

WHY ENGLISH-SPEAKING CHILDREN CAN'T READ

As the universal-education movement began gathering momentum, educators broke ranks with nineteenth-century traditions. Reading instruction got so far off track that the twentieth century will go down in history as the century of the demise of the English alphabet code. The final reckoning of an unceasing attempt on its life came in the 1990s. For the first time, properly conducted national testing, international reading surveys, cross-cultural studies, and classroom research pointed to the inescapable conclusion that reading instruction in English-speaking countries is a disaster. The functional illiteracy rate for American 9-year-olds is 43 percent (Mullis, Campbell, and Farstrup 1993; Campbell et al. 1996).

International reading surveys carried out by Statistics Canada brought dismal news (Organization for Economic Cooperation and Development, 1995, 1997). In six English-speaking nations, the proportion of functionally illiterate/very poor readers among 16- to 65-year-olds ranged from a low of 42 percent in Canada to a high of 52 percent in the United Kingdom. These figures were in stark contrast to those of many European nations. The comparable figure for Sweden was 28 percent. Sweden's functional illiteracy rate for 16- to 25-year-olds (level 1 of 5 levels) is 3.8 percent. This rate is nearly three times higher in Canada (10.7 percent), and six times higher in the United States (23.5 percent).

In 1993, an astonishing report came in from Austria. Heinz Wimmer set out to study poor readers and initiated a citywide search. He asked 60 second- to fourth-grade teachers in Salzburg to refer their worst readers for special testing. They identified 120 children, about 7–8 percent of the school population. Imagine Wimmer's surprise when the worst readers in the city scored close to 100 percent correct on a test of reading accuracy and did nearly as well in spelling. Clearly, none of these children had any

difficulty with the German alphabet code. It turned out their problem was reading *too slowly*. But *slow* is a relative term. How slow is slow?

To find out, Wimmer collaborated with an English researcher (Wimmer and Goswami 1994) to compare *normal* 7- and 9-year-olds from Salzburg and London. The results were startling. The Austrian 7-year-olds read comparable material as rapidly and fluently as the English 9-year-olds, while making half as many errors. Yet the Austrian 7-year-olds had had 1 year of reading instruction, while the English 9-year-olds had been learning to read for 4 or 5 years. Equal speed and half the errors in one-quarter of the learning time is an *eightfold increase in efficiency!*

Wimmer and his colleagues (Landerl, Wimmer, and Frith 1997) got the same extraordinary results when they compared their worst readers (*incredibly slow*) with English children identified as “dyslexic” (*incredibly inaccurate*). The children were asked to read text consisting of nonsense words. The so-called Austrian slow readers were not only more accurate than the English “dyslexics,” but they read twice as fast. The average Austrian “slow reader” would be able to read a 500-word passage in about 10 minutes, misreading only 7 percent of the words. The average English “dyslexic” would read only 260 words in this time, and misread 40 percent of the words. It seems the expression “worst reader” is relative as well.

An even more dramatic study was reported from Italy. Cossu, Rossini, and Marshall (1993) tested Down’s syndrome children with IQs in the 40s (100 is average) on three difficult reading tests. They scored around 90 percent correct, breezing through Italian words like *sbaliare* and *funebre*. However, they could not comprehend what they read, and they failed miserably on tests of phoneme awareness, the skill that is supposed to be essential to decoding.

What is going on?

The answer is simple. European countries with high literacy rates have a twofold advantage. First, they have a transparent alphabet code, a nearly perfect one-to-one correspondence between each individual sound (phoneme) in the language and a visual symbol—a letter or letter pair (digraph). For languages with more sounds than letters in the alphabet (English has 40+ sounds), this problem was handled sensibly. When a letter or digraph is reused to represent more than one sound, it is marked by a special symbol (a diacritic) to signal a different pronunciation. In

German, an *umlaut* distinguishes the vowel sound in *Bäume* (boimeh) from that of *Baum* (boum). And while a sound can occasionally be spelled more than one way, there is never more than one way to read a letter or digraph. The English spelling system suffers from both afflictions: multiple spellings for the same phoneme, and multiple ways to decode letters and letter sequences. This is the definition of an “opaque” writing system.

Reading instruction is the second part of the equation. To a great extent, reading instruction is a function of the complexity of the spelling code. Teaching a transparent writing system is far easier than teaching an opaque one, because it is obvious (transparent) how it works. Teaching can be streamlined and proceeds at a rapid pace. In Austria, children are taught the sounds of the German language and which letter(s) represents each sound. Reading and spelling are integrated at every step, which reinforces the code nature of a writing system—that is, the fact that the operations are reversible, involving both encoding and decoding. No clutter or noise clogs the process, such as teaching letter names or lots of sight words. Because basic reading instruction is fast and pretty well guaranteed, it can begin late—at age 6 in most countries (age 7 in Scandinavian countries)—and end early (after 1 year or less). Parents sleep soundly in their beds, safe in the knowledge that their child will be reading and spelling by the end of the first year of school. (This is not to say that inappropriate teaching methods cannot nullify the advantages of a transparent alphabet.)

