure form. His efforts were phenomenally successful, his pupils all became literate, which was much more than regular schools could show for their efforts. The results of his teaching methods convinced many pedagogues that teaching reading by starting with whole words rather than letters and letter-sound correspondences was infinitely more effective. When Gallaudet retired "A Mother's Primer," based on his teaching method, was put together by his followers. It used the whole-word method for teaching reading.

About the same time in Germany, one of Pestalozzi's followers, Friedrich Froebel, developed the idea of pre-school education of children in preparation for learning to read and write. In 1837 he established an institution in Blankenburg, Thuringia, dedicated exclusively to the education of children between the ages of 3 and 7 years and called it "Kindergarten," meaning "children's garden." Teaching in the Kindergarten took place through action and play, reading was taught through the peruse of words and not the prior memorization of the letters.

In the same year, because of the "deterioration of the quality of public education," a state board of education was established by the Massachusetts legislature. Horace Mann became its first secretary. Mann came from a poor family, but through his efforts and hard work enrolled to, and completed his studies at, Brown University. He became a lawyer, served both as representative and senator in the Massachusetts legislature, and was an influential politician. Closest to his heart, though, was public education, which was the reason he accepted the position as the head of the board. In 1844 he traveled to Germany to acquire first hand knowledge of the much talked-about new method of education. Part of this educational process was, of course, the method of teaching reading to children. In his seventh annual report Mann gives an account of his trip to Prussia and says the following of a reading lesson he had witnessed there (Mann did not speak the German language and made his observations through the services of an interpreter):

> "The teacher first drew a house upon the blackboard; and . . . by the side of the drawing and under it, he wrote the word 'house' in German script hand, and printed it in the German letter. With a long pointing rod . . . he ran over the form of the letters. The children, with their slates before them and their pencils in their hands, looking at the pointing rod and tracing the forms of the letters in the air.
>
> "The next process was to copy the word 'house', both in script and in print, on their slates. Then followed the formation of the sounds of the letters of which the word was composed, and the spelling of the word. Here the names of the letters were not given as with us,

> but only their powers, or the sounds which those letters have in combination. The letter 'h' was first selected and set up in the reading-frame, and the children, instead of articulating our alphabetic 'h' (aitch), merely gave a hard breathing, such a sound as the letter really has in the word 'house.' Then the diphthong 'au' (the German word for house is spelled 'haus') was taken and sounded by itself in the same way. Then the blocks containing 'h' and 'au' were brought together and the two sounds were combined. Lastly, the letter 's' was first sounded by itself, then added to the others, and then the whole word was spoken.
>
> "In every school, also, there are printed sheets or cards containing the letters, diphthongs, and whole words. The children are taught to sound a diphthong, and then asked in what words that sound occurs. On some of these cards there are words enough to make several short sentences, and when the pupils are a little advanced, the teacher points to several isolated words in succession, which then taken together make a familiar sentence, and thus he gives them an agreeable surprise, and a pleasant initiation into reading."

Smith writes, that an examination of readers published in Prussia in those years indicates that much emphasis was placed upon the teaching of the sounds of letters, also upon the subject of reading material, which was arranged on the principle of proceeding from the simple to the complex. Much attention was given to learning the sounds of the letters as well as their names and combining them into phonetic syllables.

Mann in "Teaching Young Children to Read" (1844) writes, "In teaching children words, in the earlier stages of education, the objects they designate should, as far as possible, be presented . . . If children should be introduced to a knowledge of written language, by means of the most attractive and impressive objects and ideas of objects, then those names which are the names of the most striking and agreeable things should be presented to them."

Based on what he thought he saw in Germany, namely that teaching to read should start with learning to read whole words rather than first learning the letters, Mann supported the acceptance of the German teaching method, which was corroborated by Gallaudet's results also. Mann's position was by no means uncontroversial. The Boston Association of Masters assigned Samuel Greene, the principal of the Phillips Grammar School, to write a critique of the "whole-word" method of teaching reading, with a special view of its neglect of spelling. Greene found the whole-word method illogical and a hindrance for the children to learn to read, and said that using the logic of the whole-word method to teach children to read, namely the omittance of teaching the letters of the alphabet, the Braille writing could be used just as well. Thus, the controversy about the letter-based versus the whole-word methods of teaching reading goes all the way back to the latter's beginnings 160 years ago.

<u>The whole-word and phonetic methods</u>

Smith comments that from Mann's works and the study by others of Pestalozzi's teaching methods, the word method of teaching reading emerged. A number of "whole-word" readers were published in short order. Josiah Bumstead's "My Little Primer" published in 1840 was the first whole-word primer. It was soon (1846) followed by John Russel Webb's "John's First Book" which started in Part I with teaching words, continued in Part II with teaching new words, reading, spelling, the alphabet and sounds of letters, and in Part III it turned into a speller and reader, which taught children to spell columns of words and pronounce them at sight.

At about the same time primers appeared using the "alphabet-phonetic" method, which taught the sounds of letters instead of their names. This was the period when the McGuffey's primer appeared. It remained the most popular primer for 40 years. This book is based on the presentation of

short sight words and repeating them sufficiently often for the pupil to learn them. It contains columns of words and sentences made from these words.

In 1853 David B. Tower wrote "The Gradual Primer" which took the best from both the alphabet and the whole-word methods. His book "gave the child only a few letters before he is called upon to read words composed of those few letters. Thus the child is taught words long before he has mastered the whole alphabet; and yet no words are given him, of which he has not previously learned the letters."

From this time on teaching reading has been divided into two opposing camps, the whole-word and the phonetic, later named phonic adherents. In our days these two different approaches to the teaching of reading are called meaning-emphasis and code-emphasis methods.

There were three phonetic-method readers published early in the century. In 1912 the Beacon Readers appeared, Ginn and Company published readers, as did Fassett and Norton.

After the turn of the century, two new methods were devised and came into limited use: the sentence and the story methods — both outgrowths of the whole-word method. For more advanced reading, emphasis was placed on the appreciation of literature. On the whole-word, sentence, and story side, The Macmillan Company published "Language Readers," Silver Burdett and Company brought out "The Progressive Road to Reading," Row, Peterson and Company "Reading-Literature," Newsom and Company "The Aldine Readers," American Book Company "Story Hour Reader," Charles E. Merrill Company "The Merrill Readers," Longmans, Green and Company "The Horace Mann Readers," The Macmillan Company "Everyday Classics," Scott, Foresman and Company "Elson Readers." A total of nine publications.

Not only did these readers provide learning material for the children, they also came with suggestions on how to teach them. By this time quite elaborate procedures had been developed for the teaching of reading. For example, the authors of the "Story Hour Reader" recommend the following procedure:

I. Telling the story
II. Dramatization
III. Blackboard work
IV. Analysis
    1. Thought groups
    2. Sentences
    3. Word groups
    4. Sight words
    5. Phonetics
V. Reading from the book

It is interesting to contemplate for a moment how this "teaching of reading" was supposed to work. The teacher would first of all tell the story to the children they were about to read. Once they found out what it was about, the children acted out the characters in the story, presumably to become intimately familiar with it. The blackboard work consisted of writing sentences and words on the blackboard and verbalizing them, pointing at the words as the verbalization proceeded. Then came a number of discussions, what are the main events of the story, what points were made, what did the story start out from and where did it go. The discussion went over the sentences, the phrases, and the words that may have been familiar from prior activities, and perhaps pointing out certain letter groups as to their relationship to certain groups of sounds in the spoken language. Finally, after four or five days of such preparation the children got an opportunity to actually read the story. Mind you, no systematized effort had been made to explicitly teach them letters, or speech sounds, or any relationship between the two.

My first reaction on reading this elaborate and circumspect process was: What was the point in reading the story at the end of this long process? Did the children find out anything new, besides seeing some printed stuff the teacher claimed to represent the story they had been busy hearing about, enacting, discussing, dissecting and analyzing for nearly one week? By the time they got around to seeing the printed text of the story, most of them probably knew it by heart. Trying to put myself in the place of a six year old, seeing the known story in printed words would leave me cold. I would find it boring to go through it again in yet another, so far the most difficult, version. I would most assuredly miss the point that the whole week's effort had been directed towards preparing me and my classmates to peruse the text with the purpose of teaching us to read. In fact, I would find reading quite anticlimactic and pointless after all the interesting activities, particularly hearing the story for the first time read by the teacher, and then having acted one of the characters.

Yet, the approach and the order of importance of teaching the elements of reading is summarized in the above for all of the whole-word books. Some utilized rhyming texts that children were to memorize so that when they got to "reading" the text they would remember the words when they encountered them in writing. Thus, deriving the spoken word from the written one became quite unnecessary and pointless.

It is now clear that the basic difficulties in teaching to read, whether by the letter-sound or the whole-word method, began to become evident during this period. Studies relating to reading and the teaching of reading began appearing during this time. Smith lists the following number of reading related studies:

1884-85 - 1; 1886-90 - 1; 1891-1895 - 2; 1896-1900 - 10; 1901-05 - 6; 1906-10 - 14.

These 34 studies that were made in the course of 26 years had no discernible effect on the methods or practice of teaching reading, but they were the first to call attention to such factors as the rate of reading, the distinction between silent and oral reading, and individual differences in reading habits.

Scientific research

The true beginning of the scientific investigation of reading was during the period between 1910 and 1924. There was a reason for this. During World War I it was discovered that thousands of American soldiers who had completed school could not read well enough to follow printed instruction used in the course of military activities. This discovery caused quite a shock in the general public and among the teaching professionals. Numerous articles appeared and discussions were held about this lamentable situation and a ground-swell of demand sprung up for the improvement of reading instructions. Reading research expanded greatly and it quickly branched out in various directions. Some researchers studied adults who had suffered brain damage, and as a consequence lost their knowledge of how to read. They extrapolated their findings to children who were not able to learn to read in the first place and suggested that the reason for their failure was "congenital alexia" or "word blindness."

One of the questions the researchers needed answer for was, of course, how to measure reading proficiency on a scientific basis. In 1909 Edward Thorndike presented his handwriting scale, which was followed soon by three or four other tests, the best-known one being the (William S.) Gray Standardized Oral Reading Paragraphs, published in 1915, which contains paragraphs of text with increasing degree of difficulty of vocabulary and sentence structure.

Also as a consequence of reading research, silent reading began to replace oral reading in schools. This was the outcome of investigations of the habits of experienced readers, and the observation that their comprehension was better during silent than oral reading. Researchers drew the

conclusion that since the purpose of reading instruction was to develop desirable reading habits, learning to read must be based on the type of reading that resulted in efficient comprehension — namely on silent reading. The flaw in this reasoning is that no differentiation is made between the process of experienced reading and the process of learning to read. Silent reading became the magic bullet to kill illiteracy. During 1921 through 1923, Smith lists nine hefty books published on the subject of silent reading and teaching to read. This was in addition to the many articles and monographs published in the various educational and psychological journals. Between 1910 and 1924 a total of 436 accounts of reading related studies were published in the various journals, which represents on the average 2.5 studies completed every month.

Progressive education

An interesting trend appeared on the educational scene just about this time. It is the so-called progressive movement, which has its roots in the educational philosophy of such thinkers as Rousseau, Froebel, Pestalozzi, Dr. John Dewey and Francis Parker.

John Dewey was an American philosopher, psychologist, and educator. He taught at the Universities of Michigan, Minnesota, Chicago, and at Columbia University until his retirement as professor emeritus in 1931. While in Chicago, Dewey turned his attention and considerable talents to the reform of educational theory and practice. His principles emphasized learning through varied activities rather than formal curricula and authoritarian methods.

Francis Parker was superintendent of schools in Quincy, Massachusetts in the late 1870s, where he put into practice his ideas of progressive education which he developed mostly in Germany when he studied there Pestalozzi's teaching methods. These ideas included informal methods of teaching and the introduction of science courses into the curriculum. Parker later became supervisor of the Cook County Normal School in Chicago. He improved teacher training as the founder and first principal of the Chicago Institute, later the school of education at the University of Chicago.

Dewey and Parker's work and writings were largely responsible for the drastic change in pedagogy that began in the United States early in the 20th century, as emphasis shifted from the dictates of the institution to the needs of the students. The tenets of the progressive educational movement are perfectly valid. In essence they are:

- Make the learning process interesting and useful by doing away with regimentation in the classroom.
- Build on the child's interest in the world around him.
- Teach practical and useful things to the child rather than the curricula perceived by "authorities" to be necessary.

As is the case with the mental legacy of many brilliant people, the great ideas, once in the hands of the followers, were only as great as the abilities of the individual practitioners allowed them to be. For good teachers progressive educational principles worked wonderfully. For mediocre ones they became empty shells without the all-important kernel. A good teacher can fire up the interest of the children, in fact make them interested in matters that may be elements of a regular curriculum. With a good teacher, following a teaching plan may seem spontaneous and yet be purposeful. With a poor teacher the process of "progressive teaching" may be haphazard, unfocused and aimless, it may even be distracting and confusing for the children, even though they may have a great time in school. Unfortunately, the facts of life are that there are certain things that need to be learned in order to successfully function in a given society. For this reason it cannot be left up to the child what subjects to learn and what subjects not to learn. Secondly, it is not possible to have

any interest in matters a person is unaware of. For this reason, children need to be exposed to certain subjects even if they, at the moment, see no use for them, and therefore have no interest in them. It is in this area where progressive education sometimes misses the boat by teaching only subjects the children express interest in. For example, how could a child who grew up and lives in a poor urban environment express interest in life in an agricultural area, or in the Amazon jungle, or in biological subjects, if he has no inkling that such things even exist? Also, progressive education sometimes provides the "easy way out." Isn't it more fun to take a class in appreciation of modern music rather than algebra?

But getting back to the subject of the historical development of reading instruction in the United States, Smith points out that the "activity programs" that became popular in many schools during this period of time have their roots in the progressive educational principles. Since their description lumps up reading related activities from beginning reading through the fourth grade, it is difficult to judge how activity programs worked in conjunction with teaching at the initial stages of reading. It appears, though, that the only systematic element in teaching reading was whatever the standard reader series provided, if they were used at all.

Remedial reading instruction

With the use of standardized tests to measure reading proficiency, which came into wide use by the 1920s, the dismal results became known and they alarmed educators. This was the time when the idea of remedial reading instruction emerged. This was also the time when the concept of reading disability was first suggested. Instead of pondering that something may be wrong with the methods of teaching to read and seeking to make corrections, it was proposed that otherwise perfectly normal children had certain mental or nervous-system defects that prevented them from becoming readers. In 1922 Clarence T. Gray published "Remedial Cases in Reading: Their Diagnosis and Treatment," among the works of a number of other reading experts, most treating the failure of children to learn to read as if it were a serious illness requiring therapy.

After the mid-1920s the pace of reading related research grew exponentially. Additionally, a trend began, which later became known in critical circles as "dumbing down." It is essentially the practice of making the texts of primers and readers suit the low reading proficiency of the pupils rather than teaching them such that they can achieve better results in reading. Smith studied 16 primers and their progressive revisions published during this period. In the 1922 version they had an average of 406 newly introduced words. By 1928 this was "down-sized," to use a present-day expression, to 378, and by 1931 only 289 words were introduced on the average, with the minimum being 207 and the maximum 333. I must comment here that the normal speaking vocabulary of first graders is five to ten thousand words, according to a 1959 study by Burleigh H. Shibles. What a bore it must be for the children to waddle through readers that are based on such an incredible paucity of words.

As an aside, it is interesting to note that many of the reading researchers, particularly those who had published books on the subject of reading and teaching to read, were hired by the publishers of readers as consultants or members of editorial staffs and thus had an opportunity to shape the future revisions of the primers and readers. Thus, whatever concepts or misconceptions they had eventually found their way into the readers and had a lasting and noticeable effect on the way reading is taught and on the life of many people.

During the period of 1924 to 1935 progressive teaching was in its bloom. The instruction of reading in such schools that used the progressive philosophy of teaching was integrated into other activities rather than being taught during periods assigned exclusively to reading instruction. The result of the progressive teaching advocates becoming part of the development staff of the readers was that their ideas became incorporated in the publications. The consequence of this was that even

in the schools that did not wholly subscribe to the progressive educational methods, the contents of the primers and readers had an influential effect on the way reading was taught, as reader series became the backbone of reading instruction for very practical reasons. Phonic instruction very definitely took the back seat, if it was allowed into the car at all. There was a good reason for this. Due to the research into the habits of experienced readers, a fatal misconception took root and spread like kudzu in Alabama.

Charles C. Walcutt in "Tomorrow's Illiterates: The State of Reading Instruction Today" (1961) explains it. During the five decades between 1880 and 1930, the view of the progressive education advocates went through an evolution regarding reading. To illustrate the changed view Walcutt quotes from S. W. Patterson's "Teaching the Child to Read" (1930): "Phonetically-minded teachers should remember what alphabetic-method teachers had to learn; namely, that modern psychological understanding of the nature of the reading process clears away the age-old notion that the letter or the letter-sound is the learning unit in reading. Although the words are made up of letters, a skillful reader does not look at each letter in recognizing the word." This is perfectly true and correct, of course. That is exactly the way skilled readers read, glancing at words, recognizing them for what they are and then processing them to get the meaning of the sentence and paragraph. The problem developed when this finding for *skilled readers* was applied unquestioningly to *learning readers*, and the method of teaching reading became based on whole word recognition, which in a skilled reader is the result of long practice.

The next step in the development of the meaning-emphasis method of teaching reading, Walcutt points out, was based on the following observation: The skilled reader extracts meaning not from the recognition of single words, but from the context of full sentences. Again, this is true and correct. But the gun was jumped again in assuming that it is correct to start out with trying to teach the beginner reading techniques that develop in experienced readers as the result of long practice. Reading experts argued that for this reason, namely the habits observed in experienced readers, the child's learning to read should also start with sentences, so that he can immediately and directly get the meaning of the text. As long as the meaning of the whole sentence is extracted, the details of the small parts do not matter all that much. For example, they argued, if the reader encounters the sentence "My father was in a battle" but because the word "battle" is unknown to him substitutes "war" and reads "My father was in a war," his reading is perfectly acceptable and demonstrates the reader's maturity, because "battle" and "war" are synonymous. They are synonymous in the sense that they are only similar but not equivalent in meaning. If this reasoning is accepted, the inadvertent result is that the alphabetic writing is converted into word writing. The printed word "battle" may mean battle, war, combat, campaign, anything. The advocates of this school of thinking do not recognize the necessity that a child, in order to expand his vocabulary, must be able to pronounce unfamiliar words on the basis of printed letters so that he can then learn their meanings. This process is what Walcutt calls the confusion of writing with language.

Walcutt also points out the dubious contribution of the Gestalt movement of psychology that was fashionable in the 1930s, which in essence says that we see the whole of objects before we see their details. We recognize faces, for example, as whole impressions, rather than getting the shape of the lips, etc. and compounding the details. This observation was arbitrarily extended to the reading of words, with the claim made that we recognize words as unities, rather than as the sums of letters. Therefore, the way to learn reading words is to memorize their looks. Walcutt says, "This bit of Gestalt is true enough, but it has almost nothing to do with the way people actually read, because words are not like faces, which one gets impressions of at one glance. They are symbols of sounds, and to be properly seen as such they must be seen in terms of the letters that compose them. One can, thus, see a whole word reliably only if he knows the letters so well that he sees the whole and parts almost simultaneously. But this is not what Gestalt is dealing with when it describes the manner in which we perceive *new* objects, the parts of which are completely unfamiliar."

Returning to the evolution of reading instruction in our schools, the "look-and-say" way of teaching reading was accompanied by an the uneven progress among the children. The classes were divided into groups according to "reading needs." There were groups that did not get any phonics instruction at all, as they "did not need them." Presumably, these were the more gifted children who could figure out for themselves what reading is all about. The rest received ear training for speech sounds, plus such instruction as the correspondence of the initial sound and letter of monosyllabic words. The key principle was that the instruction of reading should be adjusted to the individual need of the child. Picture how this could be achieved by a single teacher in a class of 30 children.

According to Smith, this educational epoch produced 654 published studies, many of them, one would assume, were longitudinal, taking several years to conduct. The topics of greatest attention were reading interest, reading disability, and readiness for beginning reading. The studies also covered such subjects as vocabulary load of readers, evaluation of reading tests, factors involved in reading achievement and phonics. 180 of the studies, or over one out of four, examined the problems associated with deficient readers, which would indicate that deficient reading remained a problem of significant magnitude.

The next 15 years, the period of 1935 to 1950, is identified by Smith as the era of international conflict, and it encompasses the years following the great depression, World War II and the beginning of the Cold War. Because of the upheaval these events caused, the subject of reading and reading instruction moved away from the center of public attention. To be sure, it remained a central topic in the teaching profession, and given the limited resources that were available, it continued to represent one of the main areas of research and study.

Perhaps it is useful to make an observation at this point. Before, during and after this period, reading has been considered as a single subject. No differentiation was made, except by a very few isolated researchers and thinkers, between the act of fluent reading and the process of learning to read. Nearly all of the works dealing with reading lump up these two fundamentally different activities, essentially ignoring the all-important initial phase of learning the elementary skill of reading, namely the conversion of printed symbols to a form of language the reader is conversant in. Nearly all of the works that I happened to review glossed over this phase of the learning process and dealt mainly with the development of skills and strategies that experienced readers use in reading. The reading related learning experience in kindergarten and the first grade are placed on an equal footing with learning in, say, the fourth grade, the perceived difference being only in the rate of reading speed and the number of words used in the text.

For a person who learned to read in another country and in another language, the very concept of vocabulary control is incomprehensible. Under such conditions once a person had learned to read, that is to say, knows the mechanics of converting graphic symbols into language, there is no need for vocabulary control, as all words of the language can be read whether the reader knows their meanings or not. It is only in English speaking countries and in modern times that vocabulary control is used in the successive books of a reader series, because of the perceived difficulty of the student to decode the printed words. Elsewhere the emphasis is not on the ability to decode words already in the speaking vocabulary of the student, but rather on expanding the receptive and expressive vocabularies of the student.

During this period the whole-word method and its derivatives were in general use and "word recognition skills" were widely taught. This was the era when the use of "context cues" and "structural analysis" were first suggested and came into use as "decoding tools." Context cue simply means guessing at the identity of printed words that the pupil does not recognize by their shape. The guess is based on the context of the sentence that contains the word. Structural analysis means that certain parts of a word may be recognized, and by the help of familiar word fractions the whole word is synthesized or guessed at. It appears that relying on the letters making up the words and the

correspondences of those letters with speech sounds was studiously avoided so as not adversely affect the comprehension process, one would presume. In the higher classes, emphasis was placed on developing advanced reading skills, such as "locating information," prompt "evaluation," and "skimming" for highlights.

According to Smith, the number of published studies during these fifteen years is 1,317, or on the average 7.3 studies initiated each month. This, in spite of the fact that during the war years of 1943 and 1944 only 54 studies (2.3 per month) were started. As we see, reading research was still a hot activity.

Yet, in spite of all the research, the new student-centered teaching methods, scientific evaluation techniques and tools, deficiency in reading ability among graduating students unyieldingly persisted. Explanation for this phenomenon had to be found. This became a fertile field of research. Reading disability could be attributed, according to various experts and researchers, to limited learning capacity, congenital or acquired neurological defects, conflicting cerebral tendencies, poor perceptual habits, ill health, improper glandular functioning, poor vision or hearing, abnormal emotional reactions, poor environment, inappropriate teaching, etc. It is surprising that inappropriate teaching was listed among of the many "reasons" of the lack of success. Still, the insistence on using the whole-word method as the principal means of teaching reading did not change.

Searching for other methods

There were new developments in the field of teaching reading during this period of time, but by and large they were ignored, even though they proved to be quite successful in the limited geographical areas where they were applied. Leonard Bloomfield, a prominent linguist, developed a system of teaching reading based on linguistic research and the peculiarities of the English language. His system was later developed by Clarence Barnhart into a linguistic primer, "Let's Read." Julie Hay and Charles Wingo in 1948 published a primer and teacher's manual, "Reading with Phonics," based on the explicit teaching of the letters of the alphabet and the systematic but implicit application of phonics rules in developing decoding skills. Both of these courses teach reading in one year so that by the end of the first grade children can read everything without need for vocabulary control.

The last period Smith discusses in her book is the fifteen years from 1950 to 1965, which she calls the period of expanding knowledge and technological revolution. Looking back from the end of the 1990s, the "technological revolution" of the mid-century is no big deal. But just consider the facts that television became a household item during those years, computers came out of the laboratory and were put into everyday use in institutions and corporations, the space age began with the launching of Sputnik I in 1957 and Explorer I in the following year, automation and robotics gained an ever widening footing in industry. Things were astir and the world seemed to take off on a steep trajectory of technological progress.

Learning to read was still a problem. The whole-word method was still dominant, even though phonics made some tentative comeback in isolated areas. In 1955 Rudolf Flesch published his "Why Johnny Can't Read," which stirred up quite a commotion both among members of the general public and the reading professionals with its assertion that the whole-word method was to blame for the dismal situation and wide-spread illiteracy and functional illiteracy. It is interesting to note that Flesch learned to read in Austria, his native country, and in the German language, therefore he had no bias for or against any of the methods used to teach reading in the United States.

Problems with teaching reading were experienced in the United Kingdom also. Similarly to America, the medium was blamed for the failure of the teachers. The villain was the English orthography, which hopelessly confused children. Sir James Pitman, one of the many would-be reformer of English spelling in the course of history, developed a phonetic alphabet consisting of 43

symbols to correspond to the sounds of the English language. One assumes that Sir James selected a particular dialect among the many spoken in the U. K. and for that selected dialect his alphabet was, indeed, phonetic. The letters of his alphabet, the Initial Teaching Alphabet, or ITA, correspond as much as practical to the letters of the regular alphabet, while the rest are similar in design to regular letters. The idea was that after the children learn to read using the phonetic writing, they transit gradually to the use of text printed in regular English orthography. Although this method caused a brief flame-up of interest among educators, it never became popular because the children, in effect, had to learn to read twice.

Although many studies were done during these fifteen years, none of them had much effect on teaching methods, and very few of them made the differentiation between teaching the mechanics of reading, namely effective decoding, and developing proper reading habits as experienced readers.

To summarize the events of the next 30 years, we must refer to a later publication, as a sequel to Nila Banton Smith's book. Dianne Lapp and James Flood in "Teaching Reading to Every Child" (1992) divide these three decades into the following periods:

- 1965 — 1973 Humanistic influences on reading. Educators began to emphasize reading instruction which must be based on the need of the individual. Personalized instruction was adapted in many schools. [I must note that this sounds very much as a return to the progressive educational era of forty years before.]
- 1973 — 1980 Reading as information processing. Following a great deal of research into the nature of the reading process, the view was accepted that reading is information processing. The method of teaching reading was modified accordingly. [Again, the authors refer mainly to reading past the elementary stage of decoding.]
- 1980 — present Whole-language perspectives. Reading is regarded as a process of meaning construction, a transaction between the reader, the text and a context (or the schemata of the reader).

Lapp and Flood state that there are two essentially different methods of teaching reading that have been in use historically. One is the "sequential reading approach," the other is the "constructive reading approach." They categorize the currently available classroom reading instructional material under these two headings as follows:

I. SEQUENTIAL READING APPROACH

- A. Basal Reading Instruction
  - 1. Whole-word influence
  - 2. Phonics influence
    - a. ITA
    - b. Words in Color
  - 3. Linguistic influence
- B. Programmed Instruction
- C. Managed Language/Reading System

II. CONSTRUCTIVE READING APPROACH

- A. Language Experience
- B. Individualized Instruction
- C. Whole Language (integrated language arts)
  - 1. Trade books
  - 2. Basal readers

It is rather laudable and helpful that Lapp and Flood categorized the various instructional methods for easy overview. It is quite apparent from the listing that there is a great deal of confusion, disagreement, and groping around for an effective way of teaching reading. One reason for this, of course, is that schools try to perform two entirely different tasks at the same time, namely to teach the mechanics of reading, and teaching subject material simultaneously. To further complicate matters, some of the students in the very same classrooms are past the stage of learning the mechanics of reading, therefore are interested only in subject related reading. These children are bored to tears by having to go through all the exercises and work sheets that are intended to monitor progress in decoding and the development of comprehension. In the meantime, those children who still have problems with the mechanics of reading are expected to learn how to decode printed text, while at the same time show progress in comprehension, which is impossible without proficiency in decoding skills. Having to work with this dilemma, the teachers will try any combination of methods to overcome the problem. This is called *eclectic* method of teaching reading: a little of this, a little of that. The problem still remains. The curriculum does not allow putting comprehension aside for a while in order to concentrate on decoding alone. Perhaps the only program where striving for simultaneous decoding and comprehension development is set aside is Reading Recovery, which will be discussed in detail Chapter 9. But even in that program, the only truly new element is the individual tutoring that is based on defining the lacking skills and then teaching those skills in such manner that the student has a better chance of learning them by cognitive learning methods. Methodical programs for teaching those skills by the associative learning process are still non-existent or rare.

In the readers following the sequential reading approach, the material is organized in a logical and strictly defined structure that is tied in to the perceived intellectual development of the students. As a general rule, basal series readers are used in grades one through six, sometimes through eight. They use controlled vocabulary and simplified sentence structure, and are aimed at developing word recognition, comprehension, and study skills. The first readers use "patterned word repetition" for teaching sight words. The stories are, on the average, about 40 percent narrative, 20 percent poetry and 40 percent expository. Their critics consider these readers uninteresting, with distorted sentences, and too restrictive with their elaborate teachers' manuals.

Within these parameters are the whole-word (or look-and-say) method and the phonics method.

The phonics group includes the seldom used ITA teaching method. Also in the phonics group is listed the Words in Color, a method developed by C. Gattegno in 1962, which is based on using charts of words, letters and sounds represented in forty-seven distinctive colors for the forty-seven phonemes Gattegno identified in the English language.

The linguistic method of reading instruction is also assigned to this group. The authors mention "Let's Read" by Bloomfield and Barnhart (1961), the "Merrill Linguistic Readers," the "Miami Linguistic Reading" program and the "Palo Alto Linguistic Program." Some of them are illustrated, others are not. The criticism against the linguistic programs is that there is no single linguistic approach to reading instruction, that the strictly controlled vocabulary does not take into account the speaking vocabulary of children, that decoding is overemphasized, and word-by-word reading is encouraged. Furthermore, only words with regular spelling pattern are taught initially, and there are no or few pictures in the books to stimulate interest and aid in the decoding of unknown words. This last comment indicates that the critics do not understand the basic idea of the linguistic method at all. The linguistic method is based on decoding the printed words from the letters they contain to produce language. There is no need for cues other than the letters themselves in the words to identify words.

