

The three-cueing model: Down for the count?

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The three-cueing system is well-known to most teachers. What is less well known is that it arose not as a result of advances in knowledge concerning reading development, but rather in response to an unfounded but passionately held belief. Despite its largely uncritical acceptance by many within the education field, it has never been shown to have utility, and in fact, it is predicated upon notions of reading development that have been demonstrated to be false. Thus, as a basis for decisions about reading instruction, it is likely to mislead teachers and hinder students' progress. In the recently released Primary National Strategy (2006a), the three cueing model (known in Great Britain as the *Searchlight* model) is finally and explicitly discredited. Instead, the Strategy has acknowledged the value of addressing decoding and comprehension separately in the initial stage of reading instruction.

“ ... attention should be focused on decoding words rather than the use of unreliable strategies such as looking at the illustrations, rereading the sentence, saying the first sound or guessing what might ‘fit’. Although these strategies might result in intelligent guesses, none of them is sufficiently reliable and they can hinder the acquisition and application of phonic knowledge and skills, prolonging the word recognition process and lessening children’s overall understanding. Children who routinely adopt alternative cues for reading unknown words, instead of learning to decode them, later find themselves stranded when texts become more demanding and meanings less predictable. The best route for children to become fluent and independent readers lies in securing phonics as the prime approach to decoding unfamiliar words (Primary National Strategy, 2006b, p.9).”

Ridding the system of this blight may not be as easy as the edict above implies. The three-cueing system is an established element in most preservice and inservice teacher training courses that include a literacy focus (Adams, 1998). It proffers an explanation (however misguided) of how skilled readers comprehend written language, and also provides a strong direction concerning the role of teachers in literacy education. It is one of those belief systems the origin of which is difficult to establish, and the wide-scale and uncritical acceptance of which is surprising to those anticipating an empirical foundation. There is a dearth of research support to justify a central role for the three-cueing system in determining what should be included in a reading program. In fact, in a despairing letter some years ago, 40 respected linguists (Eagle Forum, 1996) lamented that the underpinnings of the three-cueing system represented “ ... an erroneous view of how human language works, a view that runs counter to most of the major scientific results of more than 100 years of linguistics and psycholinguistics” (Eagle Forum, 1996, p.8).

A fuller explanation is presented later in the paper; however, the three-cueing system is predicated upon the notion that skilled reading is dependent upon the combined use of three information sources. Semantic cues enable prediction of upcoming words based upon the meaning-stream encountered already. Syntactic cues enable the reader to reduce the range of possibilities in identifying upcoming words because of knowledge of the constraints supplied by our grammatical system. The grapho-phonetic cues take as the source of information in aiding word identification, the alphabetic nature of our written language. The cues are in decreasing order of importance, and their use among skilled readers is considered to be automatic.

An emphasis on the three-cueing system is evident in these advisory booklets provided to parents from two Australian schools.

School 1: During reading. When your child gets stuck on a word, follow these 4 (sic) steps.

Ask your child to:

1. Guess what the word might be.
2. Look at the picture to help guess what the word might be.
3. Go back to the start of the sentence and re-read it, adding the word you think might make sense.
4. Read to the end of the sentence and check that the word "makes sense".
5. If the word makes sense then check if it "looks right" (could it be that word?).

If the word is still incorrect, tell your child the word and allow him/her to continue reading. It is inappropriate for your child to be directed to "sound out" words, using individual letter sounds, as many words cannot be identified in this manner.

School 2: Teaching your child reading strategies: If your child has difficulty with a word:

- Ask your child to look for clues in the pictures
- Ask your child to read on or reread the passage and try to fit in a word that makes sense.
- Ask your child to look at the first letter to help guess what the word might be.

Perhaps the three-cueing system is ubiquitous in education training courses, and popular among teachers because it appears to reconcile the long-standing conflict between a phonics-emphasis curriculum and a literature-based curriculum. The apparent reasonableness of the three-cueing conception of skilled reading may reduce the tension – a spirit of compromise prevailing over a determination to establish the reality. When there are two apparently polar alternatives, it is tempting to seek the comfort of the middle ground. This is surely why the term *balanced approach* was so rapidly promulgated and accepted. Education has long been renowned for its lack of empirical foundation (Carnine, 1995; Hempenstall, 1996; Marshall, 1993; Stone, 1996). Maggs and White (1982) wrote despairingly, "Few professionals are more steeped in mythology and less open to empirical findings than are teachers" (p. 131).