The cross-cultural comparisons reveal that the source of English-speaking children’s difficulties in learning to read and spell is *the English spelling system and the way it is taught*. These comparisons provide irrefutable evidence that a biological theory of “dyslexia,” a deficit presumed to be a property of the child, is untenable, ruling out the popular “phonological-deficit theory” of dyslexia. For a biological theory to be accurate, dyslexia would have to occur at the same rate in all populations. Otherwise, some type of genetic abnormality would be specific to people who learn an *English* alphabet code and be absent in people who live in countries with a transparent alphabet, where poor readers are rare. A disorder entirely tied to a particular alphabetic writing system is patently absurd and has no scientific basis. English-speaking children have trouble learning to read and spell because of our complex spelling code and because of current teaching methods, not because of aberrant genes.

A Century of Whole-Word Methods

The historical evidence shows that teaching methods most similar to Dale's (and the methods used in other European countries) resemble the programs found to be most effective in recent studies (see chapter 5). These phonics-type methods were replaced early in the twentieth century as a consequence of universal education. Self-appointed education gurus and newly fledged professors of education with little or no knowledge of how to teach reading decreed that old-fashioned phonics had to go. Instead, children should be taught whole words by sight, just as Chinese people were thought to do, using a method known as "look-say." The "whole-word" century was launched, and the alphabet code soon vanished without a trace.

Look-say was replaced early on by a meaning-based sight-word method. Children were introduced to a few words in each lesson, spent most of the lesson learning the meanings of these words (words they already knew), and then read dreary stories where these words were repeated endlessly:

"Come, come, John. See me. I can swing. Come and see."

Phonics lessons came in late or not at all, and made no sense. This approach was the platform for "basal readers" (U.S.) or "reading schemes" (U.K.), products of the educational publishing houses. Basal readers dominated from the 1930s until the late 1970s. In the mid-1960s, a survey showed that basal readers were used in 95 percent of classrooms in the United States. Many people still remember *Dick and Jane* or *Janet and John*.

The extreme dullness and repetitiveness of the basal-reader method, plus other precipitating factors, eventually led to a backlash. Basal readers were swept away by a third whole-word method that came to be known as "whole language" (U.S.) or "real books" (U.K.). The theory behind whole language is that with minimal guidance, children can teach themselves to read naturally. They do this by following along as the teacher reads stories written in natural language, and by reading on their own while using all their "cuing systems." These include everything from guessing words based on context and the illustrations, to sight-word mem-

orization, to attempts to decode by letter names. Children are encouraged to “invent” their own spelling system during creative writing.

The basal-reader approach may have been boring, slow, and wrong, but at least it was *honest*. What you saw was what you got (figuratively and literally). Whole language is based on faith, promising everything and delivering nothing. Children are passed from grade to grade in the belief that they will eventually teach themselves to read. And if they do not, it is their fault. Something is wrong with them. Needless to say, whole language was not a success. It led to skyrocketing illiteracy rates, quite beyond anything produced by basal readers. In California, where whole language was mandated in 1987, the functional illiteracy rate soared to 60 percent, plunging California to last in the nation. The disastrous test scores dampened the enthusiasm of parents and legislators for whole language, but had little or no effect on professors of education, education publishing houses, curriculum specialists, and many classroom teachers. Because they control what goes on in the classroom, whole language is still with us, battered but unbowed, despite lip service to the contrary.

Nouvelle Eclecticism

In the 1990s, reading researchers and directors of research agencies, supported by state and national politicians, launched a campaign to rescue children from whole language, claiming they wanted a return to phonics. But after nearly a century, no one was quite sure what phonics was. Instead, what they proposed was not phonics, but a new kind of eclecticism. In the past, eclecticism referred to a teacher's habit of mixing different approaches and materials in the mistaken belief that children have different learning styles. This form of eclecticism is individualistic and haphazard.

“New eclecticism” is based on the notion of *developmental gradualism*, a consequence of the myth that children become more phonologically aware as they grow older. Children begin by learning whole words by sight, then move on to syllables (clapping out beats), then to word families (words with rhyming endings like *fight*, *might*, *sight*), with the goal of being eased into an awareness of phonemes, a process taking a year or two, if it is completed at all. This not just a passing whim. It is the method promoted by people in charge of research funding in the United States.

Full-blown “nouvelle eclecticism” was recently mandated by the British government, complete with suitcases of lesson plans, charts, and materials sent to every elementary school in the country at a cost to the taxpayer of £56 million.

The Myth of Phonological Development

There is a strange and twisted tale behind this new movement. Inspired by discoveries in speech perception (A. M. Liberman et al. 1967), Isabelle Liberman (Liberman et al. 1974) proposed that phonological awareness “develops” throughout childhood and underpins “reading readiness.” Around the same time, paleographers and linguists were launching a new field of study—the comparative analysis of writing systems. Among a spate of books on the topic, by far the most influential was by Ignace Gelb (1963). Gelb proposed that writing systems “evolve.” They begin with pictograms (recognizable little pictures standing for whole words), graduate to logograms (abstract signs for whole words), then to syllabaries (syllable signs), and finally to alphabets (phoneme signs). According to Gelb, this is true of every civilization that invented writing. While Gelb was highly regarded for his scholarly work (he was instrumental in cracking the code of the Hittite writing system), his colleagues in paleography were far less enthusiastic about his evolutionary theory. And as more archaeological evidence came to light, it became clear that Gelb’s theory was fatally flawed.