Programmed instruction was popular in the 1960s and 1970s. It used workbooks, teaching machines or computers to lead the pupil through sequential frames of instruction. If one frame was

successfully internalized, the student could proceed to the next frame, ensuring seamless learning of skills with immediate feedback.

The managed language/reading system combines the logically organized content presentation with the possibility of individualizing instruction. It also includes a detailed monitoring and record keeping system to keep track of the progress of the individual students.

It is obvious that Lapp and Flood consider the constructive reading approach as the most up-to-date method of teaching reading. It is claimed to be based on the student's cognitive and language development progress.

Within this group of approaches is the language experience method, in which the teacher writes down stories dictated by the students and learning reading based on those stories. The idea here is that the topic is of sure interest to the students — since they dictated the story — and they use the children's own vocabulary. Throughout the program the teacher is obliged to help each child with phonics, vocabulary and comprehension development.

The individualized reading is based on the student establishing the pace and sequence of reading instruction and selects the material he wants to read. The authors do not make mention of how the basic reading skills are taught, therefore it may be assumed that this reading program is for students in the higher grade levels.

Whole language is a teaching philosophy rather than a teaching method and is based on the idea that language is a natural phenomenon and literacy is best developed through the natural and purposeful use of the language. No sequential instruction of published reading series form a frame for this instructional program. Instead, the child's own understanding and language producing abilities govern. Reading, writing, speaking and listening are integrated in the framework of research projects, art projects, and reading projects. It appears that this system also relates mostly to the later phases of literacy development, not to the learning of the mechanics of reading, which is left totally unexplained. I have a strong impression that it is tacitly accepted that those pupils who cannot learn to read by themselves are left behind or shunted to other methods of reading instruction.

So, here we are at the present! There is a wide selection of teaching methods in use, ranging from very structured systems to no system at all. The claim is that among all of these methods an appropriate one can be selected and used to teach every child to read. One is baffled then, that there is still a persistent lack of universal literacy among the graduates of our school systems. How does one explain this?

In the next chapter we will examine the two dominant methods, the meaning-emphasis and code-emphasis schools of teaching reading and try to shed light on what may be their shortcomings that cause them to be successful in the majority of cases and remarkably unsuccessful in a very significant minority of cases.

Chapter 8

Teaching to Read in the U. S. — Critical Review

We all must agree that teaching reading in the United States, as it has been practiced up to and including the present, is an extremely complex matter. There is a proliferation of methods, non-methods, reader series and children's trade books that can be and are used in the process of teaching children to read.

A vast number of devoted teachers labor day in and day out pursuing that frustratingly elusive goal: Teaching every child to read. It is not lack of dedication, or will, or interest on the part of the teachers that causes so many children to drift through years of schooling without acquiring a practical skill in reading that would allow them to properly function in our reading-oriented high-technology society. There is no place in the world where so many instructional aids are available and in use as in the United States — tailor made readers, work books, evaluation sheets, story books, copying machines, you name it — to make reading instruction effective. Various travel documentaries come to one's mind about poor African and Asian countries showing schools where children sit on rough benches or on the ground in a ramshackle "school" studying reading with hardly any instructional materials evident. I don't know how effective their education is, but I suspect that if the children have the opportunity to stay in school for a year or two, they become literate in at least as high a proportion as do their contemporaries from Maine to California. It truly is a baffling dilemma.

A basic misconception in American reading instruction

One of the major problems causing this failure to teach every child to read seems to be that mediated reading and fluent reading, as a general rule, are not differentiated. Furthermore, it appears that a large segment of reading instruction professionals are not even aware of the existence of mediated reading, and must have the misconception that the novice reader is reading exactly the same as the experienced reader, only slower. They must believe that the novice reader, just like the experienced reader, looks at what seems to be the global appearance of words and identifies them for whatever they are by instant recognition.

Mediated and fluent reading are mixed together and regarded as a single task which is scheduled and taught over several years. Children are still being taught mediated reading (word identification skills) well into the higher classes of grade school while simultaneously they are required to read for meaning, to evaluate stories, to find the structure of stories, and to learn factual subjects from reading material.

To refresh the memory, we defined mediated reading as converting visual surface structure (written word) into auditory surface structure (spoken word) so as to enable the processing of information via customary channels of thinking from surface structure through underlying structure to deep structure, thus achieving comprehension. Mediated reading can be the reading of one word, or one phrase, or one sentence that the reader has difficulty in handling in the course of fluent reading. In mediated reading it is understood that the reader is familiar with the spoken form of words he reads and no vocabulary building is involved.

Fluent reading can be defined as extracting meaning (communication by a sender remote in time and/or space) through the visual sensing of symbols rendered in a known surface structure (written text) that is coupled to a known underlying structure (lexicographic meaning and syntax in

a language), and converting the information to deep structure (meaning), thus achieving comprehension. In fluent reading the reader instantaneously recognizes each word he encounters so that there is no conscious effort involved in processing the written surface structure of words. This recognition is based on the familiar sequences of letters comprising printed words and not on the global shape or appearance of the words. If it were based on global appearance, typographical errors would hardly ever be detected.

As we see, mediated and fluent reading are two different animals. When the reader's attention is divided between tasks so fundamentally different in nature, he cannot concentrate on either. If mediated reading were out of the way, children could turn their full attention to the meaning and content of the text. If they can read out all words and they do not know the meaning of some, they will ask and the teacher can explain. This is vocabulary building, which is one of the normal functions of schools. In the case of words that have irregular pronunciation, the teacher can pronounce them so the children can learn together the spelling, the pronunciation, as well as the meaning. Children, by the way, have practice in figuring out the meaning of new words from context. That is how they learned the language in the first place. They do not need any special instruction on how to do it just because the new word is encountered in a written text rather than in a stream of sounds. Occasionally they will misconstrue the meaning of a word, but they will find out about it soon enough either through repeated encounters that clarify or verify the meaning, or by misusing the word and receiving direct comment relative to the misconstrued meaning or wrong usage.

By mixing exercises in mediated reading into reading material intended for subject reading, the clarity of purpose of the subject reading is fragmented and corrupted. The children do not know what is expected of them. Inadvertently, they are made to develop a poor habit of not turning their full attention to a single task at a time.

Additionally, because of the side task of mediated reading, subject reading exercises are drawn out over an abnormally and unnecessarily long period of time, often spanning several days. This causes the story at hand to lose its immediacy and interest, making the process boring. Reading becomes a chore with all the irrelevant work sheets to be filled out to belabor the trivial. If the children were allowed to read the story without first talking it to death with querying after expectations, with background information drills, and exploration of "what the children bring to the story," they would experience the impact and novelty of the story, after which they would be ready to discuss it orally. Generally, children are full of energy and like action, they are not scholars given to analyzing subjects with infinite patience and dedication. They are after new experience, since they have very few old experiences. For them to analyze at length some simple story is an excruciating bore and they cannot help but associate it with the activity of reading. Is it any wonder then that they become non-readers even if they have the ability to read at the end of the grade school? Those children who discover the joy of reading do so because they can read books and stories without interference, without having to report on them, or fill out sheaves of seat-work forms. Does a good teacher, or any teacher for that matter, need filled-out forms to judge a child's advancement in reading? Isn't a child's participation in the oral discussion following the reading of the story sufficient to evaluate his progress in developing comprehension?

It would be much more useful to have the children read more stories without exhaustive post-reading evaluation to ascertain how much they retained of their content, than to read only a few of them and spend days in verifying levels of comprehension by completing "scientifically designed" tests. Children do not need to learn comprehension. The need for comprehension is a built-in software of the human brain. The brain forms its schemata based on comprehension. Children need to practice reading for the sake of practice, so that its mechanics become effortless — in other words they need to get past the mediated reading phase as quickly as possible so they can become proficient fluent readers. Comprehension will evolve by itself. All those professors who first did re-

search on comprehension and wrote learned papers about the subject developed their own comprehension without anybody teaching them the subject, as did all of the people before the subject was studied at all, and most since it has been.

Meaning-emphasis methods

In the course of reading the literature and following the media — when they happen to address the subject of teaching literacy — it becomes quickly very clear that the most widely used methods of teaching reading can be grouped together under the heading of meaning-emphasis. Whether it is whole-word or whole language or language experience, they start out with using words or sentences as the spring-off point of instruction. The term "word" is used only to denominate the group of letters before the children. It is not explained that words are the molecules of language, that they consist of sounds when spoken and letters when written. In fact, the use of the word "letter" is studiously avoided.

There is an incredibly wide range of literature on the subject of the meaning-emphasis method of teaching reading. The books I have reviewed and those I have leafed through tend to be longish; quite a few — particularly the newer publications — have many illustrations and excellent multicolor graphic design work. They generally give some "theoretical background" introduction, then start out at the pre-school stage and continue to the sixth, even eighth grade. They are full of discussions of classroom practices, sometimes belaboring the trivial and the obvious. The focus is on the brass tacks of teaching, what kind charts, flash cards, name tags are used, what kind games are useful. There are many fictitious descriptions of conversations, presentations and discussions given to help the teachers pattern their classroom work after the books. I found that the vast majority of these books are long on talk and meaningless diagrams of how decoding and comprehension and vocabulary interact, how things are internalized, and how to scaffold and ladder certain skills to achieve certain other things. In most cases I put down these books with the nagging question in my mind, "Where is the beef?" or else with bafflement over the author's unfamiliarity or disregard of the results of pertinent and important research and theoretical work on the subject of reading and the instruction of reading that was available at the time of writing.

To give an example, let us go back fifty years to one of the fountainheads of the meaning-emphasis school of thought and take "The Improvement of Reading — A Program of Diagnostic & Remedial Methods" by Arthur I. Gates, a highly respected expert in the field of reading related research. The book is regarded a classic in its field, judging by the many references to it in other works. The book was first published in 1927; its third edition came out in 1947, containing 570 pages plus 80 pages of appendices.

It is in Chapter 6, titled "Diagnosis and Instruction in the Pre-reading Period," that Professor Gates gets to dealing with the initial steps of teaching to read. After a series of tests to ascertain that the child is intelligent enough, has verbal aptitude, good vision and hearing, his handedness and sightedness coincide (fifty years ago there was apparently such a thing as right sightedness and left sightedness, just as there is right handedness and left handedness), that he has no speech impediment, but has good health and vigor and emotional stability, the child commences the learning of essential reading techniques. These include the habits of following the printed line and proceeding from left to right. This is usually done with the use of pictures arranged in the proper order. As to reading technique, Gates states, "Before children are expected to recognize words they may be guided in developing more effective techniques of perceiving words. For example, they may be assisted by comparisons of similar words. If the words 'cat' and 'dog' are printed or written on the board, the two may be compared. At this stage it should not be assumed that the pupils can recognize and name the letters. They can be helped, however, to make their comparisons by observing

the word from the beginning to the end. Thus they may note the difference in the initial parts of the two words, the rather similar part in the middle, and the difference in the end . . . The major part of this pre-reading work is to set up the right directional approach and to give the pupil some idea of the various types of shapes and characteristics of words, thereby helping him to adopt a critical, analytical attack by means of which he will later succeed in singling out the most telltale characteristics."

Later in the same chapter, on page 168, Gates discusses for the first time in the book the basis of our writing system, namely the alphabet. This is the only place in the entire book that the alphabet is discussed, therefore I will take the liberty of quoting the discussion "in toto."

> "**The Alphabet.** Test 5 in the Gates Reading Readiness Test is a test of ability to read the letters of the alphabet and some of the digits. This test is included for two reasons. First, it is advisable to know, in the case of each child, what letters, if any, he can recognize. In a typical school a number of children will be unable to recognize any of the letters and some children will recognize them all on entering first grade. A second reason for including this test is that the pupil's knowledge of the letters is usually an indication of the amount of his previous experience with words and other printed materials. Now and then one finds a child who can recognize all the letters but shows little other evidence of being familiar with words. Occasionally a child will be found who can read quite well on entering the school but is unable to recognize individual letters. The author encountered one child in a first grade whose reading ability was fourth-grade level but who was unable to recognize twenty of the twenty-six letters of the alphabet. This shows, of course, that a pupil can learn to recognize words very well indeed without knowing any of the letters, although it is a little unusual.
>
> "The fact that knowledge of the letters correlates rather well with other evidence of reading readiness has given rise to the mistaken idea that one of the easiest ways to increase reading readiness or to equip a child to learn to read is to teach him the letters. This is unsound. In the first place, letters are rather difficult things to learn. Some of the letters are much more difficult to learn to recognize than are typical words. Furthermore, intensive teaching of the letters seems to contribute very little, in many instances nothing whatsoever, to the pupil's proficiency in recognizing and reading words. In some instances, it is definitely misleading in that a pupil tends to depend entirely on recognition of the individual letters instead of taking advantage of more useful features of configuration and of larger parts within the word. In general, the difficulty of the task of learning to recognize the letters and the slight contribution it makes either to ability or interest in reading in the initial stage strongly suggests the advisability of letting the pupils learn the letters gradually, if not quite incidentally, during a period of months.
>
> "Teaching the letters, in other words, except as they are realistically called for in other activities, is not a recommended feature of the pre-reading program.
>
> "Various contacts with letter forms are desirable during the reading readiness program. Children may be encouraged to look through ABC books and possibly to play a few games, where they really want to, with alphabet blocks, and to note letters where they serve a function. If aisles or doors of the schoolroom or closets in the room carry identifying letters, these may be pointed out. If Barbara has an initial B in the corner of her handkerchiefs this fact may be shown. There is no objection to playing Lotto and the like. If children begin to note the first letters in words on the bulletin board and elsewhere and ask what they are, the teacher should promptly answer. In other words, the pupil's natural curiosity should be satisfied and a variety of normal situations which attract attention to letters may be arranged. The purpose in all of this work, however, is merely gradually to increase the pupil's aware-

> ness of letters and his familiarity with them. The child will learn a letter here and there and gradually add to his stock. Many of them will be more definitely introduced at strategic times later in the reading program. One of the many effective ways to teach them is building up a word picture dictionary. In this work the pupil starts with a few words and gradually adds others, classifying them under the initial letters. After two or three months of work his dictionary is unlikely to include words beginning with every letter in the alphabet. It may take practically a full year to introduce them all. In general, it may be said that learning all the letters of the alphabet is an enterprise for the first full year and not for the pre-reading program."

And this is the totality of what Professor Gates has to say, in his 570-page book, about the alphabet, about learning the letters of the alphabet, and the role and importance of letters in our alphabetic writing system. It is a total of some 725 words in a book of 180 thousand words in length. On re-reading the second paragraph of the quotation, one finds it preposterous in its suggestion that "The fact that knowledge of the letters correlates rather well with other evidence of reading readiness has given rise to the mistaken idea that one of the easiest ways to increase reading readiness or to equip a child to learn to read is to teach him the letters." If it is a fact that the knowledge of letters correlates with reading readiness, how can a scholar and responsible person say it is a mistake to teach the child the letters? What kind logic did Professor Gates use in his reasoning to arrive at such convoluted and ill-advised conclusion? Not that he is alone in this attitude. In fact, a vast majority of reading professionals share his views or adopted them as they are, without first examining its logic.

Albert J. Harris, Director, Office of Research and Evaluation, Division of Teacher Education, City University of New York, in 1962 published "Effective Teaching of Reading," one of the opus magnums of the whole-word method. It was written seven years after Rudolf Flesch stirred up the pot with "Why Johnny Can't Read." Harris took a year of sabbatical to write it. On the following pages I intend to discuss Harris' book in some detail. It is not because I have any desire to pick it to pieces, as it were. My purpose is to show the stance that he takes, the teaching methods he advocates, and the arguments he makes in favor of them. They are all very similar to a good number of other authors' position who are all convinced of the workability of some variety of meaning-emphasis method of teaching reading. Since these views need to be discussed in some detail in order to understand some basic misconceptions that drive the actions of a large segment of reading educators, we might as well do it here.

Its title notwithstanding, the book is not a "how to" book, but an explanation of what the various teaching methods consist of and goes into classroom practices recommended by various authors. It states to be an unbiased work, and it deals with both the whole-word and phonic methods; however, even from the tone of the book it is evident that the author is decidedly in favor of the whole-word method. It does not deal with statistics or results of studies attesting to the effectiveness of the whole-word method, but takes it for granted that it is The Way of teaching children to read.

Harris defines reading as "the meaningful interpretation of printed or written verbal symbols. Reading involves sensing, perceiving, achieving meaning, and reacting in a variety of ways; and through reading much important learning takes place." He postulates that elementary school reading programs have a threefold goal: Developmental reading, Functional reading and Recreational reading. It is interesting to note that Harris sees these different functions as activities performed in parallel or simultaneously. This, of course, may be quite understandable, because Frank Smith's watershed work, "Understanding Reading," in which he differentiates between mediated word recognition and instant word recognition was published nine years later, in 1971. The need for developing mediated reading skills had not yet been explicitly pointed out in 1962.

"Beginning To Read" is the subject of Chapter 3. It deals with whole-word teaching for the first 17 pages of the 23-page chapter. Harris recognizes that strong differentiation exists in the class of beginner readers. He says of reading, "The high group [best readers in the class] by February or March are capable of some independence. They have reached the point where they can do individualized silent reading in supplementary pre-primers and primers . . . Phonic principles are taught to the whole class together, partly for economy of the teacher's time and effort, but mainly because the fact that a child learns words slowly by the whole-word visual study does not necessarily mean that he will also be slow in learning to use phonic principles." This seems to indicate his looking favorably at the use of phonics in learning to read, however, four pages later he states: "The claims of outstanding results that are made by the authors of several of the newer phonic methods can hardly be ignored. The available studies tend not to substantiate the claims of superiority for the intensive phonic methods. Experimental tryouts of new methods with proper controls are urgently needed. Until such verification studies are available, a somewhat skeptical attitude of watchful waiting is appropriate."

Later on Harris describes the process of learning to recognize words: "Usually a new word is introduced in a sentence, which is first spoken by the teacher, then presented visually on the chalkboard or by arranging printed word cards to make the sentence on a chart holder or flannel board. The other words in the sentence should, of course, be familiar. Children are encouraged to look at the word carefully while saying it. They may be called up to 'frame' the word with their hands, to match the word in the chart holder with the same word on the board, to select from a number of word cards on the chalkboard ledge the one that matches a particular word on the board or chart, etc. Picture clues can supply reminders when the child forgets words. Unfortunately, for some children the reading matter tends to be neglected in favor of the pictures.

"In the earlier stages of reading, most children rely on the shape or configuration of words; their length and distinctive visual features. Thus a word like 'grandfather' or 'elephant' has a distinctive appearance which makes it easy to discriminate from other first-grade words. On the other hand, beginning readers often have trouble with words which are very much alike in size and shape, like 'on' and 'an,' 'saw' and 'was,' 'went' and 'want,' 'and' and 'said.' When a beginning reader continues to rely exclusively on configuration, he tends to become increasingly confused as the number of words with similar general appearance grows."

Strangely, in spite of this statement which neatly summarizes the inherent problem of the whole-word method, Harris, like other whole-word advocates, refuses to concede that the best way of identifying words is to remember their letter configuration, i.e. to use the advantage an alphabetic writing system gives a reader. With enough practice, i.e. reading, the letter configurations will be embedded in the reader's memory and then he can instantly and automatically recognize the familiar words from the visual image based on letter configuration — in other words, read whole words at one glance. Thus, while for a practiced reader reading by whole words makes sense, for the learner reader the process of becoming familiar with the graphic details of each word cannot be bypassed.

He seems to be satisfied with the customary whole-word way of learning, as illustrated by the following. "Word analysis involves the combined use of three procedures: use of context, structural analysis, and phonics. Children are given practice in making intelligent use of the meaningful setting in which a new word appears. Structural analysis means dividing a word visually into meaning parts which can be recognized or attacked as sub-units. This includes dividing words into prefixes, roots, and suffixes, and separating compound words into their components (schoolroom). The phonics learning of the second grade usually include the long and short vowels and most consonant blends and combinations. In the third grade the program includes remaining vowel principles such

as diphthongs, silent consonants and the introduction of syllabication. The use of picture dictionaries is also of some value in these grades."

Harris apparently considers it perfectly natural that the mechanics of reading, or word recognition, is taught routinely during at least three years, a pedagogical stance that is fully congruent with the whole-word teaching method. He goes on to say, "During the first grade the vocabulary of basal readers is restricted almost entirely to words which are part of the speaking vocabulary of most children, so as to allow instruction to concentrate on the development of word recognition skills. In the second grade this is still largely true, although some unfamiliar concepts and words are introduced. In the third grade a transition takes place, with a shift of emphasis from word recognition to word meaning. By the time children are ready for third-grade reading they can recognize about a thousand words at sight (including plurals and other simple derivatives) and have the structural analysis and phonic skills to work out the pronunciation of many more words. Word recognition is no longer a major problem for those who have made normal progress."

It is interesting to note the studious use of the phrase "word recognition," rather than of the word "reading." This is understandable, as children are expected to recognize words as unities, or logograms, rather than recognizing them as sequences of letters.

Harris touches on the subject of phonics about half way through the book. He states, "In the past few years modern methods of teaching reading [referring to the whole-word method] have been viciously attacked by zealots who are sure that starting children with an intensive phonics program is the solution to all problems in the teaching of reading." Here he refers to the following books: Rudolf Flesch, "Why Johnny Can't Read," Sybil Terman and Charles Walcutt, "Reading: Chaos and Cure," and Charles Walcutt, "Tomorrow's Illiterates." Harris continues by saying, "Nowhere in these books can one find evidence of a realization that phonics present any difficulties to young children. They seem to be unaware that some children cannot blend sounds together, or that the phonetic irregularities of many of the first-grade words can be very confusing to the child who is introduced to reading through phonics. They recommend programs in which children spend hours in drill on the sounding of words in isolation and are required to memorize hundreds of words before they are given any reading material that is meaningful." Yet two paragraphs later he admits: "As a part of a total word recognition program, phonics is necessary and important. Children who know the sounds of letters and letter combinations and can use these successfully in attacking words that are not within their sight vocabularies have an invaluable tool."

Rather than to prove the merits of the whole-word method, Harris tries to dismantle the arguments of its critics. "In recent years a number of critics have complained that the vocabulary of elementary school readers has been reduced to the point where children are not being given an opportunity to learn as fast as they can. An English professor [Arther S. Tracer, Jr. in "What Ivan Knows That Johnny Doesn't"] states that Russian children learn about 2,000 words in the first grade and about 10,000 in the first four grades, and questions whether we are not short-changing American children. His conclusion is that if we should employ phonetic method of teaching from the beginning, as the Russians do, we could almost forget about vocabulary control after the first grade. Characteristically, this critic doesn't mention such relevant points as the fact that Russian children begin reading a year later than American children, that the Russian language has an almost perfect correspondence between the spoken and printed symbols, and that exposing children to a large number of words does not necessarily indicate that they are learned or understood by all children. Nor does he seem to know that American children read anything besides basal readers. Whether or not the utopia that the enthusiasts for a phonic approach anticipate actually exists can be determined only by further research, as has been pointed out earlier."

On the subject of the contents of the various basal readers, presumably of the whole-word way of teaching, Harris says, "There are substantial differences among the various series. Some give separate plans for fast, average, and slow groups. One series has two readers for each grade, the

regular edition and a 'classmate' edition, which has the same stories and illustrations, with the language simplified so as to be a grade or more lower in difficulty. The manual for this series advocate a plan in which whole-class activities are combined with some group activities. Preparation and discussion are carried on with the entire class. In silent reading each group reads its own version, and oral reading is done separately with each group." Harris appears to find nothing wrong with this approach, which in essence says: Let us accommodate those who failed to learn reading by downgrading their reading material. He fails to realize that this practice condemns the "slow readers" to second class status, rather than trying to remedy the problem and teach the children once and for all how to read.

The results of the then prevalent teaching method are shown in the following statistics Harris gives in "Distribution of Reading Grade Scores on the Metropolitan Reading Test, Elementary, at the Beginning of the Fourth Grade." (Data from Directions for *Administering, Metropolitan Achievement Tests,* World Book Co., 1959)

Percentiles	Grade Scores
90-98	6.3-7.9
75-89	5.1-6.2
50-74	4.0-5.0
25-49	3.3-3.9
10-24	2.6-3.2
3-9	2.0-2.5

According to these figures, one half of the children entering fourth grade reads at or better than fourth grade level, which is great, depending on what the standard for fourth graders is. But more important is the fact that the 10 to 24 percentile group is 1.4 to 0.8 years behind their grade level, while the 3 to 9 percentile group is 1.5 to 2 years behind theirs, meaning that when they enter the fourth grade, they read as they were expected to at the end of the first grade. The unfortunate 1 to 2 percentile is even worse off. Most likely they cannot read at all. But what do all these data mean in absolute terms? In order to determine this, let us look at the number of words the readers for the various grades contain, according to Harris' count.

Description of reader	Highest		Median		Lowest	
	New	Total	New	Total	New	Total
Pre-primers	112	112	58	58	40	40
Primers	199	311	101	159	81	121
First Reader	232	477	177	338	114	235
Low Second	362	718	229	556	55	372
High Second	445	1043	223	796	172	584
Low Third	436	1479	353	1116	40	866
High Third	437	1916	353	1469	191	1122

Correlating the grade levels with the number of words to be learned in the various grades, and using the median word counts of the readers, the following number of sight words comprise the reading vocabulary of children below the median entering the fourth grade:

Percentiles	Grade Scores	Number of sight words
25-49	3.3-3.9	1680 - 2100
10-24	2.6-3.2	600 - 930
3-9	2.0-2.5	340 - 560

It seems incredible that these facts can be true. A full one quarter of pupils entering the fourth grade can read not even one thousand words after having been taught to read for four years, including kindergarten. The next higher quarter can read a little over two thousand words. Children entering fourth grade have a speaking vocabulary of at least fifteen thousand words, which means that half of them are anywhere from 85 to 98 percent illiterates, since they cannot read that proportion of their receptive verbal vocabulary. This data is, of course, over 35 years old. Unfortunately, the 1993 National Adult Literacy Survey bears out these figures, meaning that all of the research and dissertations and books and new trends in teaching that transpired since then had no tangible effect on the results of teaching reading. The most alarming aspect of this state is that the reading professionals seem to find this situation perfectly normal and acceptable. The majority of them cling to some variety of meaning-emphasis method of teaching to read, dismissing the phonic or the linguistic methods, or falling back on them to use as a Band-aid if all else fails. They either ignore the fact that those systems are effective, or pay them lip service only.

More meaning-emphasis views

But let us move forward with our review of the meaning-emphasis books. Dolores Durkin is another highly visible and respected reading expert with a long and esteemed career at various universities and research organizations. Her book, "Teaching Them to Read," first published in 1970, fifth edition published in 1989, is another vintage work of the whole-word school. It runs 523 pages and lists 420 references to prior scientific publications, 46 of them her own.

By the time the fifth edition went to press, Durkin had evolved from advocating the pure "look-and-say" system of teaching reading to what she calls "eclectic system," which in essence is taking a piece from any method of reading instruction in sight in order to teach the child to read. This is, of course, a laudable allowance, but it is hard to understand why she stopped at the halfway mark, in view of all the research and fresh understanding that developed during the twenty years between the first and last editions. She still seems to have a problem reconciling herself with the fact that English uses an alphabetic writing system, the basis of which are the letters of the Latin alphabet. She misses the point that for this very reason beginner readers first and foremost need to learn to recognize letters instantaneously, and that this skill is essential, because efficient word recognition is based on remembering the letter sequences making up printed words and not on memorizing the general appearance of the words. She must have been aware that this finding had been shown in a number of prestigious research reports.

Instead of proposing that the child learn the letters, Durkin promotes "print awareness," which she characterizes as follows: "Print awareness refers to understandings about written language that are acquired slowly, steadily, and often early among children brought up in highly literate environments. Others, in contrast, have little knowledge of the conventions of print and thus have to start at the beginning. The need for teachers to attend to the beginnings of print awareness with some children is the reason for listing its basic elements as follows:

1. "The child knows that words exist in a written as well as spoken form.
2. "Knows the difference between graphic display that is a word and one that is not. [One wonders how is this possible unless the child knows the letters and is aware of the fact that letters make up words and that there is a correspondence between letters and speech sounds.]
3. "Knows the difference between a letter and a word.
4. "Understands that empty space marks the end of one word and the beginning of the next.
5. "Understands that words (in English) are read in a left-to-right direction.
6. "Understands that lines of the text are read from top to bottom.
7. "Understands that, like in spoken language, written words make sense."

She does not add that the children should also be taught that written words consist of letters, what those letters look like, and that letters stand for speech sounds. Only on page 218 of the book — a little past the halfway point — is this subject brought up in Chapter 8, "Phonics: Content." The following covers the subject, with emphasis as used by Durkin:

> "English has an *alphabetic writing system.* This means that words are written with letters that represent speech sounds. The nature of our writing system explains why a substantial portion of the subject matter for phonics is about letter-sound correspondences. Because knowledge of letter-sound relationships, such as the one that exists between [the written letter] **p** and [the sound] /p/, is applied to syllables, additional subject matter pertains to ways of dividing unknown words into syllables.
>
> "Phonic instruction serves one purpose: to help readers figure out as quickly as possible the pronunciation of unknown words. When unknown words are in their oral vocabulary, the pronunciation allows readers to do what is essential for comprehension: access their meaning. Proficiency in decoding is useful, therefore, only when the word being figured out is familiar orally."

These two paragraphs just about sum up the gist of mediated reading and the helpful role of phonics in it, but they do not even mention the primary importance of thoroughly knowing letters so that they are instantly recognized and not confused one with another. It is amazing that a person can write so much about reading and learning to read in the English language without properly dealing with letters. This is the only place in the entire book where the subject of letters is brought up, and this is the extent of the discussion.