Is it important that, in seeking to achieve a balanced approach to literacy instruction, educators have assigned a relatively low priority to the results of research? It might not be problematic if there were numerous equally effective means of making sense of print. There would be no cause for concern if there weren't essential elements that every reader must master. Many teachers express the view that differences among the learning styles of children make any single approach to literacy instruction untenable. Yet, it is now acknowledged that tests have not been able to determine learning styles validly and reliably, and even if it were possible, the demands of the task of reading require certain skills regardless of the natural propensity of a student to acquire them (Graham & Kershner, 1996; Knight, 1997; McKenna, 1990; Snider, 1992; Stahl & Kuhn, 1995; Willingham, 2005).

Further, teachers observe that, for some children, the early stages of reading have been mastered prior to school entry, and for others, development is rapid and stress free, requiring only minimal assistance. This observation actually concerns variations in the degree of literacy preparedness of students, yet a frequent conclusion is that students therefore require different instructional emphases rather than simply different instructional entry points. A further erroneous assumption may be that there are many qualitatively different ways of skilfully extracting (or constructing) meaning from print. Perhaps, they reason, one student may benefit most by focussing on the meaning of print rather than its structure, and so benefit most when exhorted to employ contextual cues. One student may have a strong visual memory for words, whereas another appears more sensitive to the sounds in words, and yet another seems to respond to a focus on the tactile or kinaesthetic senses.

The belief such observations may engender is that attention to phonemic awareness and/or phonics with students is a forlorn attempt to shoehorn different learners into only one of numerous possible reading methods – indeed one that may not suit their personal (neurological?) style or preference. Perhaps this perception explains the ready acceptance of many different methods, including the three-cueing system – one that offers an apparent unification of diverse approaches.

Ultimately, however, what constitutes the effective teaching of reading is an empirical question, and the decision about instructional focus should depend not on belief, but upon knowledge of the processes underlying skilled reading, and the means by which skilled reading is most effectively pursued. In the USA, the national and state education bills informed by the report of the National Reading Panel (2000) have highlighted a momentum shift from reading viewed as a natural process, unique to each child, towards reading as a difficult skill that is developed more effectively under some educational conditions than others.

The ready acceptance of the three-cueing model should not be treated lightly because beliefs about the reading process determine what should and should not occur in the beginning reading classroom. The implications form the very core of literacy instruction, and if the conception of reading development is erroneous then the activities of teachers employing its recommendations may inadvertently subvert the reading progress of students, and in particular, of those students who do not readily progress without appropriate assistance.

In fact, the three-cueing system is a seriously flawed conception of the processes involved in skilled reading, and the practices flowing from its misconception may have contributed to the problems experienced by an unacceptably large number of students (Wren, 2001). Not only are the practices flowing from the system ineffective for promoting beginning reading, they actually deflect students away from the path to reading facility. Sadly, many parents do not discover until about Grade 4 that their children have been taught moribund reading strategies, and, to their dismay, that recovery is unlikely (Chall, Jacobs, & Baldwin, 1990; Lewis & Paik, 2001; Spear-Swerling & Sternberg, 1994).

In developing an understanding of the rise to popularity of the 3-cueing system it is helpful to consider the context in which it occurred. During the past two decades, an approach to education with strong philosophical underpinnings, whole language, became the major model for educational practice in several Western countries.

Although whole language has been less frequently employed as a descriptor in recent years, the *movement* that underpinned whole language (or any of its newer synonyms, such as balanced literacy, literature-based, process-oriented) remains active and vocal. The whole language movement itself has been refractory to detailed analysis, so is best examined through its underpinnings, its philosophical assumptions and its visible manifestations, that is, its instructional features.

Instructional roots

The whole language approach had its instructional roots in the meaning-emphasis, whole-word model of teaching reading. This emphasis on whole words was a comparatively recent shift; the phonic technique of teaching component skills, and then combining those skills had been the norm until the mid-Nineteenth Century (Adams, 1990). It followed a sequence of teaching upper-case and lower-case letter names, two-letter and three-letter combinations, mono-syllabic words, multi-syllabic words, phrases, sentences, and finally, stories. Phonics is an approach to teaching reading that aims to sensitise children to the relationships of the spelling patterns of a written language to the sound patterns of its corresponding oral language. It is not a single pathway, however, as decisions need to be made regarding the timing of its introduction, the method of delivery, whether explicitly or implicitly taught, whether correspondences are presented in isolation, or solely in the context of literature, how many correspondences, and which (if any) rules are appropriate.