For Liberman and her colleagues, Gelb’s theory was almost too good to be true. It was assumed that the “evolutionary” order of writing systems mirrored the developmental sequence of speech perception—moving from larger to smaller phonological units (whole words, syllables, phonemes). And because children appeared to differ in when and whether they became “phonologically aware,” the theory provided an explanation for dyslexia as well.

There is no scientific support for this theory or anything resembling it (a complete analysis of this issue is provided in *Language Development and Learning to Read*). Instead, the evidence shows that children become less rather than more phonologically aware as time goes by. Tiny babies can discriminate between any consonant-vowel contrasts (*ba* versus *pa*) in every language of the world, an aptitude that disappears by 12 months of

age. By 9 months they can tell the difference between legal and illegal phoneme sequences in words (Aslin, Saffran, and Newport 1998; Friederici and Wessels 1993; Mattys et al. 1999). In English, illegal consonant sequences commonly form word boundaries (“word boundaries”). Infants use these patterns to wrench words out of the speech stream in order to build a receptive vocabulary. If they could not hear phonemes, it would be impossible to split phonemes from one another. Chaney (1992) found that virtually all 3-year-olds can identify a single phoneme error in a spoken sentence and fix the error. Furthermore, they can blend isolated phonemes into a word and pick that word from a row of pictures with 88 percent accuracy (96 percent scored significantly above chance).

This does not mean that young children know that speech consists of phoneme sequences or that an alphabetic writing system represents these phonemes. They will not make this connection unless it is taught. Even fluent readers are not consciously aware of phonemes until someone points them out, and there is no reason they should be. The brain carries out this analysis so rapidly that it operates below the level of conscious awareness. No one needs to be aware of phonemes unless they have to learn an alphabetic writing system. Anyone, at any age, who has to learn an alphabetic writing system must be taught to unravel phonemes in words to understand how an alphabetic writing system works.

The proposed link between the discoveries in speech perception (its biological foundations) and Gelb’s theory of the origin of writing systems (its supposed “evolutionary” foundations) had a powerful impact on reading research in English-speaking countries that has not abated over time. Yet Gelb’s theory was wrong, and the analogy to speech perception without merit. Writing systems do not evolve.

The comparative analysis of writing systems was in its infancy when Gelb proposed his theory in 1963. This discipline came of age with the publication of Florian Coulmas’s *Writing Systems of the World* (1989), a synthesis of extraordinary breadth and depth. This was followed in 1996 by Daniels and Bright’s remarkable compendium. Perhaps it is fortuitous that Coulmas’s book appeared at the precise moment in history when we finally learned the ghastly truth about the functional illiteracy rates in English-speaking countries. This is a problem of monumental proportions. It is not merely a question of how to teach our formidable spelling

code, but how to shed 100 years of unsubstantiated beliefs about how to teach reading and false theories about why children fail.

Before any real transformation can occur, people need a deeper understanding of the issues. They need to know what a writing system is and how it works. They need to know how a *particular* writing system can and cannot be taught and which skills are important to success. Coulmas gave us the first road map to find our way out of this quagmire. There is no better place to start than with the lessons learned during the 5,000-year history of the origins of writing systems. A writing system has a central logic, and this logic is based on how the human mind works. If this logic is not adhered to, a writing system cannot be taught effectively, if at all.

Before I move on to discuss these new discoveries, I want to present the commonly held assumptions about writing systems that either directly or indirectly affect what goes on in the classroom. It may come as a surprise that *not one of these assumptions is true*.

1. Writing systems evolve from whole-word systems (logographs), to syllable systems (syllabaries), to phoneme systems (alphabets). Logographs are “low” on the evolutionary scale (poor), and alphabets are “high” (best).
 2. Ontogeny recapitulates phylogeny. Children go through the same stages during development of speech perception, mirroring the evolution of writing systems: from whole words, to syllables, to phonemes.
 3. The evolutionary process (in both cases) is inevitable and goes in one direction.
 4. There is such a thing as a logographic writing system.
 5. The Chinese have a logographic (archaic) writing system.
 6. The alphabet principle was discovered only once and spread by diffusion.
 7. Alphabets are superior to other writing systems. Nearly all writing systems today are alphabetic.
 8. An alphabetic writing system can be used as a proxy for a logographic writing system. That is, children can learn to read an alphabetic writing system by memorizing whole words (random letter strings) by sight.
 9. Different sound-based units can (and should) be mixed together in teaching the alphabet code, including (but not limited to): whole words
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(sight words), syllables (*ta-ble*, *droop-ing*), rhyming endings or word families (*and*, *band*, *hand*, *sand*), consonant blends (*br*, *tw*, *sl*, *sts*, *nt*), and individual phonemes. Children will not be confused by this practice and will clearly understand how the alphabet code works.

10. Over time, every word is read as a sight word. Ultimately, people read holistically, and only rare words or unknown words need to be decoded phonetically.