Like all advocates of meaning-emphasis methods, Seymour W. Itzkoff, teacher of "The Reading Process" at the Smith College and author of "How We Learn To Read," published in 1986, claims to be unbiased in the great debate of meaning-emphasis versus code-emphasis teaching. The truth seems to be different. The following couple of paragraphs in the discussion of the two educational programs reveal his position:

> "So committed were the Merrill authors to this notion of drill in sound recognition that they chose an extremely radical path for their basal reader. It was not enough that the stories sounded like amateur doggerel, so annoyingly onomatopoetic in their repetitions of sounds, and seemingly so non-contextual just to provide the proper drill. But, all illustrations were eliminated. Just plain pages with black markings. Why?

> "The answer was clear and simple. In the traditional Scott-Freeman-type look-say reader, the illustrations often illuminated the story as specifically as did the words on the page. The child, after reading the 'whole words' silently, would be asked comprehension questions from the teacher's manual. The questions would be answered correctly and insightfully. Yet too often these children could read barely a word on the page. Too much context, some critics charged."

One needs to do a double take. What does Itzkoff say? Children could read barely a word on the page and yet discuss the content of the story on the basis of illustrations? Is he serious in calling that reading? What are we doing here? Creating yet another generation of comics book readers?

Itzkoff mentions the Lippincott's reader of 1969, which was based on "instead of vocabulary control in terms of word frequency we use phoneme/grapheme control in terms of simplicity and regularity." He goes on to say, "As for Lippincott's phonics/linguistic approach, it was a virtual disaster. The oddness of the stories was already a minor put-off both for children and teachers. The vocabulary load was too much. The few children who could cope certainly didn't need the fallacious assistance of so-called phonics regularities. The slow readers faltered, for readers for the reading-disabled needed much more specialized and graded materials. Thus Lippincott gradually toned down the rigorousness of its phonics/linguistic commitment, reduced its vocabulary load, and made over its entire basal program into a format not inconsistent with most of the middle-of-the-road "meaning"-centered series of the 1980's . . . The substitution for look-say/sight methods by phonics, while it may have rescued a small percentage of non-readers, has crippled many more."

One could go on and on discussing books on meaning-emphasis methods, for literally there are scores of them. Let me briefly mention one more, the newest one I found on the shelves of the J. Paul Leonard Library of the San Francisco State University, the storehouse of some 3.5 million literature items. It is "Teaching Children to Read" by D. Ray Reutzel and Robert B. Cooter, Jr. It was published at the end of 1996. They both have a doctorate in reading related areas. They depart from the traditional methods of teaching reading, namely from meaning-emphasis and code-emphasis methods, where the teaching of reading follows the path of "parts to whole," or "skills-first, authentic reading later." They feel closest to the Whole Language system, which is more of a philosophical stance than a teaching method, and is based on the integration of the four language modes, namely speaking, listening, writing and reading. It is not clear to me how this works in practice, particularly at the initial stage of learning to read. Reutzel and Cooter lean towards a "balanced literacy program."

This is how they describe this program, developed by New Zealand and Australian teachers: "An essential aspect of balanced literacy instruction is the belief that children learn to read by reading and learn to write by writing. As a direct manifestation of this belief, children and teachers typically engage in daily sustained reading and writing activities using easy, sometimes graded or carefully leveled trade books, enlarged trade books, themed units, and self-selected writing projects . . . In summary, teachers practicing the elements of balanced literacy instruction put whole language theory into practice by teaching reading and writing strategies and skills in authentic ways that make sense to learners. They believe that children begin by making sense of print and expecting to learn; and in the process, they learn to read and write." It sounds very much like relying on the cognitive learning ability of the child, expecting him to figure out for himself what reading and writing is all about.

About halfway through this 575-page book with 941 references (29 of the referenced works are authored by Reutzel and 12 by Cooter), they discuss a word-identification strategy for balanced reading programs. They define "word-identification strategy" as "a process for decoding words in print that is simple enough for children to use in everyday reading." The strategy consists of the

application of four successive steps to determine the meaning and/or pronunciation of unfamiliar printed words. The first step is reliance on context clues. Here the word is to be guessed at from semantic cues which relate to the meaning of the sentence, or on syntactical cues which relate to the grammatical structure of the sentence. If more than one possibility exists, the second step is to be applied, which is the examination of the beginning sound. Reutzel and Cooter give an example of how this process works in a sentence: "But Mrs. Jones is (**supposed**) to be a *real* monster." They say, "In the example several words could fit the context (*supposed, said, presumed, understood, about, apparently, evidently, truly*), so further verification is needed." Looking at the initial letter only *supposed* and *said* begins with an **s**, therefore, "of more than 250,000 words in the English language, children may quickly and efficiently narrow their search to two possibilities." The next step is to look at the ending sounds, but here they draw a blank as both words end in **d**. Now the fourth step needs to be applied, which is looking at the medial sounds, in order to figure out whether the word in question is *supposed* or *said*. Of course, Drs. Reutzel and Cooter did not think that the word could also be *suspected,* or *set,* or *shaped,* among probably another number of possibilities.

So here we are in 1997, seventy years after Professor Gates' book first was published on the merits of the whole-word way of teaching reading, and we still rely on guessing at words rather than actually reading them. Even when they briefly touch upon the topic of the alphabet, they cannot help equivocating. They say, "The alphabetic principle is the knowledge that speech sounds can be represented by certain letter(s) and that when a given sound occurs anywhere in a word it can be represented by the same letter(s). Discovery of the alphabetic principle is thought to be necessary for students to fully master reading, although this is not all there is to reading; for instance, the ability to use context clues is essential." Hold the horses! First of all, why do students have to *discover* the alphabetic principle? Why not simply tell them about it and teach them the correspondences? And to be really radical about the matter, why not teach all this knowledge to them in some systematic way so that they can simply *read* unfamiliar words by mediated word recognition, i.e. by converting the graphic symbols into sounds that correspond to words already in their speaking vocabulary? Would anything of real value be lost in not having to go through the four-step guessing game?

Whatever it is called, whether "look-and-say," "whole-word," "language experience," "whole language," "eclectic," or "balanced literacy," it is the same non-system that is built on the unexpressed hope that kids are smart enough to figure out by themselves what writing is all about, can make the vital connection between letters and sounds, and teach themselves to read.

Arthur W. Heilman, et al. in "Principles and Practices of Teaching Reading" (1986) quote B. D. Bateman, "Teaching is the teacher's intentional arranging or manipulating of the environment so that the child will learn more efficiently than if he were to learn incidentally from the world at large." One needs to stop and marvel at the insight and wisdom of Bateman, for this is precisely the element that is missing from the meaning-emphasis way of teaching reading. In the name of making reading instruction an interesting and meaningful experience, instead of *teaching* the children the mechanics of reading so that they can then get on with extracting meaning from reading, they try to let the child discover on his own what reading is all about and in some miraculous fashion become an experienced reader, without first having gone through the natural developmental stage of beginning reading.

The Language Experience approach

In reading books about reading and the teaching of it, I was frequently surprised at the inventiveness of theoreticians and teachers of reading in devising ever new ways of trying to teach reading as long as it does not involve making the connection between letters and sounds. One of the ways that was worked out at several places quite independently is the "language experience" teach-

ing of reading. It may be worthwhile to discuss this subject to illustrate how some of these frameworks of teaching reading may be based on misunderstandings.

Robert J. Tierney, et al. in "Reading Strategies and Practices" (1980) explain that the rationale for the language experience teaching of reading is the fact that children are born with a prowess for language acquisition and that this prowess can and should be applied to the acquisition of reading skills. Children bring to school a considerable oral language experience, and this experience can be moved from oral to written expression. Upon this foundation of oral language knowledge the children can develop the ability and interest to read widely, deeply and fluently.

While this sounds very logical and sensible, it only says that language experience may be useful and serve the above indicated purpose once the child can read. It does not say how it helps the child to bridge the gap between the aural surfaces structure of the language and the corresponding visual surface structure. The language experience method seems to involve facilitating, rather than teaching, children "how to learn to read" or "how to read." Again, it appears that the children are expected to learn to read by discovering how to read — meaning: by cognitive learning. Those who cannot do this seem to be forgotten and left behind.

Three methods of language experience are described, developed respectively by Sylvia Ashton-Warner (1958), Russell Stauffer (1970) and Roach Van Allen (1976).

The Ashton-Warner method is based on her experience with New Zealand Maori children. She gives a rather hazy description of how to use her method, stating that the learning experience should start with "intrinsic" rather than "extrinsic" experiences and that the student's reading should be "organic." She suggests that the teacher should reach into the minds of the students for getting the student's individual key vocabulary, the words of which are to be written on 12 by 5 inch cards. The teaching is totally individualized and requires a great deal of daily preparation. Researchers find that this kind of teaching has differential success, depending on the general attitude and desire of the child for learning. The reviewers of the method comment that Ashton-Warner's approach lacks sufficient definition to be understood or implemented.

The Stauffer's Language Experience method is based on the idea of providing the students with the opportunity to learn to read much as they learn to speak. It is a "total language arts approach" which relies heavily on dictated stories, word banks and creative writing.

The students dictate stories, which are read aloud by the class together, with the teacher pointing at the words as they read. The pupils are expected to learn the printed words during these common reading exercises. To ascertain that they do, "window cards" are used to block out all the words but one, which the student must identify. Once a word is identified, it is entered into a word bank, which is a personalized record of words a pupil has learned to read or recognize by sight. Once the word bank extends beyond thirty words, the alphabetic system of filing them is introduced. Using this vocabulary, the students then write stories. Interestingly, the authors of the book take exception to the undue emphasis placed upon the recognition of isolated words and feel that the students are thus exposed to the danger of becoming non-fluent readers and word callers. They go on saying, "If reading for meaning is our goal, the approach should place less emphasis upon word-perfect reading and the acquisition of single known words and give more emphasis to reading with understanding." This appears to say that the wording of the writer of the text is not all that important as long as the reader comes close to the intended meaning. One wonders how this might work with a scientific or legal text. What would these same authors say if somebody read their works with only approximate understanding of it and, as a consequence, misstate what they intended to say?

The last of the three listed, Allen's method, is based on the assumption that students acquire reading and writing skills in the same way they acquire oral language skills.

This, of course, is a mistaken assumption. For one thing, the learning of the native language (mother tongue) is a unique developmental experience that is very likely unreplicable past a certain developmental age. The fact that a child learns within a span of three years the sounds, grammar and a sizable vocabulary of a language without any system or framework of teaching does not indicate by any means that the same person any time during the rest of his life can repeat that accomplishment with another language or languages. Children during the period of learning the mother tongue have the natural inclination of imitating sounds heard and movements seen in their environment and lack inhibitions regarding making mistakes. It is possible that learning the native language coincides with certain physical developments in the brain, and once these are over, the process of learning changes. Communicating in the language spoken in the world of the developing individual is an essential survival tool, whereas reading and writing are not. This is also true to some extent in the learning of a second language by the immersion method, when the individual is thrown into a "foreign language" environment and is compelled to acquire a certain knowledge of the language in order to survive. Learning to read in that language is a different proposition, which often includes the learning of a different alphabet, or the symbols of an entirely different writing system. In learning a second language past the early childhood years, a conscious effort is required of the individual to learn the correct pronunciation, grammar and an adequate vocabulary of the new language. There is nothing natural about learning to read, even though in the case of children with an acute ability of and giftedness for cognitive learning, it may seem a natural process.

This is not to say that it is impossible to go directly from written symbols to meaning, but that is not the norm for readers. I know several people who read English fluently and understand the text, yet cannot understand spoken English, much less to speak the language. For these people English is their second or third language, their learning was strictly book learning, and they live in non-English speaking countries. Thus their experience has absolutely no bearing on the task of a native English speaking child who is faced with learning to read and write in a language he is verbally proficient in.

Allen does not describe exactly how to conduct the language experience process, but he gives examples. He conducts oral discussions on topics of interest, writes down sentences that the pupils dictate. Certain activities involve the entire class, others smaller groups, still others individuals. "Learning centers" are the place of small group activities. The main means of learning to read is the writing and reading of stories dictated by the children themselves. Allen breaks down this process into thirteen steps, which start with the discussion of topics of interest. While the stories are discussed, the teacher and students talk about the letters of the alphabet, their names, their formation and the sound they represent, however, he does not seem to advocate the systematic learning of the letters, their names and corresponding phonemes. Once the stories are written down, they read them together with the teacher pointing out each word. Once a word appears five or six times, it is put on a chart of "words we all use," thereby building up a vocabulary. Once this vocabulary matches the one used in the reader, the children can begin to work with the reader. Studies of this method showed no advantage in effectiveness when compared to other teaching methods.

Tierney et al. discuss "Strategies for Improving Word Identification." It is interesting to note that they call the process improvement rather than learning of it. The unit overview gives a clear picture of the perspective of the writers: "No aspect of reading instruction has been the subject of more debate than that dealing with word identification instruction. These debates suggest that instruction in word identification, particularly in phonics, is the single most important ingredient in the entire reading program. Such arguments seem to disregard the notion that word identification includes skills other than phonic skills. These arguments ignore the notion that word identification and phonics are only a means to an end: reading for understanding." The authors are definitely on the wrong track here. Understanding is based on deriving meaning, and the meaning of a word cannot be determined unless the word is accurately identified and then placed into the context of a sen-

tence. Since most English words have several meanings, the precise identification of the word is a prerequisite of getting its specific meaning in the sentence under consideration. Accurate word identification, therefore, is paramount to gaining understanding.

The authors describe four methods of word identification. Evidently, learning words by sight is, correctly, not considered word identification.

The **Analytic Method** is the first they mention. It is the most widely used way of the traditional teaching of phonics. It is based on the acquisition of the following skills:

1. Auditory and visual discrimination
2. Learning the grapheme-phoneme correspondences
3. Sound blending to make words
4. Contextual application to verify meaning

The **Linguistic Method,** sometimes also called Synthetic Word Families method, where similarly spelled and pronounced words are taught in groups. It is based on teaching letter-sound correspondences and blending sounds into words; increasing the student's sight vocabulary by using the consonant substitution method; and aiding word identification skills through blending word elements.

The **Syllabaries Method** is a variation on the above, where syllables are taken as the units of writing, based on the practical aspect of ease of pronunciation of syllables rather than individual graphemes. The drawback here is the apparent neglect of letters. Illustrations are used to convey the sounds of syllables, such as the picture of a bee for "be" or the numeral 4 for the word "fore." This appears to be a rather contrived method that neglects the basic fact of English being an alphabetically written language.

Goodman's Reading Strategy is based on Kenneth Goodman's psycholinguistic theories, which state that reading involves certain universal processes. In reading the reader selects the appropriate and necessary language cues to make predictions, then verifies these predictions, finally processes the language cues if the predictions prove untenable. A complex diagram is drawn to illustrate this "seeing cue → making prediction → verifying prediction → seeing if the prediction makes sense" process. As Tierney's book went to press, Goodman was working on a modified version of his method.

Of these four methods the first one is most widely used, often even by meaning-emphasis practitioners as a last resort in "word identification." The second one is the most useful of them all, as it is, in fact, the most effective method of teaching reading, and is not only a word identification method. As a byproduct of learning to read with the use of this method, the students acquire a powerful tool in applying the mapping characteristics of English orthography in decoding unfamiliar printed words. This decoding takes place on an automatic, subconscious level, and if the spoken word does not ring a bell in the reader, the reader knows that the answer must be found in the dictionary.

This brings us to the "other camp" in the reading instruction field of contest.

<u>Code-emphasis methods</u>

The code-emphasis methods of teaching reading have their point of departure in the fact that the English language uses an alphabetic writing system. In English orthography, very unlike to the orthography of other languages using alphabetic writing, there are not only letter-sound correspondences, but also letter group-sound group correspondences. Many times there are overlaps in these, meaning that the same sound groups may be written in various cases by the use of different groups

of letters, a practice that has historic origins. The proper mapping depends on from what language and at what point in time was the word in question adopted. The mapping principle is not all that old, although it is old enough to have been accepted and utilized much wider than it is.

Arthur W. Heilman et al. in "Principles and Practices of Teaching Reading" (1986, Fifth Edition) comment that phonic instruction is the most controversial issue in teaching reading. They say, "Even today, unfortunately, many people believe that phonics is the natural enemy of reading for meaning. Individuals who oppose phonics argue that teaching children to read by focusing on letter-sound relationships interferes with their comprehension. We, too, oppose phonics if a child is required to sound out every word with the correct pronunciation of words becoming the primary goal of reading instruction. The first objective of sounding out an unknown word is to establish its identity, but this is not the end of the process. The word is identified so that its contribution to the meaning of the sentence can be utilized. If a child sounds out a word without pursuing the meaning of the sentence, she is either a casualty of poor instruction or not quite enough instruction." It is interesting that they acknowledge the unfortunate fact that so many members of the teaching profession regard phonics with aversion. Somewhat different is the situation among those outside of the profession.

In the section "Foundations of Instruction" the authors mention that the Texas State Board of Education requires that the kindergarten reading programs in the state include the teaching of the following: (1) discrimination of sounds for each letter of the alphabet; (2) discrimination of visual shapes, forms, and letters; (3) understanding the direction of formal print; following oral directions; (4) telling what a story is about; (5) appreciating repetition, rhyme, rhythms, and alliteration; (6) following simple story line in stories read aloud; (7) supplying missing words in oral context; and (8) recognizing the ordinal and spatial features of print. These skills and elements of knowledge are all prerequisites of learning to read, and one marvels at the wisdom and insight of a government organization to formulate such sensible requirements.

This is understandable, of course, because elected officials are more sensitive to public pressure than college professors, and the public demands better results from the educational system than turning out a quarter of the students functionally illiterate. The problem of ineffectiveness in teaching to read is not new, nor is it newly defined.

In his 1961 book, "What Ivan Knows That Johnny Doesn't," Arther S. Trace, Jr. analyzed 16 of the most widely used American basic readers. The most obvious observation he made is the almost identical vocabulary control in these books. They all introduced 300 to 400 new words in each year so that by the end of the fourth year American students had a reading vocabulary of 1,500 to 1,800 words. Trace comments that one reason for this is the anticipation that the children will be taught by the "whole-word" or "look-and-say" method, which requires that students memorize each word as if it were a characters in Chinese writing. He goes on to explain that this method of teaching reading was introduced some 30 years before, in the 1930s, and was in wide spread use at the time his book was written. The memorization of whole words is usually accompanied by the introduction later of the letters at a rate of one or two a month, with the process extending over a period of two, three, or even four years. He comments, "There is a limit to the number of words that even a bright child can learn when he is not taught the sounds of the individual letters of a word but is rather made to memorize the way each one looks on the page." This, of course, mandates the reduction of the number of words that are introduced and used in the readers.

I don't want to be accused of being a practitioner of literature churning, by which I mean to say to fill a book with quotations from other people's books and call it an original scientific or whatever work. Nevertheless I need to resort to the practice of quoting from the works of other authors for two reasons. First, because I want to illustrate that the referenced ideas existed and were available in print so long ago, second, because I share the validity of the ideas but want to leave the credit where it belongs.

Eleanor J. Gibson and Harry Levin in their "The Psychology of Reading" (1975) discuss decoding and the beginning of reading. They say, "According to Shankweiler and Liberman (1972), the major barrier to reading acquisition is not in reading connected text but rather 'in dealing with words and their components.' Reading with little comprehension, they say, is a consequence of reading words poorly, not the other way around . . . The child must learn to attend, first, to the graphic information on the page in addition to the meaning it conveys. Second, the child must learn the correspondence rules that link the phonological to the orthographic system. Since English does not simply represent one letter with one sound directly and uniquely, the two systems are related at a more complex level. The unit for 'decoding,' as some call it, requires learning to deal with units at more than one level. Intra-word relations must be analyzed if transfer to new words is to occur, and this does not happen automatically in many children. Finally, structures of words are related; there are 'families' of them, knowledge of which provides enormous economy of processing."

Gibson's opinion points toward the linguistic approaches to reading instructions. She says, "A better view, we think, is that linguistic information can be represented in two ways, phonetically and graphically. These systems map to one another (both ways), not necessarily in a one-to-one fashion, but by correspondence rules. English spelling does not map to sound by way of single letters representing single phonemes. Nor can a spoken word often be spelled correctly by the use of a simple phonetic code. That is why we must speak of mapping rules, which are often conditional and usually involve units larger than the letter and the single phoneme . . . We are speculating that the manner of teaching the mapping system could influence the outcome, and we are going to argue for a multilevel approach, possibly not the fastest to get results at first, but we want the one that yields most transfer to new material and aims for parallel processing of a word's informational features — graphic detail, graphic structure, semantic content, and so on."

In 1958 several large scale studies on learning to read were conducted in the Boston area, involving more than two thousand first-grade children in four communities. The children were grouped by initial "readiness" as measured by a test of learning rate (the ability to learn sight words), knowledge of letter names, and ability to hear sounds in words. They were given three different programs of instruction, all of which stressed learning letters and sounds. Donald Durrell of the Boston University made an evaluation of the results. His overall conclusions were as follows:

1. "Most reading difficulties can be prevented by an instructional program which provides early teaching of letter names and sounds, followed by applied phonics and accompanied by suitable practice in meaningful sight vocabulary and aids to attentive silent reading. Among 1,500 children measured in June, only 18 had a sight vocabulary of less than 50 words; this is slightly more than 1 percent of the population. Four percent, or 62 children, had a sight vocabulary of less than 100 words.

2. "Early instruction in letter names and sounds produces a higher June reading achievement than does such instruction given incidentally during the year.

3. "Children with high learning rates and superior background skills make greater progress when conventional reading readiness materials are omitted from their reading programs.

4. "Children entering first grade present wide differences in levels of letter knowledge.

5. "Tests of knowledge of letter names at school entrance are the best predictors of February and June reading achievement. They relate most closely to learning rate in September."

These results point out the importance of the awareness training in the sounds of speech, the direct teaching of the letters, and the early teaching of phonics. But there are quite a number of studies that reach similar conclusions.

Jean S. Chall in "Learning to Read — The Great Debate" (1967), refers to another interesting study, which has an experimental approach to determine the importance of letter and sound knowledge. In 1962 Carol Bishop simulated a beginning reading learning situation by using adults. He studied the effect of previous training in letter-sound correspondences on success in learning eight Arabic words. Arabic is a phonetic language. The eight words contained only twelve letters. One study group received training in the correspondence of letters and sounds. The next was trained by learning similar spoken words and the corresponding written words. The third group received no prior training. The letter-trained group learned the eight words best; the word-trained group rated second; the group without previous training scored lowest. This experiment showed that letter training had more transfer value than word training. The letter trained group also knew more "phonics," i.e. they could give the sound for letters better than the word-trained group. When asked how they learned the words, most of the letter-trained subjects said they applied their letter-sound knowledge. Twelve subjects in the word-trained group had also learned the sound values of all twelve letters, and these people scored as high as the letter-trained group. When asked, they said they had tried to work out by themselves the letter-sound relationships. These twelve had learned the eight words as well as the letter-trained group.

Chall continues, "Bishop's study indicates that some people are able to induce correspondences for themselves, even though not directly taught to do so. But both this experiment with adults and experiments with young children indicate that direct teaching of sound-symbol correspondences can improve word learning. Not everyone may need such training, but it can probably help those who do not discover the correspondences for themselves. In the Bishop experiment the adults had had considerable previous experience with alphabetic languages, and yet about half of those receiving word training could not induce the letter-sound correspondences without direct instruction. We can probably expect children to succeed even less often."

Bishop's study is an example of experiments that demonstrate the importance of explicit teaching of letters and letter-sound correspondences. When related to learning to read in English, the situation is complicated by the fact that the alphabetic writing in the English language is not based on one-on-one correspondences of graphemes and phonemes, but rather the correspondences of groups of graphemes to groups of phonemes. As was mentioned before, this characteristic can be described best by the expression of "mapping" between graphic and aural surface structure of words. The mapping model was proposed as early as in 1933 by Leonard Bloomfield, and supported by Chomsky and Halle in 1968, and Venezky in 1970. Any successful code-emphasis system of teaching reading needs to be based on the mapping characteristics of the orthography. The phonic system uses mapping, but the linguistic system is the one that does it in a more systematic manner, going from simple and fully phonetic words and groups of words to the more complicated configurations and correlations.

The validity of the mapping theory was investigated by others as well. William Kottmeyer in "Decoding and Meaning: A Modest Proposal," (1974) reports on an analysis he and his colleagues completed. He states that, first of all, there are clear correspondences between groups of graphemes and groups of phonemes in certain families of words. Secondly, the most frequently used English words are the simplest in the sense that they are more likely to be monosyllabic, which is helpful in the learning to read process. They used "The Teacher's Word Book of 30,000 Words" compiled by Edward L. Thorndike and Irving Lorge to examine the most frequently used words, and their characteristics. This dictionary classifies words by their frequency of use per million words of text. The findings of the analysis are as follows, listing the frequency in descending order:

Frequency of Use	No. of Words	Single Syllable Words Number	Percent
AA group	1,027	643	63
A group	860	350	41
the 49-30 group	890	305	35
the 29-19 group	971	265	27
the 18-14 group	818	229	28
the 13-10 group	1,058	223	21
total	5,624	2,015	36

Kottmeyer makes the point that in elementary school relatively simple and short words occur in the reading text, therefore their decoding should be simple and learnable by associative learning. He favors the teaching of families of grapheme groups in words, such as *few, hew, mew, stew, new, dew*, or *fight, fright, plight, sight, tight*, etc. By learning to read such families of words, he says, the student practices the recognition of grapheme groups and their correspondences to morphemes, and will be able to associate this knowledge with unknown words for easy decoding.

Kottmeyer observes that in order to learn a sufficient number of symbols in a writing system using logograms, a person has to have a high capacity for learning, therefore the largest proportion of the population will not be able to learn a large number of the symbols, consequently will remain illiterate. Only a select elite will become literate. He points out, "Such was the history of the cuneiform writing of the Assyrians and Babylonians, of the hieroglyphics of the Egyptians, of the system evolved by the Chinese, and of the American look-and-say system."

Advocates of the meaning-emphasis teaching method say that teaching phonics is not practical, because children are forced to learn an incredibly large number of abstract rules which they then need to apply in decoding. It is much simpler, they say, to learn the words.

In 1969 Betty Berdiansky and her colleagues at the Southwest Regional Laboratory of Educational Research and Development analyzed 6092 one and two syllable words among the 9,000-word receptive vocabulary of six- to nine-year old children. They determined that these words involve 211 distinct spelling-sound correspondences, or "phonic rules," which relate the forty-six phonemes to a sizable number of graphemes. 83 involve consonant grapheme units and 128 vowel grapheme units. They also found that out of the 211 correspondences 45 did not fall into any of the general "rules" and these affected 661 words, or over 10% of the 6092 words investigated. This research seems to indicate that phonics is very complicated and that to expect young children to memorize the rules and then apply them is unrealistic, even if one expects them to learn "only" the 166 "rules" without learning the exceptions.

Nobody says that phonics is simple. It cannot be simple, because English orthography is not simple either. To use Winston Churchill's observation about democracy, which is the worst form of government except for all of the others, phonics is the worst method of teaching reading except for all of the others. We must remember though, that the phonics rules are not for teaching them explicitly. Obviously, children must not be required to memorize them. Rather, words and sentences with meaning must be provided to the children for reading, for practicing word recognition and for developing comprehension of the meaning of sentences. When words that take similar thought processes to recognize are presented in a group, the mind will deduce the proper phonic rule without having to spell it out and will apply it on a subconscious level when needed later. When a new grapheme is presented that corresponds to the same phoneme, the mind will make the connection and in the future it will try both ways of interpreting the symbol, then check which one makes sense, and use the version that does. Once the mind decides upon the proper way of reading an am-

biguous string of letters, it becomes a single acceptable recognition unit until proven otherwise, and from then on it will be handled as a whole-word recognition unit.

Frank Smith in "Understanding Reading" (1971) says, in learning to read, what the learner needs is "associations between visual and acoustic features, and these are not the same as 'letter-sound correspondences.' The fact that a child may develop competent skills of mediated word identification after phonics instruction does not mean that he is making use of the "phonic rules" as such, but rather that the phonics instruction has given him enough information to establish his own categories and rules *at a featural level.* A child is not helplessly dependent on detailed instructions; he has an active brain that will construct its own rules (which it has to do in any case) provided that information comes at the right time. And information 'at the right time' involves information about whether events are functionally equivalent or not, examples of the events that should and should not fall into the same category, and feedback about whether a category decision is right or not. The human brain does not function by learning lists or rules that are presented to it; the brain learns by looking for significant differences, establishing functional equivalencies, and deciding how events go together. The brain does not need to be told what to do, but it needs to know whether it is right or wrong in its decisions about what should be treated as the same, what should be treated as different, and how events should be associated. That is how a child learns to read — by drawing conclusions about similarities, differences, and associations."

Smith makes a point of the existence and importance of mediated reading which, he says, "is required to support immediate identification whenever the reader meets material that goes beyond his previous experience. But the skilled reader uses mediated reading techniques as little as possible, and the fact that he does so requires no elaborate explanation. Immediate comprehension is synonymous with facile and interesting reading. But mediated reading is hard work. The rate of progress is slower, there is a greater burden on memory, and the rewards, in terms of comprehension, are less. If we cannot read with immediate comprehension, we soon feel tired and bored."

The advantage of the linguistic method of learning to read is obvious in the light of Smith's observation: "A child cannot be shown many of the significant differences of written language: he has to discover them himself. The teacher must make sure that the child gets the information he needs to discover features — and establish feature lists — for himself." By going from the simple and phonetic to the more complex correspondences of English orthography, the linguistic method does just that. Smith continues, "What the child has to do is induce rules, to predict a regularity on the basis of information received on one occasion, and try it out to see if the rule is valid on another occasion. And this is perhaps the most critical aspect of the teacher's role as a supplier of information, and to provide feedback, to say 'right' or 'wrong.'"

Smith adds, "Finally, a child has to learn to read fast. There may be occasions when he is required by the difficulty of the text or the exigencies of the teaching situation to read slowly, letter by letter, word by word, but he has to learn that *fluent* reading is relatively *fast* reading, perhaps not much less than 200 words per minute. The reason that reading has to be fast we now know. The processing of visual information is not instantaneous but takes a significant amount of time, during which losses always occur. Information is very quickly lost in reading, especially if it is not condensed into 'meaningful' form and put into the long-term memory. A child who has to read letter by letter, or even word by word, has very little chance of comprehending. So while it is true that a child needs the intermediate skill of mediated word and meaning identification, he should not have to rely on them. It is not necessary that he learn them all before he gets on with the major objective of immediate comprehension, because it is only when the larger part of reading can be accomplished immediately that the reader can afford to stop and use, or learn, mediated reading skills."