In 1828, Samuel Worcester produced a primer that borrowed a European idea of teaching children to recognise whole words without sounding them out.

It is not very important, perhaps, that a child should know the letters before it (sic) begins to read. It may learn first to read words by seeing them, hearing them pronounced, and having their meanings illustrated; and afterward it may learn to analyse them or name the letters of which they are composed. (Crowder & Wagner, 1991, p. 204).

Support for this view came from James Cattell in 1885 in his assertion that whole word reading was more economical (Davis, 1988); and later, from the Gestaltists who considered that the overall shape of the word (rather than the summation of the sound-parts) should provide the pre-eminent clue for young readers.

An assumption behind this approach was that beginning readers should be taught to read in the way skilled readers were thought to do. Given the belief that skilled readers associated meaning directly onto the whole-word image, it followed that showing beginners how this was achieved would save time. The alternative view was that reading should be viewed as a developmental process in which the early stages of developing the alphabetic principle are necessary for later skilled-reading, even though those early skills may be rarely needed at the later stages. This alternative perspective fell from favour until its recent resurrection through the interest in phonological processing.

A further assumption of what became known as the whole-word approach was that the knowledge of letter-sounds would naturally follow once whole-word recognition was established (Smith, 1978). It was not until some time later that doubt began to be expressed about the effects on some children of this whole-word initial emphasis. Unfortunately for many at-risk children, the consequence of the primacy of the whole-word method is an inability to decode unfamiliar words (Tunmer & Hoover, 1993), a problem that becomes more pronounced as the student meets a dramatically accelerating number of new words during the late primary and into the secondary grades.

The whole-word model involved introducing words through their meaning as the words are presented in stories. Words are to be recognised by sight, using the cue of their shape and length. A secondary strategy relies on deducing meaning from other contextual clues, such as accompanying pictures or through guesses based upon the meaning derived from surrounding words (Chall, 1967). In a whole word approach, phonic strategies are considered potentially harmful, and to be employed as a last resort. Even then, they are intended to provide only partial cues, such as obtained by attention to a word's first or last letters. Systematic teaching of phonic strategies was antithetical to the wholistic nature of such meaning-oriented approaches. Because teaching should not take as the unit of instruction anything other than meaningful text, any phonic skills developed by students is likely to be self-induced and idiosyncratic.

Ideological roots

Goodman (1986) described whole language as an overarching philosophy rather than as a series of prescribed activities, and one not to be simply equated with an instructionally-based strategy such as the whole word approach. In his view, the teacher aims to provide a properly supportive, rather than directive, environment that encourages children to allow the natural development of literacy at their own developmentally appropriate pace.

There is a strong emphasis on principles, such as, the benefits of a natural learning environment (Goodman, 1986) and of exposure to a literate environment (Sykes, 1991). The proponents of the approach also insist that reading and writing are natural parts of the same language process that enable the development of speech. In this view, learning to read and write would be equally effortless and universal if only the reading task were made as natural and meaningful as was learning to talk. Goodman (1986) argued that it is the breaking down of what is naturally a wholistic process into subskills, to be learned and synthesized, that creates a disparity in

some children's ease of acquisition of speaking and of reading. Whole language offered solely a philosophical basis for judgement, rather than the clear instructional ramifications of the whole word method; however, both approaches are critical of the emphasis on the alphabetic principle inherent in phonics instruction.

Whole language and the three-cueing mechanisms

Whole language advocates have conceptualised reading development as the gradual integration of three-cueing mechanisms (semantic, syntactic, and graphophonic). The term *integration* is important because it is made clear that the three strategies are not intended to be employed in isolation, but so quickly that they appear simultaneous. In this view, skilled readers make continuous use of the cues as required. They are engaged in a continuous process of prediction and confirmation as they construct meaning from the text.