Which is the workable system?

Persons with a high level of native intelligence discern the subtle and complicated relations between letters and speech, graphemes and phonemes, and can transfer relationships they had identified to unfamiliar similar configurations. In simple words, they can decode printed text and apply their decoding knowledge to new words they had not encountered before.

Those of us, whose mental powers are comprised of a smaller proportion of native intelligence, must learn these correspondences and practice them sufficiently so that the recognition of familiar words and decoding of unfamiliar ones can be done rapidly, effortlessly and on a subconscious level.

To put it differently, the smart ones can learn reading by themselves by using their cognitive learning power, while the slower ones need to be taught using the associative learning process. While the meaning-emphasis systems are unintentionally based on the utilization of cognitive learning, the code-emphasis systems are equally workable with cognitive and associative learning. Why then is the code-emphasis method still not used so widely? And why is the meaning-emphasis method still in such wide use?

In order to find an explanation as to why the meaning-emphasis method has prevailed for so long, Charles C. Walcutt, editor of "Tomorrow's Illiterates: The State of Reading Instruction Today," (1961) goes back to its origins and sheds light on how it came into being as an interesting combination of fallacies that was put together to make a "philosophy."

Walcutt says that "look-and-say" reading instruction, the first version of meaning-emphasis teaching of reading, came into being because of three important confusions of terms. First, reading as "pronouncing" was substituted by reading as "understanding." Next, the "knowledge of the language" was confused with and substituted by the "reading of written text." This was further aggravated by the confusion between "seeing" an unfamiliar word and "recognizing" a familiar one.

When a person learns to read by the phonics method, he has a good chance of being able to pronounce (i.e. read = convert printed mater into spoken words) unknown words on the basis of phonics rules. If the reader knows the word because it is part of his verbal vocabulary, he will understand it. If it is not, he won't, but still he will be able to pronounce it. This second type of reading is called by meaning-emphasis adherents "word-calling" and in their view is not reading (i.e. understanding the text). The fallacy of this argument is that the reader does not know the meaning of the word not because of any lack of reading skills, but because of a lack of adequate knowledge of the language as demonstrated by his unfamiliarity with the meaning of a particular lexical unit of the language. The way to cure this kind of shortcoming in reading is to increase the vocabulary, which has nothing to do with reading, but rather with learning.

Eye movement tests conducted on experienced readers indicated that they read one to several words at each eye fixation, which lead the researchers to the conclusion that reading was done by units of whole words or groups of words. Reading professionals decided on this basis that the teaching of reading should emulate the reading process itself and be based on the recognition of whole words, thereby streamlining the learning process by bypassing the laborious procedure of synthesizing words from letters. What the researchers did not look for and the teachers missed was that experienced readers when seeing an unfamiliar word fixate long enough on it, or perhaps make several fixations, to decipher and assimilate it, after which, if they remember it at the next encounter, will take one fixation and recognize it. This mental process, namely the instant recognition of words, is the result of prior "decoding" and memorizing of the words through many similar encounters.

In spite of the now adequate data to demonstrate the mistaken foundations of the meaning-emphasis teaching of reading, its advocates ignore them all because they are not congruent with their beliefs and convictions.

Jean S. Chall in "Learning to Read — The Great Debate" (1967) advocates the linguistic system which postulates that the process of learning to read can be divided into stages. The first one is the acquisition of the code, or the alphabetic principle, and its main goal is to enable the student to convert written language to spoken language, in which he has knowledge and experience. Later the stress in reading is placed on deriving meaning, interpretation, application, and appreciation. With the linguistic system sound-letter relations are not taught directly, although the child is given heuristic clues. Instead, the child spells out the words when he first learns them and later as a means of recall and attack. Leonard Bloomfield, the inventor of the system insisted that teaching should begin with words that are spelled regularly, from which the child can discover for himself the relationship between the sounds and the letters.

According to the meaning-emphasis advocates, any failure to learn reading is the result of any of the following reasons: the child himself, his family, our culture, the school situation, overcrowded classes, poor instruction, unprepared teachers, sociological changes, lack of good teaching materials, emotional, physical and psychological handicaps of the children. Please note that it is *never* the method of teaching reading by expecting the child to memorize the global looks of printed words. The phonics advocates name as the most important factor of failure the use of the wrong teaching method. They acknowledge though that even with the phonics method some children with personal handicap would fail to learn to read, although their number would be much smaller.

Chall's analysis of the experimental comparisons of meaning-emphasis versus code-emphasis teaching methods up to 1967 tend to support the view that the first step in learning to read in one's native language is essentially learning a printed code for the speech we possess. It does not support the prevailing view that considers the beginning reader as a miniature adult who should, from the start, engage in mature reading. Early stress on code learning, these studies indicate, not only produces better word recognition and spelling, but also makes it easier for the child eventually to read with understanding — at least up to the beginning of the fourth grade, after which point there is practically no evidence to show an advantage of either method of initial learning in the case of proficient readers. The studies also showed that systematic phonics makes it easier than intrinsic phonics for the child to acquire the code, especially the duller child. Thus, says Chall, "contrary to a great deal of opinion, a code-emphasis — but one that is extremely well programmed — seems indicated for slow and average pupils as well as for bright ones. In fact, bright children, the studies tend to show, are affected less by method than other children; in general they learn well under either code- or meaning-emphasis. Slow and average children are the ones for whom choice of method is most important."

From these comments it might seem that code-emphasis advocates are prone to sweep the subject of comprehension under the rug. It is far from being the truth. There is no question as to the ultimate purpose of reading, which is deriving meaning from text. The only question is when should the emphasis be placed on this function of reading. Right from the beginning, or only at a certain point in the learning process, when the student already possesses certain decoding skills. Not that all meaning-emphasis teaching aids are conducive to deriving meaning.

In "Learning To Read In American Schools" (1984, Richard C. Anderson, Jean Osborn, Robert J. Tierney editors), Isabel L. Beck has an article, "Developing Comprehension: The Impact of the Directed Reading Lesson." In it Beck objects to the text in early reading material because of their overly simplistic sentence structure, which is due to the fact that they are tailored for the whole-word method. "Since it is important that children be taught to develop a meaning-detection rather than word-recognition orientation to the process of reading, it is necessary that they have all the elements needed for constructing meaning. Young readers can recognize so few words in print, however, that developers of beginning reading materials must of necessity work within a severely restricted vocabulary pool to create textual materials. Such vocabulary limitations imposed upon the earliest texts often preclude the most direct way of conveying meaning." She then tells that to

help this situation, illustrations are given so the child can infer what the text is all about. An example is the following text: "I can run fast. I see a pond. I must stop. I can't stop. The pond is bad luck." The illustration then shows that a child ran so fast that he fell into the pond. On top of this questionable approach to reading for meaning, often the illustrations are so stylized that they are unrecognizable even for adults, or so artsy and ornate that they distract the children's attention.

Beck objects to the difficulty children face in subject learning. "Here we acknowledge that new knowledge is more readily acquired by oral/aural language experiences until children are able to comprehend as efficiently by reading as they are by listening. Sticht, Beck, Hauke, Kleiman, and James (1974) suggest this occurs around the seventh or eighth grade." Beck's objection is quite justified. It is inexcusable that it takes children six or seven years to reach a point when can learn by reading as easily as they can learn by listening.

Charles C. Fries, another prominent linguist, in "Linguistics and Reading" (1962) says, "as to what reading is, decoding or comprehension, the answer is: It is both. In the context of learning to read, one must say reading is unequivocally decoding. The reason for this is that the person learning to read must be able to convert the unfamiliar visual code into something familiar that can be processed by the brain to get the meaning, to finally arrive at the level of the deep structure. The brain is suspected to have a built-in mechanism to process input in the most efficient way. This ensures that once we have mastered the decoding of visual symbols, we will automatically skip the intermediate steps and to proceed to the fluent reading stage, where reading does equal comprehension. Unfortunately, this is a process that cannot be bypassed, otherwise short circuiting and confusion will occur, which often results in functional illiteracy, or at least in reading difficulty. Let the child — or adult — learn decoding, which can be accomplished in a surprisingly short period of time, before proceeding to the next step of reading development. The most efficient way of doing this in the English language is by the use of the linguistic method. Some children will go through the mediated reading stage very quickly, others will need more time. But in any event, the time needed should by no means be more than nine months or so, the equivalent of one school year. By the end of the first grade, all children should be able to read everything, even if some of them may need occasional help in decoding words with highly irregular spelling."

Unfortunately, rhetoric, pseudo-science and political considerations rather than reason, consideration of facts and unprejudiced professional opinion are the dominant factors in the broadest segment of the meaning-emphasis camp.

Fran Lehr and Jean Osborn in "Reading, Language, and Literacy" (1994) publish an article by Diane Stephens, "Whole Language: Exploring the Meaning of the Label," that makes mention of this problem. She notes that for thirty years during which the Whole Language method has been on the educational scene, the meaning of the term has changed. Whole Language is not a particular body of knowledge or a teaching method, but rather a response to the accumulated and accumulating knowledge about literacy and how it develops. Whole Language is a political agenda.

During these years, Stephens says, reading education has become a transdisciplinary endeavor. It is now the domain of linguists, cognitive psychologists, sociolinguists, psycholinguists, literacy theorists, developmental psychologists, and perhaps lastly, reading educators. Perhaps as the result of the proliferation of participants, most of the talk has been about methodology, terminology and materials in teaching reading, rather than the teaching process itself. There were methods of "scaffolding," "cognitive apprenticeship," "reciprocating teaching," then there were, instead of teaching, "invitations," "demonstrations," "strategy lessons," and "ownership." Now, according to Stephens, the dominant group among teachers advocates the use of methods developed outside of the classroom, while an emerging element advocates the professionalization of teachers so they become facilitators of learning, in which they establish their own teaching environment and, drawing from their knowledge base, develop their own teaching methods. The all important question is not how

effective the teaching process is, but rather who determines the way teaching is done. Stephens comments, "Many educators find themselves asking questions such as 'What is a teacher's role in the classroom now, and what should that role be in the future?' 'Who has, or should have, the power to make these decisions?' 'What are the rules for determining or redistributing this power, and how can the rules be renegotiated?'" Is it a marvel that under these circumstances all attention is turned to the setting of the table and nothing to the meal?

Conclusions

It is time to conclude this discussion. I believe it is clear at this point, based on the presented material and applied logic, that a number of statements can be accepted as being right.

In any alphabetical writing system one needs to know the letters before one can read, in the sense of mediated reading. Fluent reading is possible only when the reader knows the letters so well that their recognition, alone and in groups, is instantaneous and automatic, and occurs on a subconscious level. Recognizing individual words by their global looks is not alphabetical reading, but rather logogram reading with its inherent limitations.

English orthography is unique because both single grapheme-single phoneme correspondences and groups of graphemes mapping onto groups of phonemes play important roles in it. Of the two components of the orthography, the grapheme-phoneme correspondences represent no problem. The mapping correspondences are more complex, but once they are internalized, the brain readily recognizes the patterns and converts even printed words previously not encountered into spoken words known to the reader in a process called mediated reading.

The mapping correspondences represent schemata of the human mind. As is the case with the creation of every schema, if the brain receives information in a systematic fashion, it is easier for it to establish the schemata for orthographic mapping. The meaning-emphasis systems introduce words in a random fashion. Even if the student derives certain rules of letter-sound correspondences, the process is hindered by the difficulty of fitting unrelated items into a schemata system. The phonics, and particularly the linguistic, methods, on the other hand, introduce new information in a systematic way, in groups of similarly spelled words, generally progressing from simple to complex. This enhances the formation of schemata.

All meaning-emphasis methods, including look-and-say, whole-word, whole language, and language experience methods, are based on logogram-like memorization of printed words in an attempt to directly implant the reading habits of experienced readers into beginner readers without the transitional stage of mediated reading. This practice corresponds to an attempt of trying to implant a square peg into a round hole. This system of teaching works only for a portion of the learners of reading, namely for those who can deduce the essential mediated reading techniques from the text they read. Those who do not have the intellectual power to do so and would need to utilize the associative learning process to learn those techniques become confused and discouraged by the seeming randomness of English orthography as presented.

The first step in learning to read is the establishment of the basis upon which to build. This basic knowledge which has to be learned associatively includes the differentiation of sounds in speech, the learning of letters, and the learning of a few metalinguistic definitions. Not all the letters need to be learned before any reading commences, but learning all of them as quickly as practical is desirable.

Once the sounds of speech and the letters are clear in the student's mind, simple combinations of sounds and letters are correlated as corresponding units of speech and writing. When the principle of this correspondence is established and the student had gained experience in using them, progressively more complex structures can be introduced, learned and practiced until all combinations are dealt with and the mechanics of mediated reading is learned.

From this point on practice is needed to improve proficiency and to develop to the fluent reading stage. Comprehension comes by itself if the verbal vocabulary of the student matches the vocabulary of the text. It enhances the practice of reading if the student is allowed to read whatever is of interest to him.

Contrary to the belief of many, it is absolutely essential to read and precisely understand each and every word in a text. The notion that substituting words in a text in order to get the meaning is an acceptable practice is wrong. Since most key words in speech and writing have several meanings, it is imperative to precisely identify the word so that its correct meaning in the sentence can be derived from the rest of the sentence in a meaning feed-back process. The practice of accurately reading all of the words in a text is of great practical importance. To illustrate the point, consider maintenance manuals for machinery, or contracts, medical reports, insurance policies and claims, protocols for a test program, and a million other documents where inaccurate reading would lead to dire consequences. Even when reading for recreational purposes accurate reading is important. How can one read literary prose or a poem or a play and enjoy the beauty of the author's artistry of language if not his exact expressions are derived from the printed text? Any degree of liberty taken in reading any text is a folly and an excuse for the failure of teaching how to reconstitute living language from dead graphic markings.

Many of the reading related books discuss teaching reading in the sense as if reading were the equivalent to becoming cultured. Reading and becoming "well educated" or "cultured" are two separate and entirely different issues. Reading does make it possible to become well educated and cultured. In fact, reading is a prerequisite to becoming so in our culture. But the reality of life is that not everybody who can read will become an avid reader or a literate person in the sense of being widely read and conversant in the arts and sciences. In the United States practically every youngster goes through 12 years of formal education, and they are expected by some to reach the same level of knowledge and sophistication that was reached by those who received the same amount of formal education four or five generations ago. Back then only a privileged elite, or an extremely motivated and intellectually gifted minority reached that stage of education. For many people it was the apex of educational achievement. Those in the privileged segment of society who weren't inclined towards intellectual activities and still completed the 12 years of schooling became the Babbitts of their era. Those in the broad segment of society who were not inclined towards intellectual matters went to school for a few years, then went into the trades and commerce, and their reading was limited to whatever they needed in their activities, if they learned to read at all.

Similar situation existed and still exists in Europe today, to draw a parallel. The majority of people do not complete high school, but go to trade school while learning a trade. Some of them become regular and habitual readers, others read as little as they can get away with, very simply because they are not interested in matters that can be derived from reading. The important thing is that they all can read.

Failing to make a habitual and constructive reader of every American high school graduate, we should at least provide them all with the means of being able to read whatever they get into their hands, be it a newspaper, a magazine, a book, or the application instructions on a can of paint. Just as one can lead a horse to water but cannot make it drink, no teacher can make a youngster a connoisseur of literature. What a teacher can do is to teach the mechanics of effortless reading by the use of the proper teaching method, and then expose the child to the pleasure, utility and magic of reading and hope that the planted seed takes root. We owe that much to every child for the sake of the child as well as our own sake as members of the same society.

As it is, about one quarter of the population of this great country is seriously handicapped by being functionally or totally illiterate, and another quarter has difficulty reading. This situation is not only inexcusable, it is more than that. It is a national tragedy in the literal sense of the word. For the simple reason that many people in education misunderstand the basic principles of the proc-

ess of learning in general, and learning to read in particular, year after year hundreds of thousands of children are fatally shortchanged and deprived from what is their birthright: that they learn to read in their native language by the time they complete school. This disastrous lack of a vital skill exists not because of lack of teachers. Not because of lack of funding for public education. Not because of lack of opportunity to attend school. It exists in spite of all these. The only thing that is missing from the process is the willingness of the educational establishment to use a sensible way of teaching reading that is successful in the rest of the world, and at some places in this country.

The issue can be argued until the cows go home. Legions of experts can spew forth dissertations on the subject, using the latest catch-phrases to say whatever they want about comprehension being imperative, about reading strategies and metacognitive skill development. They have done so for the past fifty or sixty years, with hardly a decade that did not produce its pet theory, its "modern" methodology, its up-to-the-minute classroom practice, its very latest expert-speak. And what do the results prove? By results I don't mean statistical tabulations of longitudinal studies, nor learned monographs appearing in professional journals. By results I mean what percentage of school graduates have no difficulty in reading any text printed in the English language. Those results are unchanged, and they are dismal and a disgrace to the entire system of both education and the education of educators. If our dry cleaner or bank or car repair shop would give us service of this quality, there would be rebellion. But the educational system gets away with it.

As I have said, it is a national tragedy of full proportions. It is also a personal tragedy for those who cannot read, for they are robbed of opportunities both economic and intellectual in nature. The masses of illiterates and functionally illiterates are innocent victims of an obstinate attitude that refuses to acknowledge proven facts and insists on the use of teaching methods that are unmethodical, that leave behind those who most need help.

Chapter 9

The Teaching-To-Read Industry

All children and adults who are not mentally, visually or aurally handicapped can learn to read and write in the English language. The means to achieve this have been known for decades. It is necessary to have their willingness to learn and practice; it is necessary to provide them with training in phonemic and metalingustic basics, to introduce to them the principles of alphabetic writing, to explicitly teach them the letters of the alphabet, and implicitly teach them the mapping correspondences of letter groups and sound groups that make up English orthography. From that point on all they need is to practice reading by reading, which may be initially a chore, but soon it develops into a process of great pleasure with rich intellectual and entertainment rewards. Once they reach the stage of proficient fluent reading, they can forget the arduous process of mediated reading. They will fall back to its use on a subconscious level whenever they encounter something unfamiliar or they misread something.

Why is it then that a quarter of our young people completing school cannot read? Why is functional illiteracy such an unsolvable problem?

There are several reasons for it. The teaching of reading, studying the process, catering to the remediation of illiteracy and functional illiteracy is a big and financially rewarding business. A vast army of people make a living, receive professional recognition, possess status as experts, researchers and educators — all for their activities to search for answers and devise ever newer solutions to be tried out and evaluated to achieve the ultimate goal: The slaying of the dragon of illiteracy.

As long as we as a society accept the necessity of this make believe scientific work, live by its nonsensical findings, and stumble through reading instructional methods that are based on political agendas and contrived theories, our literacy problems will remain. So will the associated harms to our society, which include first and foremost the loss of opportunities for the illiterates, the loss of significant contributions the functionally illiterates could make, and the wasted intellectual and financial resources used by this fallow branch of education and research.

The vast majority of the people engaged in this futile business have been brought up in certain beliefs in how reading is to be taught, and since their convictions are based on belief, and their professional achievements and status are rooted in these beliefs, it is nearly impossible to sway them from those beliefs and get them to give serious consideration to facts and logic which run contrary to the principles they are committed to.

A parallel situation

Selective vision when it comes to seeing unwelcome facts is not unique to reading professionals. It is human nature.

I found an example of this in an article in the August 25, 1997 issue of the San Francisco Chronicle. Its title is "Economists Can't Seem to Agree on Anything." Its author, Jonathan Marshall, writes about a survey by three economists, Victor Fuchs, Alan Krueger and James Poterba of Stanford University, Harvard and MIT, respectively, who polled 134 economists on 13 such questions as, for example, the potential effect on the economy of increasing the limit on IRA savings. The only issue on which the economists agreed is the desirability of a higher tax on gasoline, which they all favored. On the other twelve issues they were split in the ratio of 25 percent, 50 percent and 25 percent that they would be harmful, would make no difference and would be beneficial. Of

course, these were opinions and everybody is entitled to one no matter how it relates to a common perception, if there is such a thing. The second part of the survey dealt with facts, and in such matters one would expect a consensus among these folks who make their living by analyzing measurable data.

Yet, the researchers found that on such questions as what percentage of wealth in the United States is controlled by the richest 1 percent of the population, or how much is the wage gap between men and women of equal qualification, or the effect of unionization on wages — all questions of statistical facts that can be readily verified by referring to the appropriate data bases — the economists were all over the map in their assessment. The sobering aspect of this phenomenon is that many of these expert economists have serious influence upon decisions our politicians make that have profound effect on our lives. Krueger commented, one possible reading of these results is that research findings don't have much impact on the views and convictions of experts. To put it more bluntly, they must be holding a position of "Don't try to confuse me in my convictions with facts. I am the expert, therefore I know how it is."

This story is to illustrate that imperfections of human nature and personal egos can have material impact upon the affairs of the world.

The actual agenda

When I reviewed the material I assembled for this chapter, I discovered a bit of a problem with it. I found it difficult to "put my arms around it," as we say in engineering — meaning: to define the issues, identify the correlations, draw conclusions and develop solutions. The topics discussed in this chapter are exposé material, which is of journalistic interest. Journalists show the world what is wrong with something, but they are not obliged to find and offer solutions. I feel somewhat uncomfortable with this function but can't avoid performing it, because so many things are wrong and stand in the way of general literacy in this country, and I feel there is a need for pointing them out. As far as solutions go, they have been known for many decades; they also have been ignored by most for all that time. This chapter is not the proper place to repeat what the solutions are. However, the next one is.

The reason for the failure to achieve general literacy has so many facets that they can be shown only in an anecdotal manner, rather than as a logical continuum. The thought that connects these perhaps seemingly unrelated subjects is that the greatest hindrance to the realization of general literacy is the fact that the interests of a host of individuals and organizations, be they governmental or private industrial, many times are in direct conflict with the prospect of every member of the population learning to read simply and quickly.

This problem was not discovered by me; it has been known and written about for a long time.

Jonathan Kozol, for example, in "Illiterate America," (1985) describes an experience in 1979 when he was asked to set up a "National Literacy Center" at a major school of education. He writes, "Optimistic and somewhat naive, I set about the task of raising funds and organizing operations. Within one month I was accused of compromising academic interests by my failure to assign the first funds raised to salaries for doctoral assistants. By the second month I was attacked for failing to respect the primacy of research goals. 'We need to know a great deal more about he problem,' I was told. 'Psycholinguists ought to be included. We have some doctoral candidates who could be employed for that component . . .' By the end of six months I was locked into an alphabetic labyrinth of professional subdivisions, no one of which could be excluded from the planning stage for fear of injuring their fragile dignity. Threatened interests bristle at the first sign that they might be superseded; rituals of pacification must be undertaken.

"Drowning in neutral language, I discovered with a sense of shock that I had invested half a year in every possible aspect of adult illiteracy except adult illiterates. Despite the backing of a loyal and enlightened dean, I resigned abruptly and returned to literacy work within illiterate communities. 'Too bad,' a university administrator told me. 'You could have run a million-dollar program.'

"It is too bad. A million dollars was available for research while not $100 was available for taking action on the things that we already know."

Kozol then continues to elaborate on the problem. "Research, however, is not the primary obstacle to passionate endeavor. Encrusted and competitive hegemonies represent the most immobilizing force. Each group already in existence, even the most progressive of these groups, seems to view the possible expansion of the literacy struggle with a thinly veiled alarm. Everybody wants more money and support, but no group wants to see that money goes to someone else — or something new. They compete with each other; but the deeper competition is with any unknown future venture that might render them tangential or eclipse them altogether by success . . . While lobbying for funds, therefore, such groups are cautious to ensure that any funds which come available will be assigned to programs like their own. The motives of individuals may be benign, but the function of their organizations is regressive. They speak of wishing to affect (not to transform) the future; but, most of all, they want to supervise that future. They claim an ideological neutrality, but this is not an honest claim. Their ideology is self-perpetuation."

In the very same year, Diane McGuinnes in her book, "When Children Don't Learn," comments on much the same situation, "If a research project has a theoretical framework too far removed from the current dogma, the research will never get founded. In addition, theories are more easily communicated than data. It is the theories about learning that influence popular opinion [presumably in the community of reading professionals] and not the data, which are often too complex or too fragmented to describe easily." She discusses various "reading disabilities" which are used to explain the failure of reading instruction. She quickly disposes of brain damage as a reason for children lagging in reading as nonsense, totally unsupported by medical data. For "visual perception deficit," another scientifically sounding but meaningless piece of expert-speak, she quotes research by Mildred Mason, who found that poor readers, years behind the normal reading level, are identical with good readers in their ability to locate letter targets in nonsense words. The two groups were also identical in locating a symbol in a string of symbols, such as *@#"*{}*%&. However, the performance of good readers showed dramatically higher levels when it came to finding target letters in real English words. This research indicates that the difference is in the processing of the material being read and not in the neurological or visual functioning of the individual. McGuinnes comments that "These theories [that refute that children's alleged handicaps are the reason for the high failure rate] have been derived inductively, following analysis of a large body of experimental results. As such they are in sharp contrast to the deductive theories which were formulated prior to research and continue to guide research in spite of the fact that they are continually disconfirmed. Promising theories in the field of learning disabilities appear much less dramatic and significantly more benign, and hence are less likely to capture the popular imagination." One may want to add, not only popular imagination, but also peer support and, consequently, research dollars.

Charles C. Walcutt in "Tomorrow's Illiterates: The State of Reading Instruction Today," (1961) comments that despite a flood of "scientific literature" the teaching method did not change. He suspects that in many of these learned writings the experts were busy defending and justifying the "whole-word" system of reading instruction and for this reason they did not have time to factually examine it. He writes, "The sheer inertia of the machine involving professional reputations, course offerings in colleges and universities — indeed whole curricula in schools of education — and great financial investment in textbooks is tremendous. Add to these the psychological resistance of peo-

ple who have been defending a system whose theory and justification they do not themselves understand, and you have perhaps identified the most important causes of our national plight: the considerably more than half (probably 75 percent) of our young people do not read as they could, and that at least 35 percent of them are seriously retarded [in reading]."

Science and Pseudo-Science

One of the fertile fields of reading instruction activities involves research. Innumerable research studies have been performed over the decades, some very useful, most of dubious value. It may be a truism that by necessity one must handle a lot of straw and chaff to get to the grain, but the cost of these studies both in terms of money and misapplied talent must be enormous. Reading the reports on them and going through the findings and conclusions, one cannot help but wonder more often than not whether the findings are any better than common sense reasoning, and what is the need for these findings? To give a few examples, here are a few studies.

Dolores Durkin, while a member of the faculty of the University of California in Berkeley and the Teachers College, Columbia University, conducted two longitudinal studies on the reading achievement of children who had learned to read before entering the first grade of two public school systems. ("Children Who Read Early, Two Longitudinal Studies" 1966) The book which reports on the studies runs 139 pages, has 102 references and 5 appendices. The purpose of the studies was to answer the following questions:

- "How many children learn to read at home and, as a result, enter first grade already reading?
- "What is the effect of this early ability on a child's future achievement in reading?
- "What kind of factors promote early reading, and do they have implications for school instruction in reading?"

The second study was aimed at answering the following questions:

- "What is the effect of early reading on subsequent achievement in reading?
- "What kinds of factors, either within a family or about the child himself, foster preschool reading?
- "Do any of these factors have implications for beginning school instruction in reading?"

In the Oakland, California, test 5,103 children entering the first grade in September, 1958 were tested to identify those who could read. 49 were found in the group, ranging over an I.Q. of 91 to 161, coming from various socio-economical and racial backgrounds. They were tested, together with a control group, in May and September, 1959 and in May of 1960 to 1964, a total of 8 times. The median reading levels remained about two grades above actual placement grade levels. Evaluation data is given in 14 tables in a variety of sortings. Interviews were conducted with the families of all 49 early readers to identify factors that explain the fact of early reading, also to identify the family and socio-economic backgrounds of the subjects, as well as the person mainly responsible for the teaching of reading. It appears that the role of the mother is dominant in the process. Many of the parents taught the child to read in spite of the cautioning of kindergarten or nursery school teachers against doing so.

The second study took place in New York City between 1961 and 1964. From 75,000 first graders 4,465 children attending 40 schools were selected for screening of reading ability. Of these 156 were found to be readers. Similar testing procedures were used as in Oakland. In addition to

the early reader group, a control group of 156 children of similar I.Q. were selected from among the non-readers, to monitor their progress and find out if early reading gave the children sustained advantage. Interviews were conducted with families of 30 members from each the early reader and non-reader group with similar questions asked as in Oakland. The results of the tests in the study are contained in 7 tables. In the second study teachers also were asked to describe pertinent characteristics of the early reader and control group members for evaluation and tabulation.

Picture for a moment the work involved in these two studies. Rosters had to be gone over, selections made, tests performed, interviews conducted — the list is endless. A fairly good size team had to be assembled to do all these tasks, and they did not make it for the love of humanity. It must have been a program like the one Mr. Kozol was not willing to participate in.

The Summary and Implications of the Findings are given in Chapter XII in the last seven pages of the book as follows:

1. Prior to the study it had been assumed by teachers that early readers would have problems later such as: being bored; being confused for having been taught by someone untrained; falling behind in achievement. The study showed that the early readers maintained or increased their advantage in reading level over the study period.
2. Although the median I.Q. level of the early readers was high (121 and 133), the range was wide (91—161 and 82—170). Children in the low range maintained good grades in their classes, most likely because of greater ease of reading.
3. Parents of early readers subscribed less to the idea that children should be taught to read by trained persons only. Non-readers who showed early interest in reading were refused help by their parents.
4. Socio-economic status of the early reader's family has no correlation with early reading. More important is the presence of parents who spend time with their children; who read to them; who answer their questions and their requests for help; who demonstrate in their own lives that reading is a rich source of relaxation, information, and contentment.
5. Interest in learning to print develops earlier, or simultaneously with interest in reading. Generally, the sequence of development is: scribbling and drawing — copying objects and letters of the alphabet — raising questions about spelling — ability to read.
6. Early printers generally queried about the spelling of their names. They preferred to use regular pencils or a blackboard. (Experts of pedagogy deem thick pencils more suitable for the use of beginning printers.)
7. A child's persistent interest in writing and spelling sometimes encouraged a parent, or an older sibling, to talk about the sounds of letters. Sometimes the help was productive, sometimes not. However, when help with letter sounds was given, it was usually directed toward independence in spelling rather than reading.
8. Children when they began printing go through "binges" of printing, when they keep at the task for extended periods of time before suddenly stopping. "The sustained projects of these children were in striking contrast to the schedules of school programs which constantly interrupt young children because, it is said, the children have short attention span."
9. The child's interest in what certain words say is awakened during being read to, particularly when stories are being re-read. Interest in whole words is also awakened by TV commercials, signs, food packages, etc.

10. Interest in the kinds of words is often gender specific. For example, boys are interested in words such as jet, rocket, while girls in food names and other used in playing house.

It appears that the expenditure of resource is disproportionate to the unsurprising conclusions of the study, which, although "scientifically achieved," are very cautiously stated and offer very little more than common sense observations. They certainly do not offer guidance for future programs relating to the teaching of reading in schools. They merely advocate the usefulness of parents spending more time with their children, reading to their children, and reading themselves, thereby demonstrating the desirability of reading.

The most important conclusion is not drawn — most likely it is not even recognized. It is this: By learning the letters from printing them prior to figuring out how to read words, children are likely to develop an active knowledge of the letters. This proficiency in letter recognition is likely to have freed the children's mental resources for the task of associating letters with sounds, and making the connection between consecutive letters forming words in print and consecutive sounds making words in spoken language. The knowledge and instant recognition of letters is a key factor in the successful learning of reading.

A recent example — it is useless to give too many of them — is described in the May 1997 issue of The Elementary School Journal, a bimonthly publication, in the article "Urban Middle-Elementary Students' Perceptions of Grouping Formats for Reading Instruction" by Batya E. Elbaum, Jeanne Shay Schumm and Shawn Vaughn. The article is 13 pages in length and lists 68 references. The abstract says it all.

"The purpose of the study was to investigate elementary school students' perceptions of grouping formats for reading instruction. Participants were 549 third- fourth- and fifth-grader urban, mostly minority students, including 23 students with learning disabilities, in 3 schools in a large southeastern district. Students' perceptions were assessed by means of a questionnaire that included both closed and open ended items. Results revealed no grade or gender differences. Students reported that whole-class instruction and working alone were used more frequently than group or pair instruction; some students reported that they had no experience with certain grouping formats, particularly pairs, in their current reading class. Students at all levels of reading ability liked mixed-ability groups and mixed-ability pairs most, followed by whole-class instruction. Same-ability groups and working alone were least liked grouping formats. Students perceived that in mixed-ability groups students get more help from classmates, work more cooperatively, and make more progress in reading than in same-ability groups. Same-ability groups were perceived to be desirable only for nonreaders. The implications for the classroom practice are discussed with an emphasis on general education classrooms that include students with learning disabilities."

Here again one wonders about the practical value of all the effort that was spent in the course of this study. The only tangible value I can think of is that the three authors had their paper published in a prestigious journal and thereby cemented their position on the faculty of the institutions of higher learning where they are employed.

The strange world of psychology

But the pseudo-scientific investigation is not confined to people in higher education. Many examples can be found in the profession of psychology showing people of high reputation and professional esteem developing theories and publishing impressive-sounding books disclosing findings that at best make one smile.

Bruno Bettelheim and Karen Zelan published in 1981 "On learning to Read, The Child's Fascination with Meaning," a book of 306 pages. In Part One they sadly report that literacy in the U.S. is unusually low. Literacy in this reference is not the narrow definition of being able to read printed text, but rather the love of reading not only for obtaining information, but also for deriving pleasure and entertainment. They attribute the reason for this phenomenon to the method of teaching reading, which is boring and hated because of the dumb and vacuous texts of the beginning readers, and the rote recitation of illogical and often meaningless texts which have nothing to do with a child's experience in life. They state that texts have a stilted language because of the incredibly low vocabulary used, are generally lavishly illustrated with pictures that do not accurately picture the subject of the text, which concentrate on children constantly having "fun" and take place in a make-believe world.

So far I am in full agreement as far as the reasons they list go.

Part Two deals with the misreading of words, which they think is due to psychological reasons and not to the practice that children go through several years of "learning to read" without ever being told about the existence of letters and the commonsense fact that printed English words consist of letters. They impart upon us the insight that misreadings and substitutions are often due to the subconscious working of the *id* the Freudian part of the psyche which is regarded as the reservoir of the instinctual drives and the source of psychic energy, but also of the *ego,* which, together with the *superego*, are also Freudian concepts. Misreadings and substitutions, they say, often reflect a psychological problem in the child. Rather than making the correction and telling the child he has made a mistake and thereby triggering a negative reaction, Bettelheim and Zelan recommend that the teacher should seemingly gloss over the error and covertly try to find out what may have prompted the misreading. Often the underlying problem surfaces and after it is discussed, the child feels comfortable and will decode the word correctly and without prompting. Even when the problem seems to be autism, where the child reverses the letters (and sounds) in a word, in reality the child may be deliberately or subconsciously doing the reversal to improve on the context of the material. The contention is that the number of children with physiological or neurological reading impediment is extremely small, much smaller than popularly believed in the teaching profession. The authors believe that such impediments are cited to exculpate the faulty method of reading instruction.

In much detail they describe a number of case studies, which are quite entertaining to read, if one is in the proper frame of mind and has time on hand, as some of the psychological explanations go on for two or three pages. An example of the case studies is one that involves an eight-and-a-half-year-old boy who was not doing well enough academically in the opinion of his parents, since he learned more slowly than had his sisters, with whom they compared him disparagingly. One day the boy was struggling with a Walt Disney version of *Cinderella*. He had reached the part of the story where stepmother and stepsisters do not permit Cinderella time off from her labors to prepare herself for the ball. They mock her: "You must learn to work faster." Finally she is able to put on her dress. The text reads: "Cinderella ran down the stairs. 'Wait,' she called, 'I can go now.'" Instead of reading it as printed, the boy read: "Cinderella ran down the sisters," and stopped. Bettelheim and Zelan then go on and analyze at length the motivation of the boy to have "misread" the word *stairs.* Any person not a psychologist, but still having some common sense, would have recognized this as an instance of a ticked-off boy trying to be funny and would not blow it into a full-fledged psychological case study that deserves a two-page dissertation. My impression was that this "case" description is an example that is more illustrative of the tendency of professionals to make a mountain out of a mole hill, than of the alleged psychological problems of a perfectly healthy boy with an inclination to antagonize his family and act the maverick.

When I was in the elementary school in Hungary, we learned to read in the first grade, and from the second grade on we had subject reading that was contained in the "reading book." From

the fifth grade on our curriculum consisted of subjects, such as language and literature, grammar, arithmetic, geometry, geography, history, natural sciences, and in the seventh and eighth grades physics, chemistry and biology. We had our text books and we learned from them. The teacher would present the material during the period and assign a certain number of pages we had to read at home. During the next period the teacher would call up boys and girls at random and grade their answers to his questions related to the subject we had to cover for that day. We read the text, understood what it said, all we had to do was to remember it and paraphrase it in comprehensible sentences. Nobody taught us how to learn — it was a matter of taking the time to do it. If someone did not prepare for the class, got called up and collected a poor grade, he generally got his ducks in a row for the next week or two and tried to remedy the situation.

I don't think American kids are any different from Hungarian kids when it comes to mental abilities or a natural aversion from spending time with reading textbooks when there are so many infinitely more interesting things to do. Yet in the U. S. a big deal is made of teaching children how to learn. In pondering the reason for this I reached the conclusion that here students can't read (in the sense of decoding) many words in their texts and therefore they cannot understand what the texts say. The real remedy would be, of course, to train the children to get out of the mediated reading stage and become effortless fluent readers. The rest would take care of itself, and the problem would simply vanish. But this would be much too simple, and a lot of "good science" would go by the wayside. So the issue needs to be studied, and it does get studied and reported on. In "Learning to Read in American Schools," (1984) Richard C. Anderson et al. editors, Bonnie B. Armbruster and Ann L. Brown published an article, "Learning from Reading: the Role of Metacognition" that deals with the subject. I give the two beginning paragraphs here as an example of how to make a scientific object out of whole cloth.

> "Those of us who study reading in an attempt to help students learn to learn from text are humbled by the incredible complexity of the process of learning from written materials. Brown has tried to capture this complexity in a tetrahedral model of learning. According to this model, four major variables enter into the learning situation. These are (a) the criterion task, or the endpoint for which the learners are preparing (completing a workbook exercise, taking a test, writing a report, solving a problem, performing an experiment), (b) the nature of the material to be learned (stories, informative text, directions, maps, tables), (c) the general characteristics of the learners (their prior experience, background knowledge, ability, interests, motivation), and (d) the activities engaged in by the learners (their strategies and tactics for making learning successful).
>
> "Efficient and effective learning depends on the orchestration of these variables. The orchestration is accomplished by a higher-order process, called metacognition. The purpose of this chapter is first to discuss the role of metacognition in learning from reading, and then to describe some promising results of attempts to teach students to employ metacognitive skills in learning from reading. Finally, we present suggestions for helping students learn to learn from reading."

Reading "scientific" papers like this, I feel proud that at such an early age my classmates and I were such mental giants that we successfully wrestled with "incredibly complex processes" in the course of learning the assigned material from our textbooks. Had our teachers known what a formidable task we had to accomplish day by day, I am sure that in appreciation they would have given us much higher grades and forgiven the occasional lapses when we elected to play ball in the street rather spend the afternoon bending over our books, orchestrating our mental power in a tetrahedral fashion.

Here is another example of scientific writing from "The Psychology of Reading" by Eleanor J. Gibson and Harry Levin (1978). Chapter 2 discusses the theory of perceptual learning, which at the end is thus summarized: "This chapter presented an overall view of perceptual learning and development, considering three problems: what is learned, what processes may be involved, and some trends in perceptual development. What is learned includes distinctive features of things and coded symbolic material, invariant relations in events, and structure, both superordinate and subordinate, which may also be thought of as higher-order relations and rules. Processes involved include abstraction of relations, ignoring irrelevant information, adaptive use of peripheral sense-organ adjustments, and perhaps reinforcement by discovery of structure and reduction of uncertainty. There are three outstanding trends in perceptual development: increasing differentiation or specificity of correspondence between stimulus information and discrimination, optimization of attention, and increasing economy of information pickup. All of these have implication for reading and will be drawn upon as we discuss the acquisition of reading skill and the behavior of the mature reader."

I am sure it takes at least one Ph.D. degree to understand this passage, let alone to write it.

By the way, this is a formidable book in the sense of its extent, containing about 200,000 words and the equivalent of 58 pages of charts, illustrations, and tabulations. It weighs in at 2.75 pounds and is 1.5 inches thick for a format of 9 by 6 inches. It is the result of 14 years of research and a fruitful cooperation of a group of reading scholars, Gibson and Levin among them. The John Simon Guggenheim Memorial Foundation gave a one year fellowship to Gibson and the William R. Kennan Charitable Trust provided one term's leave for Levin to write the book. The Department of Psychology at MIT provided office, clerical help and library assistance for the work. Gibson was 59 when she wrote the book, presumably at the apex of her career. As far as the contents go, it is a synthesis type book that sums up the work of many others without offering original thoughts and findings. I found it rather dull, lost in details and unfocused. Many of the research it describes may be interesting as anecdotal information, but they do not comprise a big picture that enlightens the reader on important issues. Naturally, the text is full of references to the works of others (on the average 1.7 references per text page).

Literature Churning

In any scientific field people make studies, discoveries, findings. For very understandable reason these people want the world to know about them. The means of broadcasting such things is to write a paper and present it at a convention or have it published in a journal. If the subject is broad enough, then the solution is writing a book about it. It is customary, even mandatory, to list references to other people's earlier works in such intellectual literature, giving proper credit where it belongs, and enabling the reader of the paper to check out the references for verifying the subject matter and its interpretation by the author. So far, so good. I am wholeheartedly for the practice.

A problem presents itself, though, when papers are written for no discernible reason, or with nothing new to tell, for the seeming purpose of filling the agenda of conferences or the pages of journals. In my engineering career I received a number of requests for writing and presenting a paper, but I did not think that my work was original or important enough to take the time of my colleagues to read about it. On the other hand, I quite often made use of the contents of good papers written by colleagues that contained solid scientific or technical information.

During the preparation for writing this book I read a good number of works, and I must say quite honestly that very few of them contained original thoughts or deep insights. When I found the same names and titles popping up as references in numerous works, I made sure to review them. Surprise, surprise! The works that appeared with great regularity contained original ideas and findings, and drew conclusions that could be used if one wanted to use them. Most of the books and

articles, however, were of mediocre intellectual quality, presented shaky ideas if anything at all, were long on verbiage and short on substance.

Charles C. Walcutt in "Tomorrow's Illiterates: The State of Reading Instruction Today," (1961) estimates that between 20,000 and 50,000 books and articles on reading research appeared during the period of from 1920 to the time of the publication of his book. Now, that is a rather wide margin of estimate, one must say, but even if one takes the low figure, it still represents 500 articles and books per year on the average, or ten per week. This seems absurd, doesn't it? It is absurd, but it is likely to be true. I don't claim at all to have made a comprehensive survey of the "reading" literature, but just to give a feel for the proliferation of writings and publications, the following is a list of the periodicals that contain articles referenced in the various books I reviewed:

American Educator
American Educational Research Journal
American Journal of Education
California Reader, The
Challenge
Childhood Education
Cognitive Psychology
Contemporary Educational Psychology
Contemporary Issues in Reading
Early Childhood Research Quarterly
Education Week
Educational Leadership
Educational Psychologist
Educational Researcher
Elementary English
Elementary School Journal, The
English Record
Florida Reading Quarterly
Forum, The
Harvard Educational Review
Illinois Reading Council Journal
Journal of Educational Psychology
Journal of Educational Research
Journal of Psycholinguistic Research
Journal of Reading
Journal of Reading Behavior
Journal of Verbal Learning and Verbal Behavior
Michigan Reading Journal, The
Language Arts
Progressive Education
Reading Improvement
Reading Research and Instruction
Reading Research Quarterly
Reading Teacher, The
Research in Education
Review of Educational Research
School Review
Urban Education
Whole Idea, The

Thirty-eight journals in all, unless I missed a few, which I quite possibly did. This, of course, is not a comprehensive list of such scholarly journals. I am sure there are several dozen others in addition to these. Just to see what is involved, I went to the library and looked at a few copies of five of the listed journals. They are published monthly, bimonthly or quarterly, and contain anywhere from 4 to 18 articles. If we take a median of bimonthly publication and eight articles per issue, 48 articles per year are published by the average journal. For the above listed journals this represents 1,824 articles per year — call it 1,800. If we assume that one quarter of them deal with reading, we get 450 articles per year. Walcutt is in the ballpark with his estimate.

The above data begs the question: Is there, in fact, that much noteworthy material to write about? And secondly: What effect do these articles have upon the way reading is taught, and if they have any effect, is it noticeable in the improved results of teaching? We know the answer to the second half of the second question. There is no improvement in the results. By and large, the same 25 percent of school graduates have difficulty with reading as did 10, 30 or 50 years ago. Then the next question is, why write all these papers?

Writing articles is a necessity in the profession. In order to be considered a professional and a scientist, one needs to be active, which means one needs to produce scientific work. But in the subject of reading and the teaching of reading, much of the ground has been covered. So in order to be considered progressive and a person who keeps up with developments, one has to read journals. The journals, in turn, have to be filled with articles so there is something in them to read. Also, if one really wants to show how professional one is, one must write articles. All one needs is a new angle to view an old subject from, or to investigate something related to the classroom. You name it. First and foremost, one must list as many references as possible. This is done for two reasons. One, a large number of references immediately tips off the reader that the author is well versed in the particular field. Secondly, once something is published after a peer review, it is likely to be accepted as a fact. So if one takes a statement from a publication that happens to coincide with one's views, one doesn't really need to reason it out whether it makes sense or not. It is an accepted truth as it had been published.

The use of references is sometimes carried to a ridiculous extent. The article "Urban Middle-Elementary Students' Perceptions of Grouping Formats for Reading Instruction" of The Elementary School Journal contains 68 references for 13 pages of text, making it more than 5 references per page. Dolores Durkin's book, "Teaching Them to Read," was first published in 1970 with the fifth edition published in 1989. She is the grand dame of the whole-word method of teaching reading. This particular book of hers goes on and on for 523 pages. She has 420 references, 46 of them to prior publications by herself. Patrick Shannon in 1990 wrote "The Struggle to Continue: Progressive Reading Instruction in the United States." The book is 183 pages in length containing about 60,000 words and has 384 references, 10 to his own prior works. That makes one reference for every 150 words of text.

What is the point? That these people are well read? That all they write about can be taken for granted because most of the contents can be verified with prior publications? Do all the references leave room for any original thought at all?

I don't want to be misunderstood. I have nothing against any one of these writers. I have nothing against Mr. Shannon and I do not question his knowledge, wisdom or expertise. But in this particular book, I could find nothing compelling, no insight, nothing new. It is a bemoaning of the fact that liberal education in the Horace Mann fashion is becoming less and less popular in the United States and wishing that it weren't. To me books and articles in this vein are nothing but recycling the same ideas, the same jargon riddled statements, the same or similar short term or longitudinal studies and case histories ad infinitum just to have something in print so something can be added to the résumé. I could add literally dozens of examples of this practice of literature churning, where

learned papers of minuscule significance and trivial value refer to large numbers of other similar papers as if striving to prove that yes, they do belong in a body of scientific mental products that are useful and beneficial for humanity.

Let me quote from the preface of "Improving Basal Reading Instruction," a collection of articles in book form, edited by Peter N. Winograd et al. and published in 1989: "The original idea for this book came from a 1984 pre-convention institute on decision making in basal reading instruction, presented at the International Reading Association, organized by two of the editors and including many of this book's contributors as participants. The institute made us acutely aware that although basal programs are the dominant means of reading instruction in the United States today, there were no texts available to provide teachers with constructive suggestions about how to use basals as part of a more complete, balanced, and effective program of reading instruction. This awareness, combined with the knowledge gained from the research on reading and reading instruction during the past 10 to 15 years, made clear the need for a theoretically sound text on basal reading instruction."

It sounds to me a little like this: "Hey, guys, we're having great fun at these pre-convention get-togethers. How about doing something together, like getting up a book and publishing it. We can each contribute an article. Anybody has a good idea what the subject should be?" And so on. Five years later the book hits the libraries.

The 15 contributors to the book are mostly Ph.D.s and are professors or associate professors at various colleges and universities. They all have written articles in various periodicals and some have written or co-authored books on the subject of reading. In simple terms, they are well credentialed. As can be expected, all of the articles are teaming with references to other scholarly books and papers. Just to show the point, here is a listing of the titles of the chapters together with the number of pages they contain, including illustrations, the number of references and the number of references per page of text:

Title of Chapter:	Pages	References	Ref/page
Introduction: Understanding Reading Instruction	13	59	4.5
1. Teaching the Basal Selection	37	7	0.2
2. Grouping and Pacing with Basal Materials	17	33	1.9
3. Integrating Seatwork with the Basal Lesson	20	11	0.6
4. Student Evaluation and Basal Instruction	25	45	1.8
5. Individualizing Within Basal Instruction	30	56	1.9
6. Beyond the Basal and Beginning Reading	23	43	1.9
7. Creating a Bridge to Children's Literature	17	55	3.2
8. Integrating Writing and Reading Instruction	22	39	1.8
9. Creating the Bridge to Content-Area Reading	14	12	0.9
Summary: Improving Basal Reading Programs	24	24	1.0
Total	242	384	1.6

An interesting fact is mentioned on the first page of the Introduction: "Research in the area of reading has grown tremendously in the 1970s and 1980s. The number of research articles in the last fifteen years equals all of the published research in the past ninety years." Point to ponder: Did anybody make a cost/benefit analysis for all these studies?

Enough said about this subject. Let us look at some other situations in the literacy field, where the initial idea is surely well intended and the results are not what they were hoped for.

Voluntary Tutoring Programs

Across the country thousands of volunteers spend time every day to teach their fellow Americans something the schools had failed to teach them: how to read. These people do not get paid for their efforts, their only reward is the knowledge that they are trying to do something to help another human being learn to read and thus open up for him unimagined opportunities for entertainment, pleasure, and just plain functioning as a normal person supposed to in our reading-based society.

In practice, the method of tutoring is to sit with the pupil who is most of the time an adult, and read together, helping the pupil make out what the printed words are. The material to read? Whatever interests the pupil. The most widely recommended reading material is the experience based narrative. Here the pupil tells about a subject of interest, the tutor writes it down, and then the pupil tries to read his own words. Quite understandably, although this method may be of the greatest interest to the pupil as far as subject goes, there is no chance of presenting a comprehensible idea of the alphabetic or mapping principles that reading in the English language is based on.

As a consequence, a significant percentage of these tutoring efforts tend to peter out after the pupil had made nominal progress in reading fluency. Also, many of the tutors, having concluded the sessions with the first pupil, do not continue with a second or third pupil. This leads to the need to constantly recruit potential tutors and give them basic training in the practice of tutoring. This constantly repeating cycle then provides employment to a number of trainers of future tutors.

It is not as simple to become a tutor as one might imagine. In 1987 I signed up for becoming a tutor with Project Read of the San Francisco Public Library in cooperation with the Adult Reading Center of San Francisco. The training course took five days from 10 a.m. to 12:30 p.m. There were about 60 volunteer tutors participating in the course. The trainer was the Associate Director for Adult Education of the Foster City Reading Institute. Each of us received a 136-page compilation of various notes and training/teaching aids, a booklet by Paul McKee, "Primer for Parents — How Your Child Learns to Read," a booklet published by the Literacy Volunteers of America, Inc., titled "Reading Evaluation Adult Diagnosis," together with an 18-page collection of evaluation worksheets, and a second publication by the Literacy Volunteers of America, Inc., "TUTOR — Techniques Used in the Teaching Of Reading," written by Ruth J. Colvin and Jane H. Root, Ph. D.

It appears that many major cities in the country have similar programs and one assumes that the material handed out and the training courses are much the same. All of the material in our course was based on the meaning-emphasis way of teaching reading. In "Primer for Parents" the author invented an alphabet and wrote a six-page illustrated story to demonstrate the situation of a child confronted with a printed text for the first time in his life. The text, written in this demonstration alphabet, is totally incomprehensible as can be expected. The point is made. Feel empathy for the poor kid. McKee then establishes associations between his consonant "letters" and objects with the corresponding initial sound. On the basis of this he encourages the parent to read the text as if it were written in Arabic or Hebrew, which writing systems do not use vowel letters, and then suggests to guess at the words from the consonants and the context. This is, of course, the prevalent "word identification" technique of the meaning-emphasis method of teaching. He states that this is the way the child will learn to read. He points at the difficulty vowel letters present, and he seems to be appreciative of this fact. He says, "The temptation just to call words would probably be much greater if the vowels of the English language were as regular as the consonants. The fact that the most reliable letter-sound associations in the English language are those for the consonants forces the reader to rely on context clues, and every time children make use of context clues they must read for meaning." He is obviously in favor of novice readers being forced to use such context clues and to guess at the "identity" of words.

One of the goals of the training I participated in was the indoctrination of the trainees in the meaning-emphasis teaching of reading. A significant portion of the training was devoted to finding the appropriate reading material for our pupil. First the pupil was to be tested as to his reading level. This was the intended use of the booklet and work sheets that came in the package. Once the pupil's reading level was determined, we were trained to define the "grade level" of any text to be read for practice, using the Edward Fry, or the Alton L. Raygor readability test. The first is based on the number of sentences and number of syllables in a 100-word section of the text to be evaluated. The Raygor test is based on the number of sentences and the number of words containing more than 6 letters in a 100-word section of text. A graph in each test gives a direct reading as to whether the difficulty level is grade 2 or grade 11. I need to comment here that the United States is the only country I had experience with where texts are classified as to what elementary school grade level reading achievement standard they correspond with. In all other countries such classification is simply meaningless. In all other countries once a person had learned to read, he can read and understand anything, depending on the extent of his receptive vocabulary.

This business of grade classification reminds me of an experience I had. Years ago, when word processing came into wide use and programs became available for spell check and grammar check, I worked on a study to expand and upgrade a zinc ore mine in Alaska. When I gave the draft report to the Client's representative who had become a good friend in the course of the study, he ran on it a grammar check with a program he had just bought, and came up with the "shocking" result that the text was at 4.3 grade level. We had a good laugh and agreed that it was perfectly suited for the board of directors of his company, but just for fun I suggested to make a few changes to the text to see if it can be made more sophisticated. I combined a few simple sentences to make compound sentences, put in a few $5 words, and instantly the text jumped to 8.2 grade level. I asked if he wanted further changes to bring the report up to college level. By the way, the content of the report remained exactly the same, and if the reader was not conversant in mining industry terms, it probably would not make much sense to him.

In any event, reading professionals attribute great significance to the readability of texts and there are even Federal regulations that require certain warnings and usage instructions to be at no higher than 8th grade reading level.

Another test we were made aware of is the CLOZE test, which consists of blanking out every tenth word in a text to see if it was comprehensible and ask the pupil to fill in the words he thinks the author used in the blank spaces. This procedure is supposed to test the reading ability of the student and the readability of the text. According to the instruction, if the student could correctly identify over 57 percent of the blanked-out words, the text was appropriate reading material for that student. Why 57 percent? — God only knows. My personal opinion is that this test measures only the expressive vocabulary of the student combined with the student's ability to anticipate words in a discourse, and has preciously little to do with the process of reading.

We were also given lists of words assembled by scholars, such as the Dolch list of sight words, and the "Three Hundred Most Frequently Used Words in Rank Order" taken from "Computational Analysis of Present-Day American English" by Henry Kucera and W. Nelson Francis. The idea was to teach these as sight words first and thereby facilitate reading for our pupil. It was helpful to find out that "the" is the most common word in the present day American English, and "done" is less frequently used than "development," but still is among the 300 most frequently used words.

As far as methods to teach reading go, we could choose "duet" reading, which is properly called Neurological Impress Method, and it consists of the tutor and pupil reading aloud and together while the tutor moves his finger along the text being read. Guidelines were given on how to use context clues. To teach sight words, we were encouraged to make and use flash cards. If that

did not work, we could resort to the Visual-Auditory-Kinesthetic-Tactile (VAKT) approach. This is given in the previously mentioned booklet, "TUTOR," and is worth quoting.

> "**Visual.** Take the word card and hold it in front of the student, saying 'Look at the word, picturing it exactly the way you'd take a picture of a friend. Look at the word. Say the word.' (Student response is *were*.) 'Now close your eyes and picture the word in your mind. Can you see the word?' (Hopefully the response is *yes*.) 'Now, open your eyes and look at the card again. What is the word?' (Student response should be *were*.)
>
> "This technique may give difficulty in rare cases, as there are some people who do not get mental images. This capability does not necessarily depend on intellectual level. If the student says he cannot see the picture, you might suggest closing the eyes again and picturing a child's face or a best friend's face. If this results in a picture, repetition of the word picture training will be beneficial. If the student is not capable of getting mental pictures, abandon the closing of the eyes technique and simply teach by looking at the card directly.
>
> "**Auditory.** Auditory techniques take into account the phonic elements of a word and may provide a clue to at least a part of a word. This gives the learner a place to begin in word identification.
>
> "The goal, however, is to recognize the word, not to pronounce each letter in turn. If there is difficulty, draw the student's attention to the beginning, middle or ending consonant which may serve to cue the student.
>
> "**Kinesthetic.** For short words of two, three, or four letters, it is often helpful, if the letters are known, to ask the student to write the word in the air or on the table or on paper with an index finger. The letters of that word are thus fixed in the mind and another sensory pathway for recall of the word is provided.
>
> "If this is difficult, write the word large enough for the student to trace over the word with a finger (not pencil or pen). When the student has traced it several times, remove the copy and have the student reproduce the word from memory, saying each part of the word as it is written. If the student makes an error, cover the writing and go back to the tracing step. Have the student continue this process until the word can be easily written correctly.
>
> "**Tactile.** Sometimes the student will get the feel of the letters best when they are written on his or her back. This is often an effective way to help a person sense the difference between b and d if these two letters are confused. As you say the letters of a word, write them with your index finger on the student's back. Then ask that these same letters be written on paper. This approach should be used with caution because some students do not like to be touched.
>
> "Some students can be helped to learn by forming letters in a pan of wet sand or sugar, using their index finger. The rough sand and the pressure needed to form the letters help to impress the appropriate forms in the student's mind. You might use sandpaper or different textured materials to help your student feel a letter.
>
> "Another way to provide a raised impression of the word for your student is to write it large with a wax crayon on a sheet of paper under which a piece of window screening has been placed. This will provide an embossed impression of the word which then can be felt by the student as the word is traced over with the finger."

This would be rather entertaining reading if it were not so serious in its implications and consequences. My training program — and there is no reason to believe that other programs in other locations would be much different — would try anything and everything to help teach reading, except to train future tutors in the basics that are needed for mediated reading. The tutor then, having taught the pupil the skills of mediated reading, could help him get enough practice until he reaches the developmental stage of fluent reading.

The results of such misguided effort are the same everywhere. A few people learn to read at a relatively low level of proficiency, most simply get frustrated at the slow rate of progress and stop attending tutoring sessions. The tutors fare similarly. When their efforts show meager results, they get discouraged, stop wasting their time and give up tutoring. Meanwhile, new tutors need to be recruited and trained, funds are required for this and need to be raised. All this needs organization, office space and personnel. These translate to more expenditures. Quite a number of people are employed in the various tutoring organizations for ridiculously low compensation to keep the machinery going. It is really heartbreaking to see so many well-intentioned people going through so much trouble and accomplishing so little. Why so little? Because of the adamant insistence of the reading establishment to use non-workable methods to teach reading to people whose only salvation is associative learning of reading, with a logical and systematically ordered presentation of the connections between spoken and written English. Instead of imparting such nonsense advices as the ones quoted above, these courses should train tutors to start at the phonetic properties of the spoken English language and go from there to explain how the verbal language, the alphabetic writing and the complex English orthography fit together. Unfortunately, the way the volunteer literacy programs are organized and operated now will continue to be exercises in futility with sporadic and inconsistent results in expanding literacy among the people most needing to become literate.