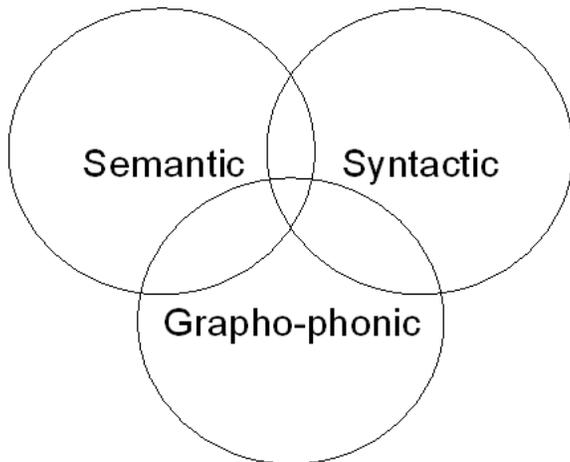
Semantic cues involve enlisting the meaning of what has just been read to assist with decoding words about to be read, that is, the next (unknown) word should make sense in the context of the reader's ongoing interpretation of the text meaning. For example, in the sentence *The rodeo rider leaped onto the back of his _____*, the reader's integrated three-cueing system enables him to produce a word that maintains the sense of the sentence. "I don't recognise this word, but what would make sense to me? In the context of the sentence and my experience with the world, it would make sense if it were *horse*."

Syntactic cues arise because of the logic of our system of sentence construction – words and their position in a sentence are constrained by the rules of grammar. Word order, endings, tense, intonation, and phrasing are each elements of syntax. Thus, the word chosen in the previous example must be a noun, it couldn't be a participle such as *horsing*. "So, the word I chose (*horse*) is appropriate in that it is syntactically acceptable." In order to show students how to make use of this cue, teachers are likely to encourage students to skip the word, and read on until a clue becomes available, derived from the structure of the rest of the sentence. This is usually called the read-ahead strategy.

Syntactic and semantic cues are broadly described as context cues, as they may be used to name a word without recourse to visual inspection. When students self-correct their reading errors based upon such cues, teachers are likely to be pleased, as it indicates to them the operation of contextual cues.

Graphophonic cues refer to the correspondence between graphemes (the symbols in print) and phonemes (the speech sounds they represent). In the three-cueing system, the graphophonic cues are employed as a backup element, to help confirm the choice of words. "Yes, the word I chose (*horse*) begins with an *h* so it meets the demands of graphophonic suitability."

According to the advocates of this interpretation of skilled reading, the process outlined occurs so rapidly as to be virtually instantaneous. That it is the integration of the three processes that produces meaning is indicated by the familiar overlapping circles of the diagram below. Comprehension is indicated by the area shared by the three intersecting circles.



This representation is similar to that shown in Pearson (1976).

The instructional implication of this assertion about skilled reading is that beginning readers, and those still struggling with the reading process, should consciously master the self-questioning routine in order to become adept at reading in this three-cueing manner. For example, teachers may cover up key words in sentences, prompting students to practise making use of contextual clues to predict the hidden words, and they may encourage students to seek meaning from an accompanying picture and produce an appropriate word. Students may have the three-cueing sequence modelled to them whenever they request teacher assistance with an unknown word. It is also likely that they will be discouraged from employing sounding out as an initial strategy for determining the pronunciation of an unknown word. Apart from those teacher decisions, there is little else in the way of clearly delineated advice to teachers to ensure such a seemingly complex set of orchestrated processes does occur.

In the three-cueing approach, the three systems are not considered to be equally useful; the graphophonic system labelled the least helpful - even potentially disruptive when relied upon by readers (Weaver, 1988). Reading should entail as little emphasis as possible on each word's letter construction. Rather, skilled reading is perceived as a process of continuous prediction of target-words, this prediction based primarily upon semantic and syntactic cues, followed by confirmation that the chosen word is consistent with the context (and possibly the target word's initial letters).

"In turn (the reader's) sense of syntactic structure and meaning makes it possible to predict the graphic input so he is largely selective, sampling the print to confirm his prediction" (Goodman, 1973, p. 9).

However, if a struggling reader can't pronounce most of the words on a page, there is no useful context to interpret. Yet, the so-called "integrated" use of the system actually involves employing the cues sequentially (even if rapidly), with the graphophonic cues assigned last place in the sequence. What advice should a teacher give to a student when word identification problems arise prior to any context being established? Even if the graphophonic system is recommended as a last resort, how will the students know how to use it productively? Further, will they be motivated to do so, if taught that it is largely unhelpful? There is a body of phonic knowledge to be mastered if skilled reading is to eventuate. The effort required by most students to attain this level of alphabetic understanding is substantial. If teachers are equivocal about its value, why would students go through the rigours of acquiring this knowledge?

Students are disadvantaged because proponents of whole language have invariably been uncomfortable with instructional attention being devoted to within-word structure. The responses of whole language protagonists have taken several forms.

One approach has been outright rejection of word structure:

“Focus on the subsystems of language results in useless, time-wasting and confusing instruction” (King & Goodman, 1990, p. 223).

“The rules of phonics are too complex, ... and too unreliable ... to be useful” (Smith, 1992, p. 214).

Another approach involves submerging phonics

"Phonic information ... is most powerfully learned through the process of writing" (Badger, 1984, p.19)

A further position is that phonics knowledge is useful, but requires no instruction.

"Children can develop and use an intuitive knowledge of letter-sound correspondences [without] any phonics instruction [or] without deliberate instruction from adults" (Weaver, 1980, p. 86).

"Children must develop reading strategies by and for themselves" (Weaver, 1988, p. 178).

Routman reverses the usual sequence, asserting that phonics information only becomes useful to an individual after learning to read. In other words, reading facility precedes the capacity to learn phonic strategies (Routman & Butler, 1988).

Protagonists argue that phonics approaches emphasise accuracy to the detriment of meaning.

“Accuracy, correctly naming or identifying each word or word part in a graphic sequence, is not necessary for effective reading since the reader can get the meaning without accurate word identification. ... Furthermore, readers who strive for accuracy are likely to be inefficient” (Goodman, 1974, p.826).

Goodman (1976) and others argued that phonic skills should only develop within the context of three-cueing systems used to extract meaning from print. In this view, the graphophonic system is considered a fall-back position to be used when semantic and syntactic systems fail (Weaver, 1988).

“The first alternative and preference is - to skip over the puzzling word. The second alternative is to guess what the unknown word might be. And the final and least preferred alternative is to sound the word out. Phonics, in other words, comes last” (Smith, 1999, p. 153).

A unfortunately common approach involves *ad hominem* attacks on protagonists of systematic phonics instruction - accusing them of ulterior (usually, political) motives:

"At a meeting of the International Reading Association four years ago Ken Goodman attacked Marilyn Adams [a phonics advocate] as a 'vampire' who threatened the literacy of America's youth" (Levine, 1994, p. 42).

“It is important not to confuse the tactics of the far right with its goals. One of its tactics is to smear whole language. ... The far right's love affair with phonics is a tactic, not a goal. They tout the benefits of phonics, but what they are really pushing is control of teachers, texts, and readers in a universe of moral absolutes” (Edelsky, 1998, p. 39).

In contrast to consensus among empirical researchers about the importance of teaching phonics explicitly (Lyon, 1999; National Literacy Strategy, 1998; National Reading Panel, 2000), some whole language advocates have argued that phonics is relevant, but can only be explored in the context of authentic literature. The concern about this implicit model relates to the risk it creates for students unable to benefit from occasional exposure to important intra-word features.

What is the evidence supportive of the view of skilled reading inherent in the three-cueing system?

Goodman (1976) described skilled reading as a "psycholinguistic guessing game" (p.259). He sees reading as a sophisticated guessing game driven largely by the reader's linguistic knowledge, and as little as possible by the print. Smith (1975) expressed this view succinctly. "The art of becoming a fluent reader lies in learning to rely less and less on information from the eyes" (p. 50).

The rationale for asserting that contextual cues should have primacy in skilled reading was based on a flawed study by Goodman (1965). Goodman found a 60-80% improvement in reading accuracy when children read words in the context of a story rather than in a list format. He argued on the basis of this study that the contextual cues provided marked assistance in word identification. There has always been acceptance that context aids readers' comprehension, but despite contention in the literature over Goodman's finding concerning contextual facilitation of word recognition, his study is still regularly cited as grounds for emphasizing contextual strategies in the three-cueing system.

The study was flawed in two ways. The design was not counterbalanced to preclude practice effects. That is, a list of words taken from a story was read, and then the story itself was read. Secondly, the study ignored individual differences in reading ability, so it was not possible in the Goodman study to determine whether good, or poor, readers (or both categories) derived benefit from context. Replication studies by a number of researchers including Nicholson (1985, 1991), Nicholson, Lillas and Rzoska (1988), Nicholson, Bailey and McArthur (1991) have discredited Goodman's argument, and found that good readers are less reliant on context clues than poor readers. A later study by Alexander (1998) produced similar outcomes. Results consistent with those above were reported in studies by Goldsmith-Phillips (1989), Leu, Degroff, and Simons, (1986), and Yoon and Goetz (1994), cited in Alexander (1998).