Volunteer tutoring programs are just one avenue of attempting to eliminate illiteracy. Another experiment that was touted to be a sure-shot way came to my attention ten years ago.

Hi-Lo Books

In the March 29, 1987 copy of Literary Review of the San Francisco Examiner I found a series of articles on Hi-Lo Books, which are short, fast-moving, action-packed stories with limited vocabulary and complexity, written exclusively for people with low reading skills with the idea that once they overcome their fear and aversion of reading and get hooked on these simple books, they will continue to read and eventually develop into fluent readers of regular reading material.

This was at the time I became interested in the process of reading and learning to read, so the subject was quite intriguing to me. Writing these Hi-Lo "literary" works is no small challenge. The writer has to observe a very strict vocabulary control. In addition to perhaps a thousand or twelve-hundred basic words, the writer is allowed to introduce a hundred or two "new words" (meaning words not contained in the word-list that is used) in an entire story, while at the same time keeping it moving and interesting.

Like with everything connected with reading and the teaching of it, two camps formed immediately, one for and one against. The argument for the Hi-Lo books was that anything that makes the non-readers read is welcome and wonderful, and once the appetite is whetted, eating will continue. The cons argued that dumbing down texts to a level bordering on imbecility is not the solution. The solution is to properly teach people to read so that no crutches would be needed to move around in printed text of any vocabulary.

It seems that for a while a small cottage industry sprung up to write and publish these special books, and experts emerged making analyses of how these books fit into the big picture of literature. Books of name authors were dissected and evaluated for readability. For example, John Up-

dike took the prize with 7th grade level prose with "new words" numbering 48 in a 400-word passage in his then latest book, "Roger's Version." Stephen King's hot novel, "It" hit 4.1 grade level with 48 "new words" used in a section of similar length. Danielle Steel was easier to read at 3.6 grade level; she used only 28 "new words" in the 400-word sample passage. Poor Ernest Hemingway came in last with 3.37 grade level. He still must be turning in his grave because of this indignity.

The point to prove by these experts seemed to be that low vocabulary does not really matter when it comes to literary value, therefore it is all right to tailor books to the low "word identification" abilities of certain readers. So once books are simplified, as commonly practiced in subject-matter reading material of school textbooks, the teaching of "word identification" skills lose importance, as readers will be driven by interest, and eventually will figure out for themselves how to "identify words," or at least how to guess at their identity. Then nothing will stand in their way of getting the meaning of any text they encounter. As you notice, I studiously avoided the use of the verb "read" in discussing the perusal of printed text, just as do most reading experts and specialists.

I was curious to find out where do we stand these days with this interesting idea to spread literacy. I turned to that fountainhead of information, the Internet, and used several search engines to find out what was there to know about Hi-Lo Books. I came up with zero hits, believe it or not. Nothing! Hi-Lo seems to be associated these days with a company making a full range of quality variable speed pulley drives, another company that makes cabinets and upholstered furniture, an auto supply distributor, a manufacturer of gas flare devices, and a company making shake proof fasteners.

Well, it seems that another experiment did not pan out, another great idea fell victim to the passage of time. Fortunately, the human mind is very inventive, and as long as there is life, there is hope. Enter the next panacea for the reading disadvantaged.

Reading Recovery

Whatever bad things are said about the media, occasionally they provide information that literally opens up entire small worlds for people who have an interest in pursuing the lead. In the March 2, 1997 Sunday San Francisco Examiner & Chronicle I read an article by Debra J. Saunders titled, "Educrats' Toilet Seat." It starts with these intriguing paragraphs:

> "Reading Recovery™ — a program designed to prevent reading failure — is to education what the $600 toilet seat was to the military. Except that no one ever said the $600 toilet seat didn't work as promised.
>
> "Like the toilet seat, Reading Recovery — a tutoring program designed to help first graders in the bottom fifth of their class to read better — is pricey. And, as happened with the gilded toilet seat, educrat brass seem to have had no problem forking over taxpayer dollars to pay for Reading Recovery's 30 hours of instruction — an amount that 'exceeds the national average per pupil expenditure for one full year of schooling,' according to Bonnie Grossen and Gail Coulter of the University of Oregon. Estimates of its price tag run as high as $9,211 per successful student. A San Bernardino Unified School District audit found that Reading Recovery cost $7,000 per student, not including teacher training."

For the record, the nationwide average annual expenditure per student was $6,084 for the school year of 1994-1995, according to Department of Education statistics.

Needless to say, this article lit up my interest. What is Reading Recovery? Does it do any good? Will it solve the functional illiteracy problem? Who came up with this marvelous idea if,

indeed, it works? I told myself with a degree of self reproach, how ironic life can be that an entire revolution may run its course without an outsider like myself ever noticing it. The article referred to New Zealander Mary Clay as the initiator of the system. Well, here is a point of departure, I sighed with relief. Sure enough, the Library of Congress catalog gave several titles by Mary M. Clay, and I hastened to the library to put my hands on them. The work of primary importance is her "Reading Recovery," published in 1993 and reprinted in 1994. It contains 79 pages of text and references 112 prior works, 20 of them Clay's own.

Reading Recovery was developed by Clay in New Zealand to overcome the difficulties of children who fail to make adequate progress in learning to read during the first year of grade school. The program involves a specially trained teacher spending one hour per day with the child to overcome his problem in reading and to bring him up to average reading level while providing him with reading strategies to maintain this position. Reading Recovery is not a method of teaching reading. It is a procedure based on developing in the teacher a keen sense of observation regarding the lack of specific knowledge and skills in the child. Once these are identified, the teacher then can find ways of filling in the gaps in the child's knowledge, and give special material to practice on to reinforce the knowledge and develop the skills.

Reading Recovery training of teachers takes one year and it involves theory, observed practice by the use of one-way mirrors, and critiquing the actions of the trainee by peers and the instructor. Back in the school, each teacher is given charge of up to four children. The children generally stay in the program for 12 to 15 weeks, by which time they reach the goal of catching up to average reading proficiency level in their class.

I must comment here that this observed duration proves one thing: that the principles and practice of mediated reading can be taught in a surprisingly short period of time when proper coaching is used. It seems to show that once the light goes on in the child's mind as to what reading really is, he is on his way to become a fluent reader.

On reading the book one can't help to notice that Clay's accepted method of teaching beginning reading is the whole language approach. Nevertheless, here and there, a concession is made. She says, "From time to time the child having difficulty in learning to read may have to pay attention to the detail of the print. Letter learning must be done, although book reading can begin when only a few letters are known. There will be a gradual accumulation of letter knowledge as the child reads and writes. Some children will need particular attention to letter formations, not 'to get it right' from the point of view of good writing but because these few children cannot analyze the form into its parts, or cannot find a learned routine for producing it. If a child knows most of the letters one cannot assume that he has access to this knowledge while reading continuous text. One of the problems often encountered is a child not seeing any relationship between letters he recognizes in isolation and what he is looking at in continuous text in reading book. He has yet to learn how to use one source of knowledge in another context."

This last observation is not startling in the least, since the whole language and whole-word methods keep it a secret that printed words are made up of letters. Take any meaning-emphasis book on teaching reading, and you will find just a fleeting mention of the fact that English is an alphabetically written language. No wonder the child will be unaware of the most basic fact of writing and reading. Apparently Clay is aware of the importance of the knowledge of letters, at least on a subconscious level, for she astutely switches letter learning from learning to read to learning to write, thereby having her cake and eating it, too. "Children in Reading Recovery," she says, "write stories every day. It is in the writing part of the daily lesson that children are required to pay attention to letter detail, letter order, sound sequences, letter sequences, and the links between messages in oral language and messages in printed language. It is particularly important that children learn to hear the sounds in words they want to write, and find appropriate ways to write these sounds down. The writing knowledge serves as a resource for information that can help the reader. However, this

reciprocity does not occur spontaneously. The teacher must remember to direct the child to use what he knows in reading when he is writing and vice versa."

She advocates the use of magnetic letters and suggests various activities to teach letters. She suggests that the child compile an alphabet book, showing nouns with the initial letters in alphabetic order and a picture of the object, so the child has a ready illustration for each letter and the corresponding sound. But rather than developing the concept further and making the connection between the letters and sounds, and the letter-groups and sound-groups, she goes next to writing stories to practice fluent reading by reading and re-reading stories dictated by the child.

Next, Clay sets the task of teaching the hearing and recording of sounds in words. This involves initial sounds in words as well as syllabication, consonant clusters, blending of sounds. This exercise is followed immediately by cutting up stories into individual words and reassembling them. The purpose of this activity is to teach one-on-one correspondence of spoken and written words, directional behavior, breaking oral language into segments and word study. Then we are into reading books.

This is, of course, the cornerstone of the instruction, and the books to be read are very carefully selected for readability and vocabulary. They are placed into categories of increasing gradation of difficulty from one to twenty. Every day a new text is read and the text read during the previous day is re-read. The child is checked for reading habits as well as for self-monitoring. Clay draws a diagram of four "reading cues" placed in a square configuration, where each cue interacts with the other three. These are:

1. "Sense, Meaning (Does it make sense?)
2. "Visual cues (Does that look right?)
3. "Letters/Sounds expected (What can you hear? What would you expect to see?)
4. "Structure, Grammar (Can we say it that way?)"

The child is expected to rely on all of these "cues" to get the meaning of the text by feed-backs from the text as to the identity of the contained words, which then reveal the meaning of the text. After this exercise in reading sentences, the teacher gets to linking sound sequences with letter sequences (which is the essence of the linguistic method of reading instruction). My comment is, instead of going in a logical sequence of teaching — first the letters, then the letter group/sound group correspondences, then reading words, then sentences while going for meaning — Clay chooses to serve up all of these elements in an arbitrary and jumbled sequence and evidently expects the child himself to put them in some practical and learnable structure. Taking words apart, which follows, is in essence reading in an alphabetical system of writing. Clay poses the question, "What sort of analysis of new words can the teacher help the child to do in his reading?" She goes on saying, ". . . research on early reading has found

- "that final letters or initial letters are the starting points for a child's detailed analysis of words
- "that inflections added to words are easy to recognize,
- "that an early achievement is to know that you work left to right across a word
- "that consonants in the word are quite easy to deal with
- "that easy-to-hear vowels are somewhat more difficult
- "and that there are very hard-to-hear consonants or vowels.

"Good readers read in chunks. They attach sounds to a group of letters (rather than each letter) if that works. So if the child attends to a large chunk or group of letters within words be careful not to make him think that this is wrong! He can learn letter-by-letter analysis, left to right, on other words and particularly in his writing." Systematic establishment of letter-group/sound-group correspondence is not even mentioned, let alone advocated or even suggested. The child is left to figure it all out if he can.

Her commendably short book ends with Reading Recovery research reports. Not surprisingly, all of the mentioned reports are positive. The research projects go back to 1976 and were conducted in New Zealand. By 1984 the Reading Recovery program was deemed so effective that it was adapted on a nation-wide basis. The population of New Zealand at the 1991 census was 3,434,950, say 3.5 million. Clay lists the enrollment in schools and in the Reading Recovery program for the years 1984 to 1988 as follows:

Year	Birth cohort	R. R. enrollment		R. R. graduates	
		Number	%	Number	%
1984	49,574	3,200	6.45	2,036	63.63
1985	51,211	5,323	10.39	3,093	58.11
1986	49,044	7,468	15.23	4,536	60.74
1987	49,789	9,240	18.56	5,904	63.89
1988	49,482	10,511	21.24	6,494	61.78

The "R. R. enrollment" percent shows the proportion of all children and the "R. R. graduates" percent shows the proportion of all enrollees who left the program after its successful completion during the indicated year. Clay explains that the majority of the remainder continued in the program during the following school year to successful graduation, the rest moved to other schools where they did not participate in the program.

The statistics point out a number of interesting facts. If one assumes 25 students per regular class, about 2,000 first grade teachers taught in regular classes during the time period in question. Assuming further that the average child spent 15 weeks in Reading Recovery, that the children attended the sessions in consecutive seminars, and that the school year is 39-weeks in duration, each Reading Recovery teacher could attend to eight children during one school year, four children at one time. This would have necessitated 400 Reading Recovery teachers in 1984, 665 in 1985, 933 in 1986, 1,155 in 1987 and 1,310 in 1988, which last figure is two thirds the number of teachers employed in the regular teaching of first grade students. The daily four hours of teaching Reading Recovery children, plus the time to prepare for the individualized sessions just about takes care of the teacher's time, making Reading Recovery a full time employment. Running the numbers out for the elementary school system, the program caused inside of five years an increase in the number of elementary school teachers by over 8 percent. This is a substantial expense item in school operational costs.

The 35 percent annual increase in Reading Recovery enrollment is enormous. The figure of over 20 percent of all children needing individual intervention in reading instruction is frightening in illustrating the ineffectuality of the customary method of teaching reading. Either the situation in the New Zealand reading education is abominable — similarly to that in the United States — or in the true nature of any program initiated by any bureaucracy, Reading Recovery simply expanded as much as the allocated funds allowed it to. Quite possibly the case is, it is both. Reading Recovery activists claim that the enrollees reach average reading proficiency in the course of the program.

Having started as the low 20-percentile of first grade readers, it is hard to understand what is meant by the claim. By definition, in any graded classification 50 percent of the members in the group are at or below the average. If the lowest 20 percent is improved to the former average, the aggregate level of the group will rise, setting the average at a higher absolute value. If the earlier absolute value of the average is deemed an acceptable level of proficiency, and the participants reach that level, then the program is satisfactory in achieving the desired goal. But strictly speaking, if the goal is for the participants to reach the current average, then they need to do better than the former 20- to 60-percentile of the original group. This clarification is given to define meanings, and is not meant to say that any improvement in reading proficiency is not highly laudable.

Nevertheless, Clay must have taken a bit of flack when others began to look at the cost effectiveness of Reading Recovery, for she says, "A critique of the programme's research and the Reading Recovery in Context report, claim that children may be entering the programme for whom it is unnecessary. I accept that this is inherent in a prevention strategy. The Reading Recovery in Context report recommends a conservative approach to such risk in the form of a fixed criteria for entry, set low and based only on text reading level." In other words, rather than taking the lowest 20 percent of the readers, a selection criteria should be established as an absolute standard for selection. One perceives that with such a system, the average number of participating children would still be similar, however, more of them would come from schools in which children come from less literate homes. Clay, of course, objects to the idea, since inevitably it would result in a shrinkage of the program.

Reading Recovery in the United States

So much for the substance and the initial use in New Zealand of the Reading Recovery program. Now let us look at the transplant in the United States. I must report that it promptly took root, as illustrated by the following information that came off a web site.

"READING RECOVERY COUNCIL OF NORTH AMERICA

> "The Reading Recovery Council of North America (RRCNA) is a professional organization dedicated to successful literacy for all children. The membership of RRCNA consists of Reading Recovery teachers, teacher leaders, university-based trainers, site coordinators, partners, other educators, and private citizens interested in supporting the work of Reading Recovery. See Reading Recovery Council of North America vision, mission and purpose statements.
>
> "Reading Recovery Council members receive a professional journal, several newsletters and opportunities for participation in Council-related events and activities. Membership in the RRCNA is open to anyone who wishes to support the purposes of the Council and to share in its work . . .
>
> "To become a member of the RRCNA, please send a completed membership application . . . with a check for $40 one year membership or $100 one year supporting membership. Proceeds from supporting memberships will be used as development money for the RRCNA.
>
> "Last modified: March 03, 1997"

It also must be reported that Reading Recovery spread and proliferated with astonishing vigor, supported by all sorts of educational institutions and a host of school districts. As we have seen from the data in New Zealand, it is an expensive program. It can increase the first grade teacher salary costs by 60 percent.

To give an example of how Reading Recovery works, take the case of the San Francisco Unified School District, which is close to my heart and my pocket, because my tax dollars from Federal, State and local taxes support it. The information regarding participating children and schools must be considered accurate, as it came from the SFUSD web site.

Begun in 1993, Reading Recovery is a joint effort of the School District and California State University/San Bernardino. The project also collaborates with the St. Mary's College Regional Reading Recovery Training site where a total of four teacher leaders were trained during 1993 and 1994. The site operates and is accredited under the Reading Recovery Council of North America (RRCNA) guidelines.

Reading Recovery is implemented in a variety of ways. In some schools, Chapter I teachers devoted half of their day to Reading Recovery. Alternatively, classroom teachers were replaced by long term subs for half of their day, other teachers worked half of a day only doing Reading Recovery, and resource teachers directed half of their day to the project. The 1994-1995 Reading Recovery program involved 27 schools. In the 1995-96 school year, 45 schools with 65 teachers were providing Reading Recovery services to San Francisco children.

An elementary teacher's salary is about $40,000 per year, so if 65 teachers spent half of their time on Reading Recovery, their salary alone set us back $1.3 million. Assuming that the expenses for 1994-1995 were proportionate, that school year's Reading Recovery teacher pay was $780,000. What did we get for that?

Of those students identified for Reading Recovery, 268 were served at the San Francisco site during the 1994-1995 year. Of these 181 were program children (60 or more lessons or successfully discontinued from the program) and 126 were successfully discontinued, i.e. reached the average reading level of their class. The other 55 children were not discontinued for a variety of reasons including frequent absence, being hard to accelerate due to a variety of reasons, the most frequent ones cited were inexperienced classroom teachers who were not providing appropriate classroom reading instruction, or lack of parental/home support for the student. In addition, with such a large number of the Reading Recovery teachers being in-training, fewer children are discontinued. Experienced Reading Recovery teachers discontinue far more children at a faster rate. 114 of the children were not fluent in English while 153 were fluent English speakers.

One of my problems is that somehow I don't feel comfortable with the numbers. 268 children participated in 1994-1995. The next sentence says that actually only 181 went through the entire program, and only 126 finished it successfully. This would make the cost $6,190 per successful completion in teacher's pay alone. Add to it the cost of training, administration, schoolroom space, books, building maintenance, janitorial services, etc., and we are talking about close to $9,000 per child. This on top of the regular $6,000 annual schooling costs. When one thinks about this, all you parents whose offspring goes to Harvard, Stanford or M.I.T., stop moaning about the high tuition costs. It is a bargain compared to Reading Recovery. At the end of the paragraph the web page states that 114 children were not fluent in English. If they weren't, their poor performance in English reading might have been due to their deficiency of language, which is an entirely different issue and should not be handled within Reading Recovery, but rather by giving the children intensive English language training.

Reading Recovery appears to be a vast operation. Stanley L. Swartz and Adria F. Klein of the California State University, San Bernardino, state on their web information page that the success of Reading Recovery resulted in program initiatives in Australia and Ohio (1984), Canada (1988), California and Great Britain (1991). In 1993-94, Reading Recovery sites operated in four Canadian provinces, 48 U. S. States, and the District of Columbia. Approximately 60,000 North American children were served by Reading Recovery educators during the 1993-94 school year. In California alone, more than 500 school districts served approximately 5,000 children.

Stop and think for a moment. For North America that represents a cool $540 million additional expense for first grade education. That kind of expense is industrial in scale.

Swartz and Klein go on to tell that Reading Recovery is approved by the National Diffusion Network (NDN) of the U. S. Department of Education as a developer/demonstrator project. This NDN designation, they state, is a recognition of proven program effectiveness. Among its many professional development activities, Reading Recovery in California is the primary sponsor of the highly acclaimed West Coast Literacy Conference and Reading Recovery Institute. This annual conference draws teachers, administrators, and Reading Recovery personnel from throughout California, 30 states, and four foreign countries to an important training opportunity for literacy educators. Attendance was almost 1,600 in 1994, and exceeded 2,000 in 1995. The 1996 conference was held February 29 - March 3 at the Disneyland Hotel, the attendance was presumably higher.

At the time of the web page publication the 1997 conference was still in the future. I am sure it had more participants than the ones of prior years, and that the attendance of all those attendees was deemed a professional necessity by the various universities, institutions and school districts and the expenses were duly reimbursed by them. I am quite sure there was keen competition among several convention centers to host a conference like this.

In order to disseminate research and program results, the Reading Recovery Council of North America founded an international journal focusing on early literacy, "Literacy, Teaching and Learning," edited by Adria F. Klein and Stanley L. Swartz. The first issue of the journal was published in December, 1994.

On another web page, Swartz and Klein describe the process of becoming part of the Reading Recovery program. It takes a school district two years to develop the site: one year to have a qualified member of its staff trained as a Teacher Leader at a Regional Training Center and a second year to establish a training site and begin training teachers. The Application Process to become an approved training site starts with the school district (or consortium of districts) applying to one of the California Regional Training Centers to have a qualified member of its teaching staff trained as a teacher leader. As part of the application process, prospective sites must secure financial support within the district and obtain the approval of the district superintendent. The applying district also selects an administrator in the district to assume administrative responsibilities for Reading Recovery. This site coordinator oversees the preparation of the facility, manages the budget, negotiates contracts, and acts as administrative liaison with the Reading Recovery network.

Applicants are selected for the program in the spring, and the yearlong residency program begins the following fall. The Teacher Leader training is a graduate course taken for credit at one of the Regional Training Centers. The program for teacher leaders includes five components:

1. A graduate-level curriculum consisting of a clinical practicum, a seminar in theory and current research, and supervised fieldwork;
2. The daily teaching of four Reading Recovery students;
3. Field requirements, including assisting with the training of Reading Recovery teachers, conducting colleague visits to observe other class members teaching a Reading Recovery lesson, and visiting other Reading Recovery sites;
4. Preparation for implementing Reading Recovery in their district; and
5. Attendance at a number of professional development activities including the West Coast Literacy Conference and Reading Recovery Institute.

During the training year, teacher leaders work with their site coordinators to prepare the site for its first year of operation. They inform appropriate groups about the program, prepare the space

where the teacher training classes will be held, order materials for teacher training, and assist in the selection of appropriate teachers for the training class.

One would be hard pressed to come up with a better example of building an empire.

Reading Recovery, however, is a boon not only for the school districts and colleges, but also for the publishing and book distribution business. Again, two pages from the web to illustrate the point:

READING RECOVERY PACKAGE

Package #9561 includes 10 Titles from 2 Publishers.

List Price Total $155.45
Package Price $147.65

Call 1-800-537-XXXX to order...

READING RECOVERY PROGRAM MATERIALS

We are an excellent source of materials for trained Reading Recovery teachers and the school districts that are fortunate enough to employ them. Read on for a list of professional resources for teachers and a booklist of trade books organized by level for your Reading Recovery program.

The web page then goes on to list a total of 522 books for the 20 Reading Recovery difficulty grades. It gives the prices, too. The total for the 522 books is $3,253.56.

One could go on and on about the Reading Recovery behemoth that grew to this size within a few short years, but I believe the point is almost made. When opportunity opens to establish a tax supported fiefdom, there are plenty of people willing to lend support in return for participation, particularly if it serves a noble and hard-to-attain goal, such as literacy for all. There is no shortage of experts to give testimonials as to the deserving nature of the program, just as there is no problem getting a government agency to carry the ball. An "Education Research Consumer Guide" produced by the Office of Research, Office of Educational Research and Improvement (OERI) of the U.S. Department of Education, provides information on the Internet on WHY DOES THE PROGRAM WORK?

It refers to a Professor Michael Opitz, who in a 1991 document gives nine reasons why he believes that Reading Recovery is successful. The reasons include the following:

- The program is based on a reading theory that emphasizes meaning;
- Children's reading and writing behaviors are thoroughly analyzed, and diagnosis is an on-going part of instruction;
- Children are taught reading strategies that they apply to connected text; and,
- Instructors learn to use strategies identified as being characteristic of effective teachers.

Does it sound familiar? Is Professor Opitz a meaning-emphasis advocate or a liberal educationalist or both? In the L.O.C. catalog two of his books are listed: "Learning centers: Getting them started, keeping them going" (1994) and "Getting the most from predictable books: Strategies and

activities for teaching with more than 75 favorite children's books" (1995). No wonder he is a strong supporter of Reading Recovery.

It would be interesting to get a glimpse of the future and see where Reading Recovery will be ten years from now. And what effect it will have had on the literacy rate. At this time it looks to me as a vigorously growing branch of the functional illiteracy industry. This, like most of the other branches, have justification for existence only as long as functional illiteracy exists. And like all of the programs in the meaning-emphasis arsenal, it is bound to fail because it misses the point of what is the essence of reading in the English language. But it provides a living for many while it lasts.

The Publishing Industry

We haven't yet discussed one of the main bulwarks of the functional illiteracy industry, the segment of the publishing business that specializes in school books, trade reading material, and reading related non-fiction books, although based on comments here and there, one can surmise that the publishing business has an important role.

There are two driving forces behind publishing an inordinately large number of books dealing with subjects related to reading. One is that the old adage of "Publish or perish!" is an important motivation for writing such books in the halls of academe. If you want to be a tenured professor, you'd better come up with an impressive book to prove your mettle. The second is that once the book is written and there is a prospect that libraries will be interested in buying a copy, a ready made large market for the book exists. American Library Directory 1996-97 of the R. R. Bowker Company, a 2-volume 2,200-page publication, lists over 36,000 U.S. Canadian and Mexican public, academic, government and special libraries. I am sure publishers do not mind spending the $239.95 price for it to keep their promotion lists updated. You don't need all of them to buy a copy to make a printing profitable.

How many books are published on reading related subjects? I think it can only be estimated, unless somebody wants to make a life's work out of a thorough and comprehensive cataloging of them. Here again, I think a fair idea can be derived from a few anecdotal data.

I made a Boolean search of the Library of Congress catalog using the words "reading" and "teaching" to see what would it yield. 1,147 entries came back with publication dates between 1957 and 1996. The majority of the titles was video strips and foreign publications, but 592 were books that fit the definition of the subject — at least judging by their title. This is 15 books per year but, strangely, very few of the books I encountered in the reference lists of other books appeared in my list from the Library of Congress. Other key words, I am sure, would result in other extensive lists of books. So, just to have a feel for the extent of the literature, I counted books in the stacks of the J. Paul Leonard library of the San Francisco State University, which contains some 3.5 million items. Under the subject of Teaching Reading (location code LB1573) I counted 210 books. (Interestingly, in the Library of Congress catalog listing I identified only 176 books on this topic.) Under Reading Disabilities (LB1050.5) there were 119 books. Under plain Reading (LB1050) I found 364 books. This by itself is nearly 700 books, and I am sure I did not cover all the related subjects and their location.

My guess is that there must be at least five thousand books that are reading related, and this does not include reading material or school books. R. R. Bowker's 1995 edition of Children's Books in Print lists 92,000 titles, including 15,500 new entries, which indicates that in 1994 there was a rather good crop of publications as far as quantity goes. The so-called "EL-HI Textbooks and Serials in Print" 1996 edition, also by R. R. Bowker, a compilation of what publications are available for elementary and high school instruction, lists 75,000 entries, with 4,000 new titles added during the preceding year. My heart goes out for the textbook selection committees of the thou-

sands of school districts across the country, whose members feel obligated to make prudent selections for the purchase of instruction books in their district.

But regardless of my feelings for the selection committees, aren't these numbers mind boggling? Considering that in 1996 there were 37.4 million pupils enrolled in kindergarten through 12th grade, the ratio of pupils to in-print textbook is about 500 to 1. That is quite an abundance of books and one wonders how their publication can be profitable, which I am sure it is. On the other hand, the average annual expenditure per pupil in the school year of 1994-1995 was $6,084, which put a total of $230 billion on the table, a sum that can buy quite a smorgasbord. Just to give a feel for how large sums of money are involved, consider the following bit of statistics. According to the Association of American Publishers, sales of standardized tests alone were $179 million in 1996.

It is inevitable that among the mass of publications that rolls off the presses there would be some that are quite inferior. The problem is, it appears, that a very large number of books intended for beginner readers belong in the inferior category. It is not a new phenomenon, as shown by being a recurring theme in the literature. Arther S. Trace, Jr. in "What Ivan Knows That Johnny Doesn't" laments that American children are stunted in their development by the poor literary quality of the stories appearing in the readers, which includes the primitive sentence structures that need to be utilized with the paucity of words used. He says, "An overwhelming majority of authors, whose names appear opposite the selections listed in the table of contents of these readers, are unimaginative or unknown children's writers who know all about the rules of vocabulary control. One basal reader even says as much: 'The selections … were written or adapted by authors all of whom have had many years of experience with the vocabularies of the various word lists and of all types of children's literature. The frequencies or ratings of words in Gates Vocabulary, the Thorndike and the Thorndike-Lorge Word Lists, and the Risand and the Dale vocabulary studies were taken into account. To illustrate: Any word not appearing in the Thorndike or Thorndike-Lorge or Rinsland lists was given careful scrutiny and another more common synonym chosen when … it was deemed more useful.'"

When books are contrived instead of being written, what literary quality and intellectual sparkle can one expect? Is it any wonder that children loath to read them? Is it any wonder that they prefer the brainless fare of television to the brainless fare of such books, since it takes less work and energy to just sit and watch rather than try to decode and structurally analyze and guess at contents clues in a dull written text?

Gerald G. Duffy and Laura R. Roehler in "Improving Classroom Reading Instruction" (1993) say that basal readers generally lack a systematic instructional method. "Publishers invest millions of dollars in developing, packaging, and marketing these instructional materials. Despite publisher competition, however, the differences among the major basal reading programs are marginal. All follow essentially the same format including a multilevel series of 15 to 20 books beginning with 'readiness' books for kindergarteners and proceeding through 'preprimers' and 'primers' to texts designed for use in the eighth grade. Unusually a publisher provides two separate books, one slightly more difficult than the other, for use at each grade level. In actuality, however, several levels may be in use in any given classroom at any time because of the wide differences in students' reading abilities. This explains why U.S. schoolchildren identify each other's relative reading status by asking the question, 'What book you are in?'

"Each level of basal reading series includes a student text containing the selections to be read, a workbook with exercises to be completed, and a teachers' edition with extensive teaching suggestions and directions. The teachers' edition for any given level is a massive book."

Still, Duffy and Roehler state, they are widely used because of convenience for the teacher inasmuch as they make it unnecessary to work out teaching plans. Because of the lack of meeting the specific and varied needs of the students, the exclusive use of the basals results in a dismal educational end product. When the use of basals is mandated, as it is in many school systems, teachers

feel constrained by them and they tend to fill instructional time with activities that only keep student busy, but are instructionally unproductive.

Why are textbook publishers printing such books? Partly because their editorial staff is likely to be meaning-emphasis oriented, partly because they must please everybody in order to sell the maximum number of books. Unfortunately, trying to please everybody is hazardous to quality.

The effects of the Teaching-To-Read industry

We have seen that a formidable array of businesses, institutes, researchers, scholars, teachers and specialists make up what I call the Teaching-To-Read industry. Although the purported goal of all involved is the alleviation of illiteracy and functional illiteracy, in practice the participants, regardless of the existence or lack of results, keep busy working on the problem just for the sake of keeping busy working on it. It is a situation similar to using the sophisticated aerobic equipment in a gym where people toil, pedal, strain and sweat in accomplishing nothing tangible and getting nowhere. The only result of their labor in the gym is burning off calories and exercising the body, which is extremely beneficial to the body, but still does not change the fact that nothing is visible for all the effort, unlike when one mows the lawn, chops a pile of firewood, or hikes to the top of a mountain. Similarly, the results of the work by the "reading people" show only in sales figures, "pupils discontinued," research papers presented, paychecks cashed and profit statements published, but hardly in any reduction in the legions of illiterates.

If I had to put an educated guess on the cost of remedial reading alone, I would say that 5 percent of the $230 billion annually spent on kindergarten to 12th grade schooling goes for remedial reading. This $11.5 billion covers strictly school expenses. It does not include the appurtenant costs, such as the specialized trade books which are designed rather than written to fulfill the need for scientifically repetitious text, or text with gradually increasing vocabulary, or paraphrasing regular works of literature to bring them into compliance with artificial word lists that are commensurate with grade levels in reading.

I don't even know how to start estimating the cost of this text simplification process. In order to effectively communicate, certain language skills are needed, which include adequate expressive vocabulary and a sufficient knowledge of grammar to express complex ideas. With grade and high school text books using simplified vocabulary, and the grade level of text being a function of sentence length, mostly simple sentence structures containing a limited vocabulary appear in them. The consequence is that a sizable segment of high school graduates entering college possesses inadequate language skills to effectively study in a college environment. Since higher education deals in complex ideas, inadequate language skills are a serious hindrance in the learning process. The colleges must correct this situation first by providing remedial English classes. The resources of the colleges and the time of the students are thus spent in activities which would be totally superfluous if reading had been properly taught at the beginning of schooling and the students had had the opportunity to experience the normal growth in language skills that go with reading unadulterated literature and subject text.

The $11.5 billion does not include the cost of the abundant research projects that are done for the sake of research, the cost of conferences, congresses, seminars and institutes that are organized all over the country year in and year out, nor the host of government agencies that make guidelines, monitor, evaluate, report and inform on Federal, State, and local levels. One can safely double the estimate to $20 to $25 billion annually, and even that is likely to be on the conservative side.

All this waste because of a 150-year old ill-conceived idea and the disregard of meaningful research findings that have come to light during the last 30 years or so.

Closing thoughts

The reading professionals, those who promote and teach any of the meaning-emphasis methods in spite of contraindications, are not doing it out of malice, or a desire to cheat the public for a profit. They are honest, serious, well-meaning professional people, who are sincerely dedicated to benefit the population by their activities. For some reason they just don't know better, or are unwilling to know better.

They are like the physicians of the nineteenth century who dedicated themselves to the betterment of the human condition, but were unaware of the existence of microbes, the consequences of unhealthful diets and the hazards of smoking, just to mention a few factors that represent common knowledge in our days. Those doctors of old meant well with their bleedings and mercury ointments and enemas and jars of leeches, while their patients died of consumption and colic and apoplexy. When radium was discovered by the Curies in 1898, at first it was thought that radioactivity is beneficial for the body. Ceramic water jars containing radioactive additives were put on the market by perfectly well-meaning folks and bought by progressive thinking people, some of whom passed away earlier than necessary suffering from strange growths or consumption. The consequences of being misinformed can be serious.

It would be unthinkable to do things today that came naturally in the days when certain present day knowledge and information was not in existence.

Professional people who had learned certain principles and devoted their lives to learning, researching and teaching those principles have an extremely hard time changing their mind even in the face of logical, provable and often proven facts. Many examples exist in the realm of the sciences. Consider the following items that initially encountered ridicule, incredible skepticism and resistance from experts and authorities in the related professions:

- The existence of blood vessels
- The roundness of the earth and the mechanics of the solar system
- Evolution and Darwinism
- The concept of the universe
- The existence of microbes and viruses
- The existence of vitamins
- The theory of relativity
- The quantum theory and quantum physics
- Plate tectonics

When these great discoveries were made, their proponents had an extremely difficult time convincing their learned colleagues to listen with an open mind and hear out their cases, and to judge the new findings solely on merit. The defenders of the old ideas were not against advancement and genuine knowledge. They just hated the reality that if the new ideas were right, they had spent their entire professional career promoting something that is either meaningless or untrue. And their often coveted status and standing in academia might be lost or at least diminished.

Having reached a professionally respected status, one would almost have to be a saint to admit being wrong and switch over to the other side and perhaps start all over at a lower rung among the experts in the field. And if some did switch sides, there were plenty of others who called them renegades or opportunists or worse.

We are all bound by our conditioning, our education, our past and our present privileges that flow from our standing in our profession.

When it comes to such non-exact subjects as how best to teach reading to children, the only way to tell the effectiveness of any method is to compare it in controlled experiments and evaluate the statistical results. But no matter what the results show, some professionals with vested interest in one method or another are unwilling or unable to bring themselves to adopting a method proven more effective.

When outsiders — mostly parents, who generally are only interested in getting their own children taught effectively and are not interested in the professional inside arguments — raise justified objections, many times they are ignored and dismissed as over-anxious dilettantes who don't know what they talk about due to their lack of education in the science of teaching reading.

To mention a similar situation, consider the subject of bilingual education. Here also professional people with an interest in maintaining the existing system will go to great lengths to follow their own advice. An article in the August 1995 issue of Readers Digest, "One Nation, One Common Language," by Linda Chavez, mentions a case which accurately reflects the attitude of some of our professionals overly immersed in the ways of conducting business. The case Ms. Chavez describes is this.

In the preceding year, Hispanic children were being assigned to Spanish-speaking classrooms in New Jersey, as the result of a state law that mandated bilingual instruction. Angry parents demanded freedom of choice. But when a bill to end the mandate was introduced in the legislature, a group of 50 bilingual teaching advocates testified against it at a state board of education meeting. "Why would we require parents unfamiliar with our educational system to make such a monumental decision when we are trained to make those decisions?" asked Joseph Ramos, the co-chairman of the North Jersey Bilingual Council.

This kind of attitude, "We are the professionals, therefore we ex-officio know better," can be called the arrogance of specialized learnedness. Unfortunately, it exists in every profession.

I found a uniquely explicit illustration of this attitude among the reading professionals in "The REAL Reason Why Johnny Still Can't Read" by Stanley L. Sharp. Writing about Rudolf Flesch's book, Professor Sharp runs out of patience and detached professionalism. He states, "In my opinion, the most indefensible, the most unconscionable, part of the 'Johnny' book is Flesch's absolute and unequivocal promise that all parents would succeed in teaching their children to read if they would use the method and material in the second part of his book, which he called a 'primer.' What right did Mr. Flesch have to 'guarantee' success with unproved materials, using an untried method, to untrained parents, most of whom know precious little about how to teach and about our written symbols? They run the risk of further confusing a child who already is behind, and they can easily make matters worse. Parents have no right to experiment with their children in this significant matter. There are trained reading specialists, and they are not so stupid as to guarantee parents that all children, especially those who have reading problems, will learn to read well. They know how complex the reading process is, and they know vastly more than the average parent about the teaching of reading and about our mixed-up writing system. Pedagogically, the reader is unsound. Would a specialist in psychology ever write one like it? Children can't see or feel the need to learn to read those 'dumb' words, one after another, one after another. Flesch himself said the child would be cured once he had taken his medicine! What will result from this total lack of compelling interest? Short attention spans, fatigue, squirming, yawning, wiggling, scuffling of feet, gazing out the window, the desire to be released from this irrelevant stagnation.

"Mr. Flesch played to an audience that wanted to believe him; and a calm, judicious approach would not have stirred up his readers and made them angry. He made vitriolic attacks on all educators and he belittled psychologists, especially educational psychologists. How could a person claim all reading specialists were wrong? He tore down, he did not really build up, and what he did build

on was sand. Fanned by the flames of his own, self-induced fury, Flesch sowed seeds of suspicion, doubt, distrust, and divisiveness. Like weeds, they have kept on spreading."

Quite a depth of emotions for a dispassionate scholar, isn't it?

Meanwhile, back at the ranch the situation is unchanged. All those dedicated professionals with decades of accumulated wisdom and yards of credentials and doctoral titles, and all the experienced pedagogues continued to hand out diplomas to one quarter of all high school graduates who were semi-literate or illiterate. Does Sharp seriously expect any caring parent to accept the situation as is, because the teaching professionals failed to teach their child to read and claim the reason for it is the child and the English language? Wouldn't any caring parent turn to the devil himself for help for their child? One has to be extremely naïve, arrogant and professionally conceited to resent parents' trying to do everything to help their child.

The strange aspect is that the solution to the illiteracy problem has been known for a long time. In "Reading, Language, and Literacy," edited by Fran Lehr and Jean Osborn, an article by Joanna P. Williams, "Twenty Years of Research on Reading: Answers and Questions," puts it quite clearly. She explains that research during the past 20 years has indicated that phonics instruction is necessary but not sufficient in the instruction of reading. According to one group of researchers, children with phonics knowledge can decode an unfamiliar word, whereas without it they cannot. As they sound out the word, its visual pattern becomes familiar to them. Their repetition of the decoding on a particular word leads to direct visual recognition of it, after which they do not need to decode it any more, but read it as a whole word instead, having become very familiar with its orthographic image. Using other word recognition method, for example identifying the first letter and guess at the word from its shape and from the context, they will not pay sufficient attention to the visual features of the words, (namely its pattern of letters) for later recognition. She points out, too, that phonics decoding is transferable to similarly spelled words. Another researcher said that the paradox of phonics is that it is useful in the beginning of learning reading, but once a certain level of reading proficiency is reached, phonics loses its usefulness.

Researchers working with pre-school children found that associations between printed words and pictures standing for spoken words could be taught, and that the pairing occurred on the basis of the spoken word as a whole and some aspect of the print sequence. The children did not use analytical procedure in which they identified and associated phonemes and letters. They did not discover for themselves letter-phoneme correspondences: those had to be taught, and the most efficient way of so doing is with phonics. Research work also indicates that the slower learners are in greater need of systematic phonics instruction.

Research evidence shows that phonemic skill is both an antecedent and a consequence of reading instruction, that is, that there is a reciprocal relation between phonemic ability and reading instruction. It seems to be a positive feedback situation.

"Why, then, has there been such resistance to phonics?" she asks. "There appear to be several factors involved. The first concerns teachers' attitudes . . . The second factor consists of ideological and political considerations. Phonics is often seen as traditional, authoritarian, and conservative. Indeed, conservative 'back-to-basics' movements usually emphasize phonics training. This attitude is being played out today in the political thrust of teacher empowerment . . . The third factor is economic. Education is big business, after all, and those who have a vested interest in methods and materials supporting a given approach are often likely to be protective of them no matter what the evidence against the approach . . . Lastly, instructional approaches sometimes are rejected even though they are effective because they conflict with, or are perceived to conflict with, other important educational goals. For example, how can you recommend 'the one best approach' if you also believe that teachers do a better job if they are allowed to make their own choices about what and how to teach?"

But there are other reasons, too, for the resistance to accepting a proven and workable system to teach reading and clinging to principles that have been proven incorrect. They are psychological and practical reasons.

On the psychological side, the fact is that anybody attaining a teaching position or professorship in a university or college possesses considerably higher than average intelligence. The same goes for becoming a Ph.D. Many people in such situations have an innate need to demonstrate the fact of their higher than average intelligence, and to keep proving it. Being human beings, they also have weaknesses and limitations, just like the rest of us. It is human nature to defend a stance once we are committed to it, for we do not want to be perceived as being wrong, or wrongly informed. Additionally, when learning, most of us tend to accept as truths certain tenets we are taught by persons we respect. Once we do this, which is often the case among students in a college, we resist being swayed from those tenets, for we often perceive changing position on an issue as being weak or not steadfast enough.

On the practical side of the issue, taking a new position sometimes, perhaps often, results in having to give up certain status in the ranking order of expertise among our peers in a profession. These are all real and strong reasons for adhering to dogmas that are wrong.

Perceived threat to the reading professionals' world view may be another reason for their resistance to adopt a sensible and proven method. The schemata of teaching reading built up in their mind are based on a meaning-emphasis method of teaching. If this method is replaced by the linguistic method, they have to rebuild their entire schemata of teaching reading. This is a major mental dislocation involving unlearning and learning, and it is a mental upheaval. It involves a lot of adjustment in thinking. A person in such situation has to reconcile himself with the realization of having been "wrong" about the subject all along. This is not easy. It is a metamorphosis similar to a religious rebirth.

It is hard to understand why is the reading establishment afraid from the prospect of making the teaching of reading simple and effective and thereby eliminating the need for diagnostic and remedial activities. In all countries where children learn to read during the first year in school, there are no unemployed remedial reading teachers, reading diagnosticians, researchers doing longitudinal studies on various methods of teaching reading, because there are no such occupations, and therefore their practitioners cannot be unemployed. All those earnest, highly intelligent, dedicated and motivated people who would be doing remedial reading services are busy and productive doing something else. They are doing things that show results, things that bring tangible benefits for society. Generally they are in education, but instead of wasting their energies and time in futile tasks, they are teaching subjects of practical utility.

Churning monographs does not add one iota to the cumulative knowledge and wisdom of mankind. In fact, such activity is detrimental to meaningful scientific endeavors, as they dilute and discredit other research efforts. Most reading related studies are not worth a red penny and it is a total waste of resources, both intellectual and monetary, to pursue them in the illusion that their results will magically make the illiteracy problem vanish.

If functional illiteracy is eliminated by quickly and simply teaching all children to read, the teaching profession will be profoundly effected. But this will not result in thousands of educators becoming jobless. The worst-case scenario is that the current reading professionals will have to retrench and turn their talents to something constructive and productive, which is a much more rewarding endeavor than having to admit failure with one quarter of their students year after year after year.

Chapter 10

Solving the Unsolvable Problem

On the morning of November 8, 1519 a curious and historical event took place on a broad causeway slicing across the blue waters of lake Texcoco, connecting the Aztec capital of Tenochtitlan to the south shore of the lake. The Ruler of the World, Moctezuma, the Angry Lord, clad in gold and decorated with jade jewelry, followed by the chiefs of several vassal states and a horde of servants, stepped slowly upon white cotton carpets spread in front of him toward a small group of pale aliens who had come over the sea in floating houses from beyond the horizon. The strangers had been observed for months while they followed the north shore of the Yucatan peninsula, and then landed at a place they named Vera Cruz. There were some six hundred of them. Although they had strange devices that thundered and spit fire and black balls that could destroy scores of warriors in a flash, and four-legged monster animals that they could ride with an incredible speed, and long, narrow knives made of a curious material that was infinitely stronger and sharper than the best obsidian blade, when they were faced by tens of thousands of brave warriors, they should have been swept off the lands of the empire as the storm sweeps away a dry blade of grass. Yet they weren't, and their leader persisted in his obstinate and mad demand to meet in person the Ruler of the World, a god of the realm.

After eight months of fighting, marching, inciting vassal states to rebel against their divine supreme ruler, the Angry Lord, there the pale strangers stood before Moctezuma. Their leader, a thin man with white face and long beard who named himself Hernan Cortés, sat on one of the monster animals, his head covered by a hat of curious shape, made of the same material as their mighty long knives. As he dismounted his animal and approach the royal divinity, Moctezuma must have wondered whether this curious person was indeed Quetzalcoatl, the Feathered Snake. He wondered whether he was returning from beyond the vast waters of the east. The sacred texts of yore said that the Feathered Snake would return one day — or so opined some of the few priests who were allowed to study the enigmatic figures of the ancient glyphs. Perhaps the uncertainty about what the obscure documents actually said made Moctezuma want to destroy the intruders and yet at the same time let them struggle their way to him. If only those ancient and mysterious texts could have been clearly understood, the Angry Lord would have known what to do. As it was, he had decided to leave it to the gods to have the final say in letting the pale ones reach Tenochtitlan or perish trying.

Later that day, when the Spaniards were allowed to enter the marvelous capital of the Aztecs and, as the guests of its divine ruler, had their fill of wonderment over a world that in most respects was far superior to the one they had known in Castile and Extremadura, they finally got around to tell about themselves, their customs and their faith in God.

One of the things that impressed Moctezuma most were the strange, squiggly marks the pale strangers made on sheets of paper. They were far inferior to the wonderful color pictograms the Aztec scribes produced on sheets made of maguey fibers, and yet the strangers could do something no Aztec was capable of. They could reproduce words and entire speeches with the help of those black marks so accurately that it defied understanding. Not only in Spanish. In the language of the Aztecs, too. The Angry Lord was sure of that, because he tested the strangers several times. It worked even if something was told and marked down by one person and then read by another, who could have no way of knowing what had been said originally. Moctezuma wondered at this curious way of writing and he must have wished that those ancient documents had the same unequivocal quality in giving up their meaning. He then would have known, yes, KNOWN! what to do about

the strangers. Perhaps he would have given the order to destroy them as a consequence of this knowledge. But Moctezuma did not know. The message in those ancient, sacred texts was ambiguous and murky, as if the ancients were jealous of giving up some special knowledge.

Moctezuma's hesitation and uncertainly sealed his fate and the fate of his empire. Two years later he was dead, Tenochtitlan, that marvelous metropolis in the middle of the shimmering lake lay in ruins, its rubble used to fill in bed of the blue waters. The Aztec empire was destroyed forever.

One can speculate on the way the history of America would have developed had Moctezuma precisely understood the written legacy of the ancient ones and decided to destroy the intruders rather than to test their mettle and let the gods rule as to what should happen. Perhaps it would have made no difference at all, except delaying the inevitable invasion of the Europeans by a few insignificant years. But perhaps some sort of coexistence could have been worked out and more elements of a rich culture could have survived for the common benefit of the human race.

In any event, the outcome of the meeting and interaction of two fundamentally different cultures, especially their systems of writing, underline the importance of communication by graphic symbols, and points at the importance of its accuracy. Writing and reading are essential in modern society. It is imperative for all members of modern society to possess a working knowledge of the use of written material, even if not everybody becomes a habitual reader. I firmly believe in the duty of society to give the basic empowerment of literacy to all of its members. This duty flows from an obligation to give equal opportunity to all, as well as from the self interest of society to protect itself from damage and loss that can originate from the inability of the individual to peruse written matter in the performance of everyday activities.

I am fully convinced that the "unsolvable problems" of functional illiteracy and illiteracy can be readily solved on the basis of what we already know.

How accurate reading needs to be?

Meaning-emphasis advocates find it acceptable if readers substitute their own words for written words they cannot "identify," as long as the meaning makes sense.

Unfortunately, the practice of word substitution is word-guessing and not reading.

When a thoughtful communicator commits his ideas to writing, he ponders each and every word to ascertain that they accurately reflect what he wants to express and truthfully record the exact meaning he has on mind. Even those who are proficient in the language and possess a large expressive vocabulary oftentimes consult the Thesaurus and the dictionary to make it sure they have the correct word in place. With such care invested in the accurate recording of his thoughts, the communicator rightfully expects that the reader will get that exact meaning. He expects the reader to be able to decipher the word, to find the proper meaning for it in the context of the writing and to receive the accurate message the writer intended to communicate. Approximation on the reader's part will not do. In many content type reading material, particularly when it deals with a scientific or legal subject, absolute accuracy in reading the text is crucial. Substitutions are simply not acceptable.

Wouldn't experts who author all those wonderful books that propound the acceptability of substitutions as long as they make sense in the context vehemently object if somebody took their text and substituted key words in it, thereby changing the accurate and intended meaning of their communication? I am sure they would. But if they found such practice unacceptable in their own case, why would they feel it is acceptable for a learning reader? If it is acceptable during the process of learning to read, when and how is the student supposed to stop the practice of substitution, and when and how is he going to learn to accurately make out what the written word actually is, instead of what his best guess about it is? The entire argument promoting the acceptability of guessing at words or substituting another word for the one written is self defeating. In an alphabetic or syllabic

writing system the reader is not at liberty to pick and choose words for the text. There is only one way to read a word recorded by graphemes. Once it is properly decoded and recognized for what it is, it can then be put in its context and the meaning of the word determined, thus making it possible to derive the correct meaning of the sentence and paragraph. There can be no compromise in this respect.

Reading impediments

Whenever there is a periodic uproar in the press about deficiency of reading among the population and blame is placed at the door of the reading professionals, there are vigorous responses from among them, telling what a complex process reading is. Many claim or tacitly accept that not everybody can learn to read and write in the English language. They also state that a large number of people have a "reading related handicap," which prevents them from learning to read. One of the favorite handicaps is dyslexia.

"Helping Children Overcome Reading Difficulties" by Carl B. Smith and Roger Sensenbaugh is an Internet publication of the Educational Resources Information Center (ERIC). This is what it has to say about this long-running subject of dyslexia: "In the broadest sense, dyslexia refers to the overwhelming difficulty in learning to read and write by normally intelligent children exposed to suitable educational opportunities in school and at home. Just as educators and researchers cannot agree on a specific and precise definition of dyslexia, they do not agree on the cause or causes. Recent research (Vellutino, 1987) has challenged many commonly held beliefs about dyslexia: dyslexia results in reversal of letters; dyslexics show uncertain hand preference; children whose first language is alphabetic rather than ideographic are more likely to have dyslexia; and dyslexia is correctable by developing strategies to strengthen the child's visual-spatial system. Instead, dyslexia appears to be a complex linguistic deficiency marked by the inability to represent and access the sound of a word in order to help remember the word and the inability to break words into component sounds." The authors add, "It does appear that there might be a hereditary factor in dyslexia."

Three conclusions can be drawn from the above. First, dyslexia — if it exists — and other "reading disabilities" are not legitimate causes of the vast majority of people's inability to learn to read. Secondly, many people are likely to have a poor aptitude for distinguishing and manipulating speech sounds, and therefore have difficulty discovering for themselves the connections between speech sounds and graphic symbols of writing, just as many people have poor aptitude for music, sports or other endeavors that come naturally to others. Thirdly, with proper training these phonemic shortcomings can be overcome to a degree that enables every person to learn to read.

Other information readily available in the literature and on the Internet seems to bear out this assessment.

The National Institute of Child Health and Human Development (NICHD) of the U.S. Department of Health and Human Services support reading related research. The sponsored research projects have been exceptionally rigorous in methodology in this area, where scientific knowledge has sometimes been tainted by philosophical and ideological bias. The NICHD program of research in reading is conducted by over 100 researchers in education, psychology, linguistics and medicine at 18 research sites in the United States, and has produced over 2,000 refereed journal articles and books since 1965, when the language and reading research program was initiated — according its web site.

In an NICHD report prepared by G. Reid Lyon and Edward J. Kameenui differentiation is made between two distinctly separate processes, namely "learning to read" which occurs from preschool to grade 3, and "reading to learn" in grades 4 through 12. Regarding learning to read they disclose the following research results:

- Although reading is a visual function that involves the printed word, the critical aspect of reading centers on the phonemes of language, which are auditory related. The reader's ability to remember, imitate, manipulate, reassemble, and articulate sounds is essential to beginning, or mediated, reading.
- The ability to process sounds that are heard, consistently differentiates good readers and poor readers. This ability is not dependent on intelligence, socioeconomic status, or the education of the parent. Good phonological processing is necessary in order to decode and read new words quickly and accurately.
- The most reliable indicator of ease in comprehending what is read is the ability to read (i.e. recognize) words quickly and accurately.
- Reading is a learned behavior, therefore it must be taught, supported and sustained. Reading does not come naturally as does speech. Reading relies heavily on how one hears and manipulates sounds even before one sees printed words.
- Reading the English language requires understanding the alphabetic writing system — understanding that the alphabetic print must be converted into sounds and meaningful messages.

Lyon and Kameenui inform that relative to the 20 percent of children who have serious reading difficulties — the same segment of students that Reading Recovery targets — the NICHD research program has learned the following:

- Accumulating evidence indicates that significant reading problems are the result of a "phonological core deficit" in which readers have difficulty in acquiring, retaining, manipulating, and recoding the phonemes of the English language.
- The most effective instructional reading methods appear to involve a combination of explicit instruction in phonemic awareness and sound-symbol relationships, and direct instruction in the reading of text and reading comprehension strategies in a balanced and complete teaching approach.
- Many children and adults who are not identified as "disabled" report that they do not read on a regular basis either for learning or for enjoyment. The reason, they report, is that reading is difficult for them because they cannot read words quickly, which, in turn, makes reading too hard a work for learning and enjoyment.

The above information seems to indicate that "reading handicap" is a rather fictitious concept; that the real reason for failure to learn to read is the improper method of teaching. Proper teaching methods that take into account the peculiarities of the English language as spoken and written and *teach reading* on that basis have a vastly greater chance of being successful. Other literature bear out the same message, if one is only willing to listen.

Teaching methods that make sense

Well, then: what methods of teaching reading *are* successful?

Perhaps equally important is to ask, which experts to believe?

Unfortunately, this is a question we very often need to ask. Very likely it is the most frequently asked question relating to experts ever since expert number two emerged in the murky dawn of evolution, for experts' opinions seldom coincide. Jacques Barzun, dean of Faculties and Provost, Columbia University, wrote an introduction to the book "Tomorrow's Illiterates: The State of Reading Instruction Today," edited by Charles C. Walcutt and published during the post-Sputnik period. He says, "In the course of the book the reader's hair stands on end at hearing what folly has been condoned as educational theory during the past thirty years [1930 to 1960]. I hope the shock will induce one or two reflections for future use. One is: though experts exist in every field who deserve to be listened to, they must be chosen with the same care we bestow on choosing a car or a mate. No degrees or titles or recommendations guarantee more than a *presumption* of competence. The competence itself must be shown in action, though it can often be discerned in talk, since the truly intelligent are usually able to make clear their purposes and can meet the objections of common sense. A parallel reflection suggests that the public must maintain the same suspicion of 'scientific' conclusions that the scientists themselves do. Statistics by themselves prove nothing, and the results of 'tests' can be manipulated or misunderstood with great ease."

These observant and wise words were written over three decades ago and still are valid today. Just because something issues from the lips of a "credentialed expert" does not mean it is right. We must apply scrutiny and judgment to decide whether it is likely to be right. In engineering we design, calculate, prepare estimates, and when we reach the bottom line, to use a popular buzz phrase, it is wise to sit back and apply a "reality check." This consists of trying to look at the results as if it were the first time they are encountered and ask whether they meet the criteria of common sense.

A lot of material I read about reading and the teaching of it does not. Some of the material does. The question may be raised, what is so special about me that I can sit in judgment and decide what is common sense and what is not, and contradict perhaps three quarters of the professional people who have spent their entire career with subjects related to reading. In answer I can only say that certain things about writing and the system of alphabetic writing are factual and bear no argument. For example, we do, in fact, write using letters which generally stand for sounds in speech. That is how alphabetic writing came into existence: using graphic symbols to represent speech sounds. Other items, such as the mapping model of English orthography have been shown to be valid through scientific analyses of large numbers of words. Certain methods of teaching reading are being proved correct day after day in other countries that use them. No question of validity there. Other methods of teaching reading prevalent in English speaking countries are proven wrong day after day by the fact that those children who cannot intuitively discover how English reading is done do not learn to read by the use of such methods. There is a step-by-step line of thoughts which leads one to the conclusion that for native English speakers the most likely way of successfully learning reading in the English language is via the linguistic method, preceded by explicit training in phonemic awareness.

There is another reality check that can be done on reading related scholarly books. An experienced person can quite readily discern what in such books is of substance, what is fluff, and what is a rehash of other people's thoughts and non-thoughts.

Here are a few relevant items of substance.

Dianne Lapp and James Flood in "Teaching Reading to Every Child" (1992) point out that well developed language skills are prerequisite to the successful learning of reading. They list in this category the need for improving the child's language ability in phonology, morphology, syntax, semantics and pragmatics, and the comprehension of material related orally. They also list as im-

portant activities in the early literacy program the learning of print conventions, the development of auditory memory and discrimination, and the development of visual memory and discrimination.

In discussing "word identification" they say that "by the time children begin formal instruction in reading, they have acquired substantial listening and speaking vocabularies, and [with the proper instructional methods] they can discriminate among most of the sounds of the English language. By using these natural abilities, the transition from the listening and speaking vocabularies to the reading vocabulary can be made. The teaching of reading involves the specialized task of helping children decode the written, symbolic representation of a language they already know. They can say and hear, with understanding, words that they have never seen written down. When faced with their own language in this written 'code,' many children fail to understand that they already know what is on the page. Phonics instruction during reading provides one method for breaking the code by helping children make a correlation between the letter symbol and the sound it represents." They add, "children in first grade are able to distinguish the letters of the English alphabet in a relatively short period of time and with little practice."

This is an extremely important point and the question begs to be asked, Why then do so many teaching methods refuse to start at the foundation of reading and writing, namely the teaching of letters? Why go the complex and contrived way of introducing sight words without the benefit of knowing the letters? Even if letter-sound correspondences are not taught, the recognition of words on the basis of component letters is surely easier and simpler than recognizing them on the basis of their overall appearance. Even the learning of logogram writing, like the Chinese, relies on mnemonic devices based on the components of the logograms to memorize the units of writing.

About phonics the authors say, "Educators have used the analysis of the relevant sounds of English to set up letter-sound correspondences to aid in the teaching of reading. These correspondences are fairly predictable but complex. Rather than being based on the principle that one letter equates to one sound, English depends on letter-combination-pattern. Thus, it is the letters strung together in a word that determines the sound the letter will produce. Educators have taken the most useful parts of this knowledge about letter-sound relationships for the teaching of reading and have attempted to develop a body of knowledge called phonics. This subset, phonics, includes the most common sounds of English and the most frequently used letters or strings of letters that record those sounds."

"Direct Instruction Reading" by Douglas Carnine, Jerry Silbert and Edward J. Kameenui (1990) is an excellent and substantive book on teaching reading. Right in the preface a sentence caught my eye: "Since many commercial materials are relatively unsystematic, even using direct instructional techniques with them is far from ideal. It is our hope, that systematic procedures recommended here will stimulate the development of even better techniques." To underscore the importance of systematic teaching, they quote B. D. Bateman: "Teaching is the teacher's intentional arranging or manipulating of the environment so that the child will learn more efficiently than if he were to learn incidentally from the world at large." One needs to stop and marvel at the wisdom of Bateman, for this is precisely the element that is missing from the meaning-emphasis way of teaching reading. For the sake of making instruction an "interesting and meaningful experience," instead of *teaching* the children the mechanics of reading so they can then get on with extracting meaning from reading, they try to let the child discover on his own what reading is all about and in some miraculous fashion become an experienced reader without first having gone through the natural developmental stage of beginning reading.

The authors state that the guiding principle of direct instruction is what its name suggests: tell the student what he needs to know and give him opportunity to practice the newly acquired knowledge until an acceptable level of proficiency is reached. The authors advocate the sequential acquisition of the two global skills required for effective reading: decoding and comprehension. They enumerate the following four areas of knowledge that are necessary to learn for useful reading: (1)

know-how to decode language units, (2) skills to process these units, (3) the knowledge base necessary to understand the meaning of the words, and (4) the strategic knowledge necessary to organize information and make adjustments during reading.

The first thing to learn, obviously, is mediated reading. As the first step in this, they recommend the teaching of the letters. As soon as a number of letters is known, teach words composed of those letters. Sound out the words, but then repeat them at normal speaking rate. Practice reading the words until they become "sight words," meaning that they are fluently read on sight. The authors agree that students must be taught other word recognition techniques in addition to phonic analysis, such as structural analysis and contextual analysis. The former is useful for easy decoding of derivative words, the latter to verify meaning. They are against the use of picture clues as they promote word-guessing and retard students in their acquisition of proficient reading habits. They prefer to introduce words in isolation rather than in context, as paying attention to decoding and context at the same time overloads the processing capacity of the brain. They recommend the following sequence of skill acquisition:

1. Teach letter sounds and not letter names.
2. Teach sounding out, then sight reading.
3. Teach new words in isolation during the beginning stage of learning to read; later introduce regular words and frequently used irregular words in context.
4. Teach reading for accuracy, then reading for fluency.
5. Teach oral reading, then silent reading.

They state that just because short-term objectives (such as decoding and vocalization) are superseded by long-term objectives (such as fluency and comprehension), this does not lessen the importance of the short-term objectives. It is not possible to go through the learning process without becoming well versed in the intermediate stages of learning.

Once decoding is mastered, or at least a certain degree of proficiency is reached, comprehension can be tackled. This involves four factors:

1. <u>Comprehension units</u>: must be increased as appropriate from words to phrases, to sentences, to thought units, such as paragraphs or pages.
2. <u>Processing skills</u>: consist of rapid decoding ability, summarizing the main ideas of texts, drawing inferences, transforming complex syntactical structures into simpler ones, translating difficult vocabulary into simpler one, using critical reading and reasoning skills.
3. <u>Knowledge base</u>: the background knowledge needs to be increased to ensure understanding of the text.
4. <u>Strategic knowledge</u>: is the use of metacognitive strategies in monitoring comprehension and invoking strategies helpful in the reading process.

It is evident from the above that the authors discuss reading in general, not only the process of learning to translate graphic language into spoken language. When it comes to learning the mechanics of reading, the authors don't mince words about their preferences. "We recommend using a code-emphasis program approach during the beginning stage over a meaning-emphasis approach because a code-emphasis approach more readily allows the teacher to present reading instruction in a more efficient and humane manner. Instruction is efficient when the teacher can present the maximum number of skills in the minimum amount of time. Instruction is humane when students

encounter a high degree of success." They recommend plenty of practice of auditory skills in preparation for reading. These skills include (1) segmenting words into component sounds; (2) telescoping a series of blended sounds into a word; and (3) rhyming with different initial sounds to form new words.

To me observations and recommendations like the ones above meet any reality check. Another recent book worth mentioning is "Reading, Language, and Literacy," a collection of articles, edited by Fran Lehr and Jean Osborn (1994). The first article is by Marilyn Jager Adams, titled "Phonics and Beginning Reading Instruction."

In the article Adams states that the phonics instruction method is widely accepted today in the teaching of reading, although there is still argument about the effectiveness of the method. Many teachers believe that the modality of the children affects their ability to learn to read. Modality means that some children are visually, others auditorily attuned. Research indicates that this is not true, that modality has no bearing on the ability to learn to read. As far as the value of learning the letters is concerned, Adams states, "To the extent that our system of writing is alphabetic, its basic symbols — letters, graphemes, or letter patterns — represent phonemes, and its words are represented in their concatenation. To the extent that our system of writing is not alphabetic, words are nonetheless designed by specific and specifically ordered collections of letters. Either way, it would seem, prima facie, that learning to recognize words ought to involve to recognize their letterwise composition." Research showed that word envelopes and context clues with initial letter do not provide sufficient information to permit reliable word identification. Although fluent readers read by words — meaning that they recognize the word pictures comprised of sequences of letters — they still processes virtually every letter in the words they read. They do so regardless of semantic, syntactic, or orthographic predictability of the material read. Furthermore, their eye movements indicate that, without being aware of it, they actually detect the irregularities in the spelling of the words and the eyes stop on misspelled words, no matter that the misspelling is buried deep in a long word that is highly predictable from the context.

Even though it may seem that skillful readers read words wholistically, this is not because they had learned the words in that fashion, but rather because they have acquired a profound knowledge of the word, through frequently encountering it, and the spelling, sound and meaning come to form one entity in the schema of the reader. The interesting aspect of reading in an alphabetic writing system is that the memories of the letter sequences enable the readers to automatically process the text, but while they do this, they practice the recognition of the letter sequences, thereby reinforcing their knowledge of orthography.

Advocates of methods other than phonic analysis for decoding of words claim that decoding is harmful for getting meaning from the sentence, because by the time the word is decoded the line of thought is lost and thus the meaning is also lost. Practiced readers, if such event occurs, simply reread the sentence once they decoded the key word that is crucial to getting the meaning. Adams reports that on vocalization or subvocalization, researchers found that even for experienced readers it helps to understand complex or long sentences if they vocalize or subvocalize them.

As to teaching reading, throughout the centuries methods that helped children attend to the sequences of letters and their correspondences to speech patterns have been in successful use and appear to be the most effective. In order to learn reading effectively, the beginner learner has to be aware of certain linguistic basics. The must know letters, have phonemic awareness, know what words are. The lack of phonemic awareness for students of reading in alphabetic writing systems is the most severe hindrance in their successful learning. Unfortunately, children from lower socioeconomic background generally have lower phonemic awareness than others. The correlation of phonemic awareness and success in learning to read has been observed not only in English, but also in Spanish, Swedish, French, and Russian, just to mention a few.

Adams states on the basis of several studies that "Until letter recognition is reasonably easy, children cannot begin to learn to recognize printed words productively; until letter production is reasonably comfortable, they cannot and/or will not begin to write productively. With respect to the task and for the child, learning to recognize and discriminate printed letters is just too basic, too big, and too fussy a task to be presumed and left alone. Finding easy ways to ensure that all children are developing a comfortable knowledge of letters should be a priority concern at entry levels."

Adams concludes the article thus: "The most frequently cited disadvantage of encouraging children to sound out new words is that it may cause them to become 'word callers' — to become so absorbed in the decoding process that they lose track of meaning. In fact, research affirms that, midway through first grade or so, children tend to shift away from contextually appropriate miscues toward errors that maintain graphemic similarity to the print of the page. Yet, these same studies also demonstrate that, as the children's word recognition skills improve, their respect for context returns . . . As children internalize the spelling of more and more words, it will happen less and less often. Meanwhile, the only way for them to reach that point is by lending attention to unfamiliar spelling patterns. Indeed, research suggests that, beyond phonemic awareness and sheer bulk of reading experience, readers' inclination to examine rather than gloss the spellings of new words may well be the strongest determinant of their orthographic facility. And, on the opposite side of the coin, work with second graders shows that, once an unfamiliar word has been decoded and re-read just a few times, its recognition remains speeded significantly and quite enduringly."

One more reference to a relatively recent book, "Word Recognition: The Why and the How," (1987) by Patrick Groff and Dorothy Z. Seymour. As you may expect, this book also advocates the use of phonics in the teaching of reading. The authors start out by agreeing that the ability to recognize single isolated words is not the purpose of reading. Rather, it is the getting of meaning from printed text. Nonetheless, to understand written material a reader must be able to reproduce what its author intended to say, for which the exact understanding of each and every word is required. It is necessary for the reader to be able to decode the written words and to know their meanings. In the broadest sense, reading also means remembering information, making inferences of and applying what is read.

To learn to recognize written words the child needs to develop four skills. He must be able to decode words by recognizing letters and converting them into phonemes, then synthesize spoken words from the phonemes. It is helpful if the child can break multisyllabic words into parts which he can then decode using phonic methods. He needs to know sentence structures so that the words make sense within the linguistic framework, and finally the reader has to share with the author a common conception of the meanings of the words.

The author's caution that word decoding and word recognition are not interchangeable terms, as word recognition many times involves the use of context cues. In order to readily and effortlessly understand a sentence, a child must have a knowledge of phonics, namely the grapheme-phoneme correspondences in the words, he must understand where in the sentence structure the words fit in, and must have an awareness of at least one meaning of the word. They concede that all that phonics can be expected to do is help children get approximate pronunciations of unrecognized written words. With these approximations the children can then infer what the word is.

The authors point out that "In the learning of oral language children proceed best on a 'whole-task' basis. They need little or no formal instruction based on a sequence of component skills. Quite the reverse is true for reading. While learning to speak is a universal and natural skill, reading is a secondary and contrived one. All societies, however primitive, use spoken language. While the need for written language is not universal to man, speaking is. The need for written language emerges only when a society moves away from what is called its 'natural' state of being."

Research shows that letter recognition tasks are better preparation for children's learning to read than are the so-called visual discrimination tasks. Also, research has shown that the reading process of the proficient reader and of the beginner reader do not completely overlap; therefore, the act of skilled reading cannot be used as a model for how to teach beginning readers to read. Research does not support the notion that children best learn to read in essentially the same way that they learned to speak.

Whole word recognition is practiced by adults who are skilled readers, but it is prevalent only in adults who are past the mediated reading stage. Therefore it is erroneous to apply observations made on them to beginning reading. Groff and Seymour quote study after study to illustrate the usefulness of phonics instruction and the uselessness of the meaning-emphasis methods. The research evidence contradicts the usefulness of teaching sight words before phonic instruction begins. In fact, it has shown that overall word shape is not a sufficiently good discriminator, and children should not use it because without internal analysis it is a poor recognition means, furthermore it is not transferable to other words. Word shape is also a poor determinant of words. For the application of word recognition knowledge to work well, children must practice it until it can be done automatically, that is effortlessly, quickly, and without undue conscious attention to the process.

On the function of oral reading, the authors state that it is an important part of word recognition instruction. The earlier attempts to teach children reading without vocalization "was based on the theory that a reader can and should go directly from the printed word to comprehension of it without any implicit speech between. We have learned that this is an impossibility — which explains why children in the early non-oral experiments used as much implicit speech as did children who learned to read by reading aloud. As Gibson rightly concludes, 'For a child who is learning, sub-vocal speech may be essential for getting the message.'"

Discussing context cues, the authors say context is an extremely important component of culling meaning from printed text, just as it is in getting the meaning of spoken language. Recognizing words in isolation depends on three factors: (1) the ability to recall grapheme correspondences with speech sounds, (2) the knowledge of various combinations of letters that are used in English spelling and (3) the ability to find phonograms and smaller words and morphemes within the word that is being decoded. During reading, however, the words are not in isolation, but in the context of sentences, and the meaning of the word largely depends on the context. When context cues serve to determine the *correct meaning* of a decoded word in a particular sentence structure, it is of primary importance. Just take these two sentences: "Cooks peel the potatoes." "The potato cooks for 10 minutes." When context cues are used to identify the word in its *lexical sense*, research has found that only 10 percent of the tries are correct. Research also shows that to avoid the decoding problem by relying on the use of context cues is to avoid becoming a fluent reader, and that children with poor word recognition skills use context cues as a crutch for their word identification deficiencies. Guessing at words is the most harmful suggestion that can be made to beginning readers.

It is interesting that ten years ago when I developed a linguistic primer based on the work of others before me, even though I was not aware of all the information mentioned in the preceding pages, I intuitively applied much of what is contained in them. The only element missing was the phonemic awareness exercises. Simply, I never thought of them, most likely because I must have a "good ear" for languages, or something like that.

A primer that will work

All the preceding is fine as far as showing what are the elements of teaching reading that will lead to good results, ensuring that children will become competent fluent readers. But what if somebody needs immediate practical help to teach somebody read? Two books published some

time ago would be of help. One is "Reading with Phonics" by Julie Hay and Charles E. Wingo (J. B. Lippincott Company, 1954), the other is "Let's Read" by Leonard Bloomfield and Clarence L. Barnhart (Wayne State University Press, 1961). They may be available through your book store. Another source of help is closer at hand.

At the end of this book is my heretofore totally unnoticed "Easy Steps To Reading," a linguistic primer with a tutorial guide. It starts out with phonemic awareness training and by its end the pupil can read anything and everything. It is meant to make life easy for the pupil as it involves reading in the senses of decoding or word recognition, and comprehension. It is based on exercises implicitly teaching the mapping characteristics of English orthography, while in the same lesson teaching the pupil to read for comprehension as well. It should work for first graders as well as for adults, although I must say that the subject of the stories in the reading exercises may not be equally interesting for all age groups. No one can please all of the people all of the time, but the stories serve their purpose, which is to provide text with meaning for exercising the mapping patterns learned in that particular lesson and the ones preceding it.

Using "Easy Steps To Reading" a person can be taught to read in nine months without any strain on pupil or tutor. No special training is needed for the tutor in addition to reading and following the tutorial guide. I would suggest that even if the pupil has some reading knowledge, start at the beginning, namely at the phonemic awareness training even if it may seem childish or too simple. The reason for this recommendation is that in most cases the root of the reading difficulty lies in the incomplete knowledge of basics that are needed for successful mediated reading. So, start at the beginning, then proceed as convenient. Covering one Step in one week after the completion of the phonic training will make the nine-month completion of the course possible. However, for a person interested in learning to read, there is nothing magic about the one week per Step pacing. There is no limit to how fast the material can be covered.

This is how "Easy Steps To Reading" is built up. It sequentially teaches the following skills:

1. Phonemic awareness training
2. Teaching the letters of the alphabet
3. Letter-sound correspondences
4. Finding meaning in sentences
5. Mapping of grapheme patterns onto phoneme patterns
6. The use of the dictionary

Perhaps it might be useful to relate some of these skills to comments and observations I read since the development of the primer. In "Phonemic Awareness: Consideration of Research and Practice" by Kathleen Copeland, Pamela Winsor, Jean Osborn, and article that appeared in "Reading, Language, and Literacy," edited by Fran Lehr and Jean Osborn (1994), the authors say that phonemic awareness is of great importance. The children must know that sounds comprise words and words sentences. They must be able to differentiate the sounds and to assemble sounds into words and disassemble words into component sounds. This can be taught as a game, and children enjoy it. "Children's movement from spoken to written language includes mastering a written code, which by its very nature requires knowing how spoken sounds are represented by letters. Children must understand this alphabetic principle. Basic to such understanding is phonemic awareness that enables children to attend to letter-sound pairings of words and internalize orthographic representations." Blending and segmenting is essential to effecting decoding.

On teaching the letters of the alphabet, let us take as a reinforcement of its importance the book by Charles C. Fries: "Linguistics and Reading" (1962) Fries explains that the child must not only learn the letters but learn them well. By this Fries does not mean the names of the letters, or their

position in the alphabet. The knowledge of these will be necessary later when there is need for spelling words and trying to find entries in listings and catalogs. For learning to read, they are unnecessary. It is imperative, however, to be able "to identify and distinguish the graphic shapes of the letters as can be shown by instant and automatic responses to recognition." He adds, whether we like it or not, efficient fluent reading depends on a developed habit of instant unconscious identification responses to the patterns of graphic shapes that represent the language signals of our language code [printed words], which can only occur through practice. This does not mean that children must know all of the letters before they can start learning to read. A small group of letters learned initially suffices, as long as all of the words selected for that phase of the learning process contain no other letters than the ones learned.

If the proper phonemic awareness preparation is done and the linguistic method is used in teaching somebody to read, and if there is interest and diligence on the part of the pupil and the tutor, there should be no problem in achieving the goal of literacy in a surprisingly short period of time. Fries says on this subject, "from the evidence available, we believe that … any child can learn to read within a year after he has learned to 'talk' his native language satisfactorily. Having learned to speak and understand the language, the child has well developed language signal reception abilities. Now he needs to develop similar skills for high-speed recognition responses to the spelling-patterns of the same language signals." However, in learning to read, the immediate objective for the child is not the learning of "new words," or of "new grammatical structures," or of "new meanings," but to get sufficient practice to systematically develop word recognition skills.

Where might we go from here?

The single most troubling discovery I made during my research for this book is that about 95 percent of the reading professionals regard reading as a single subject from pre-kindergarten to 12th grade. They make no differentiation between "learning to read" and "reading to learn." It is taken for granted that learning to read (in the sense of decoding graphic symbols into spoken language in which the children are conversant) is a process that takes several years. This belief has a profound effect not only on the instruction of reading, but the entire curriculum.

In scientific literature it is customary to call a theory everything that cannot be touched, weighed, counted, or measured with a yardstick. Therefore, using scholarly caution while climbing out on the limb, I make the following statement. There are three theories that constitute the nucleus of learning to read around which orbits everything else. They are the following:

1. The theory postulating the existence of mediated reading (the process of converting strings of graphic symbols of writing to strings of sounds in the spoken language) and fluent reading (the process of extracting meaning from writing)
2. The theory postulating the existence of cognitive learning and associative learning
3. The theory proposing the mapping characteristics of English orthography wherein groups of graphemes are associated with morphemes (strings of sounds in speech), which are consistent, although they may sound different from dialect to dialect.

Being a man of practical inclinations, I accept these "theories" as facts which can stand any reality check. Numerous experiments and studies also conclusively point towards the high probability of their validity. Once they are accepted, the world appears in a new light. Getting over the stage of mediated reading, where the reader puzzles over every, or most, words in the text, can be achieved in a very few weeks rather than several years. Developing experience as a fluent reader takes time. To acquire two years' experience takes two years — there is no way around that.

Teachers say that "precocious children" can learn to read within a few short weeks. These children simply discover by themselves what reading is all about, namely converting letters into words, and from there on they read, stumbling over an occasional word or two. Both my sons and my granddaughter belong in this fortunate group. They, like millions of other children, were able to learn to instantly recognize letters and later words as strings of letters. They figured out for themselves how the strings of letters correspond to spoken words. In the case of our boys and granddaughter, I did not teach them all this. Their mother did not teach them all this. Their teachers did not teach them all this. They acquired their knowledge through the cognitive learning process. They are extremely fortunate.

The unfortunate aspect of the matter is that those who are not able to learn all these things cognitively have a hellishly difficult time because they have precious little chance that somebody will present the material to them so that they can learn it associatively. They are most of the time hopelessly confused by having to attend simultaneously to two entirely different mental tasks: mediated reading and fluent reading — or to be more specific, converting one surface structure they are not familiar with into another surface structure they are knowledgeable about and experienced with, and converting surface structure into deep structure. And this is the basic wrong with the generally accepted way of teaching to read, this is the underlying reason for the exorbitant rate of failure in reading instruction. It can be called whole language, whole-word, look-and-say, language experience, eclectic, balanced and God knows how many other names, the unfortunate millions of children who would need a systematic framework to associatively learn the why and how of reading are left abandoned.

This sad situation will prevail until *all* the reading experts and professionals are willing to accept the validity of these three principles and accordingly modify the way reading is taught. My feeling is that it will be a glacially slow process, but there are hopeful signs. Here again, I have only anecdotal evidence. More and more books, written by teachers of teachers in colleges, appear recognizing these principles, which point towards the prospect of eventually having teachers in classrooms who naturally take to them and apply them.

Judging from Houghton-Mifflin's web site, at least one publisher also recognized these guiding principles. Dr. John J. Pikulski in a position paper, "The Role of Phonics in the Teaching of Reading," tells about Houghton Mifflin's newly published program, "Invitations to Literacy."

Pikulski states that "A reputable body of research substantiates the positive effects of well-designed phonics instruction and provides guidance about the form that instruction should take. The following research conclusions guided the development of Invitations to Literacy:

1. "Phonics is an essential part of a comprehensive approach to the teaching of reading.
2. "Phonics instruction needs to be explicit and direct; incidental and opportunistic approaches to developing phonics are less effective.
3. "Phonics instruction can and must be meaningful, lively, and engaging; phonics should not be equated with repetitious drill or the mindless completion of worksheets.
4. "In order for children to gain full use of phonics skills they need guidance in integrating them with other word identification skills and in strategically and fluently applying those skills.
5. "In order for children to gain full use of phonics skills they need many opportunities to apply them to functional and interesting reading and writing activities.
6. "While the development of phonics and other word identification skills is essential and necessary for skillful, mature reading, it is not sufficient; skillful mature reading must

also build upon language, vocabulary, and concept development as well as a variety of thinking skills."

Well said!

"Based on the available research," Pikulski continues, "Houghton Mifflin incorporated into Invitations to Literacy the essential components of an effective program for development of word identification skills and reading fluency." Here is a welcome sign that the publisher of a reader series recognizes the fact that mediated reading and fluent reading are horses of different colors. Their program is built around seven key areas of knowledge that relate to the development of both mediated reading skills and fluent reading skills. Since our subject here is learning to read, items 5 and 6 are not quite germane, but I list them anyway.

1. Phonological/Phonemic Awareness — Phonological awareness refers to children's conscious awareness that spoken words are composed of identifiable sounds. Also, children need to be able to manipulate (segment, blend, substitute) sound units. Printed words are not an arbitrary sequence of letters, rather letters represent speech sounds that combine to form spoken words.
2. Familiarity with Print — Knowledge of letter shapes and names. Familiarity with concepts of letter, word, sentence, and the relationships of printed and spoken words. Learning to identify high frequency printed, not phonically regular words.
3. Systematic, Explicit Phonics — Phonics instruction is systematic and explicit, and it progresses from simple, stable letter/sound relationships to more complex and variable elements. Through phonics and spelling instruction children develop the ability to segment and blend phonemes and to sound out words by blending letter sounds from left to right.
4. Spelling — Phonics elements that are taught in a unit of instruction are reinforced in spelling instruction in the same unit.
5. Vocabulary — Beyond the initial stages of learning to read, there is a very strong relationship between knowledge of word meanings and reading comprehension. Vocabulary instruction and learning to derive word meanings from context extend throughout the program.
6. Fluent Reading — Decodable text provides children with practice material to apply phonic elements in the context of real reading.
7. Writing — Writing offers the opportunity to apply phonics and related spelling knowledge. In shared writing and other writing activities, children learn to think about the sounds in words they want to write and to use phonics skills to represent the sounds.

It seems a rather important development that Houghton Mifflin, a prominent publisher, has accepted crucial theories and research findings that have been developed during the past thirty years and based an entire reader series on them. Occurrences such as this give one hope that there is movement in the right direction which may lead to tangible improvement in general literacy.

Concluding thoughts

The simple cure for the ills of our reading instruction process is to recognize the fact that English is a language with alphabetic writing, that 87 percent of English words are consistent in spelling pattern, and the best practical way of learning to read in English is by the use of phonics in the framework of linguistic exercises.

Many arguments were brought up in favor of phonics. Let me add one more. When one begins to learn a foreign language using a language book, invariably, the first pages of the book are devoted to the sounds of the spoken language and how those sounds are written by the use of letters. The basis of learning is a knowledge of phonics, which enables the student to read out aloud the spoken words of the new language without having the slightest notion of their meaning. It is strictly a translation of written surface structure to spoken surface structure. In learning a language it is recognized that memorizing the meaning of the spoken words can come only after one can speak them, thus the building of a vocabulary follows the logical first step of being able to render in sounds the written words. The same goes for those whose native language is English and are in the process of expanding their vocabulary.

When reading teachers object to the "rote memorization of words" they associate with learning to read by the phonic method, they only reveal their being confused. The phonic method of reading does not consist of memorizing words. The linguistic drills list great numbers of words with similar spelling pattern mapping to similar sound pattern, the internalization of which is the object of that particular exercise. These words are not to be memorized, as most already are in the receptive and expressive vocabulary of the student. Nor are there any rules to be memorized and recited from memory. Rather, by having these words presented in groups the student can learn through repeated experience the proper spelling for the sounds in question and store away this knowledge as a schema, so that later, when such a combination of letters is seen, the proper sounds are uttered intuitively. Word memorization is required only in the course of whole-word learning, where each and every word must be learned by memorizing its appearance. A good illustration of "rote memorization learning" associated with the whole-word way of teaching is the use of flash cards. The purpose of flash cards is to help commit words to memory in their entirety. If that is not rote memorization, I don't know what is.

In reading with phonics in a linguistic presentation frame the drills are based on different words containing groups of letters that are uttered using a particular sound pattern. With the phonic-linguistic method words are not memorized. The purpose of the drills is to eliminate the need of memorizing a great number of spelling rules by giving numerous examples of the association between specific stings of letters and strings of sounds, making the "rules" of these associations stick in the subconscious mind of the student. But here again, the ingrained attitude of meaning-emphasis oriented teachers obscures the facts.

The unwillingness of the meaning-emphasis adherents in academia to give consideration to code-emphasis ideas can be illustrated by the following anecdotal information. I found "Direct Instruction Reading" by Douglas Carnine, Jerry Silbert and Edward J. Kameenui one of the best books published lately on the subject of teaching reading. It advocates a sensible approach to the instruction, starting with phonemic awareness training and progressing in a systematic way from learning the alphabet through phonics exercises to reading for meaning. Since its acquisition by the J. Paul Leonard Library of the San Francisco State University in 1990 to August 1997, it was checked out three times — on the average once every two years. On the other hand, "Teaching Children to Read" by Ray D. Reutzel and Robert B. Cooter, Jr., a Whole Language based book on the instruction of reading was checked out seven times between its acquisition at the beginning of 1997 and August of the same year.

To me this shows what is likely to be the prevalent attitude among reading professionals — judging from the fact that indications to the contrary, they obstinately cling to their meaning-emphasis convictions. They must be ignoring the results of research and the logic of arguments, all of which point towards fatal shortcomings in all meaning-emphasis methods in the case of children who need to learn by associative means. Likewise, they must be ignoring results of research and reasoning which point towards workability of well-built, code-emphasis methods, in particular the phonemic awareness with linguistic mediated reading training, which work equally well for children who learn cognitively or associatively. It is likely that they dismiss the developments and findings of the last thirty years that are not congruent with their convictions with a knowing nod and a smug smile, convinced that being experts in their field they know best. I hold such people closed-minded.

Closed-mindedness is one of the worst of human traits. It is the main cause of bigotry, ethnic and religious wars, social and political strife, racial hatred and a host of other plagues that torture and bedevil mankind.

I am convinced that professional arrogance and closed-mindedness lie at the root of our poor state of literacy. It is heartbreaking to see one quarter of our fellow countrymen deprived of the opportunity to function as fully empowered members of our society that is based on the knowledge of reading and writing in the English language. If all of those who determine the way reading and writing is taught would be willing to set aside their prejudices and examine, ponder and accept the evidence of the teachability of reading in English and put their talents, intellectual powers and diligence behind the proper way of its teaching, then the entire and seemingly unresolvable problems of illiteracy and functional illiteracy would disappear from our midst in a few short years, never to rear their ugly head again.

Notes from Internet Publisher: Donald L. Potter

July 18, 2005

I recently purchased a copy of Harry Hattyar's e-book, *Easy Steps to Reading, a linguistic primer*. After reading through the book, I knew that I had purchased a well crafted and readily usable masterpiece. Mr. Hattyar's comprehensive linguistic (phonic) method teaches reading through thirty-six easy steps, accompanied with plenty of decodable text for practicing decoding skills. The book can be used for all ages; but the stories, especially the latter ones, are best suited for older children and adults. The book can be purchased in a nice spiral binding from Amazon.

I was curious as to how Mr. Hattyar developed his method. He wrote me a nice letter briefly explaining how he got interested in the field and mentioned that he had written a book, *Illiteracy in America: Understanding and Resolving a Grave National Problem*. The title sounded intriguing, and I wanted to know more. Mr. Hattyar graciously sent me his Word files for each chapter. I quickly read through his fascinating book and realized that he had produced a well researched, up-to-date, accurate expose of the state of reading instruction in America today. He explains, "I sent it to about 50 publishers, but not being a PhD and with no fame in the field, I ended up with a nice collection of rejection slips. Too bad, because, I think, I have a few good thoughts in the book and it helps to illuminate the problem and even suggests a solution." He adds, "One of the publishers that were not interested wrote that the book was "too comprehensive."

I believe that we are in need of a comprehensive, up-to-date expose and that Mr. Hattyar's book fulfills this need. After some correspondence, Mr. Hattyar and I came upon a plan to publish *Illiteracy in America* as a free e-book on my web site, www.donpotter.net, in hopes that we might reach as many people in the field as possible.

September 29, 2012 Update from Donald Potter

Due to moving last week to a new server, some of the documents on the www.donpotter.net were removed from the Internet. Among these documents were Mr. Hayttar's book on *Illiteracy in America*. Mr. Potter used the opportunity to make a few formatting changes to the book and republish it under a new URL.

I would also like mention that on March 5, 2007 Mr. Hattyar sent me the PDF file for his reading method, *Easy Steps to Reading: A Linguistic Primer*. I published his reading method book at that time as a simple pdf file, which is now republished under the URL below. In order to increase exposure for the book it is available free from me or in an inexpensive spiral binding on Amazon. Although my edition is free, I suggest purchasing the spiral edition to save on ink and paper.

http://donpotter.net/pdf/easy-steps-to-reading.pdf

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