Poor readers attempt to use context only because they lack the decoding skills of the good readers. As a consequence of these studies, Nicholson (1991) argued that encouraging reliance on contextual cues only confuses children, directing their attention away from the most salient focus (word structure), and helping entrench an unproductive approach to decoding unknown words.

A further problem involves the accuracy of contextual guesses. In a study by Gough, Alford and Holley-Wilcox (1981), well educated, skilled readers, when given adequate time, could guess correctly only one word in four through contextual cues. Gough (1993) pointed out that even this low figure was reached only when the prose was loaded with fairly predictable words. Interestingly, although good readers are more sensitive to context cues to elicit the meaning of unfamiliar words, they do not need to use context to decode unknown words (Tunmer & Hoover, 1993). They soon learn that word structure more reliably supplies the word's pronunciation than does context; unfortunately, it is poor readers who are more likely to invest attention on such context guesswork (Nicholson, 1991). The error made by whole language theorists is to confuse the desired outcome of reading instruction - a capacity to grasp the meaning of a text - with the means of achieving that end. In order to comprehend meaning, the student must first learn to understand the code (Foorman, 1995).

An additional problem was highlighted by Schatz and Baldwin (1986). They pointed out that low frequency words and information-loaded words are relatively unpredictable in prose. That is, the words least likely to be recognised are those that contain most of the information available in the sentence. As students progress through the school years, texts provide less and less redundancy from which to derive contextual cues, and the strategy becomes even more moribund.

It had also been argued (Cambourne, 1979) that the speed of skilled reading could not be accounted for if the reader looks at every word. In his view, the continuous flow of meaning should be faster than word-by-word decoding. Cambourne also asserted that good readers used contextual cues to predict words initially, and then

confirm the word's identity using as few visual features as possible.

These are empirical questions that have been answered through the use of eye movement studies. It has been demonstrated that the fluent reader recognises most words in a few tenths of a second (Stanovich, 1980), far faster than complex syntactic and semantic analyses can be performed. Eye movement studies have not supported the skipping/skimming hypothesis.

These studies (see reviews in Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001, 2002; Rayner & Pollatsek, 1989; Stanovich, 1986) using sophisticated video cameras and computers indicate that skilled readers do process all the print - they do not skip words, nor do they seek only some features of words.

Thus, the techniques of contextual prediction that are emphasized in whole language classrooms, are based upon an unsustained hypothesis about the techniques representative of skilled reading. It is unsurprising that Rayner & Pollatsek (1989), perhaps the most notable of the researchers using eye movement techniques, consider that the major failing of whole language is its lack of recognition that graphophonic cues are "more central or important to the process of learning to read than are the others" (p. 351).

Pressley (1998) summarized this research "The scientific evidence is simply overwhelming that letter-sound cues are more important in recognizing words than either semantic or syntactic cues" (p. 16).

Bruck (1988) reviewed research indicating that rapid, context-free automatic decoding characterizes skilled reading. She too had noted that the word recognition of skilled readers provided them with the text meaning even before contextual information could be accessed. It is prediction rather than scanning words that is too slow and error-filled to account for skilful reading. As Wren (2001) notes, it is only under conditions of insufficient graphophonic information that contextual strategies are employed for word identification.

Rayner and Pollatsek (1989) observed that it is only beginning and poor readers who use partial visual cues and predict words. This view was echoed by Stanovich (1986) and by Solman and Stanovich (1992) providing a strong list of supportive studies. This is also the position recently endorsed in Great Britain in the National Literacy Strategy (National Literacy Strategy, 1998), in the National Reading Panel (2000) findings, and in the extensive, large scale, longitudinal research emanating from the National Institute of Child Health & Human Development.

"NICHD and substantial non-NICHD research does not support the claim that the use of context is a proxy for applying decoding strategies to unknown or unfamiliar words. ... The strategy of choice among well developing good readers is to decode letters to sound in an increasingly complete and accurate manner, which is dependent upon robust development of phonemic and phonics skills" (Lyon, 1999, concluding section, ¶ 5).

Finally, psychometric studies have indicated that measures of alphabetic coding ability rather than of semantic and syntactic ability are the strong predictors of word identification and comprehension facility (Vellutino, 1991). Whole language theorists had assumed the converse to be true. The finding regarding comprehension is particularly damning to the argument for psycholinguistic guessing, with its unflinching focus on meaning.

"Two inescapable conclusions emerge: (a) Mastering the alphabetic principle (that written symbols are associated with phonemes) is essential to becoming proficient in the skill of reading, and (b) methods that teach this principle are more effective than those that do not (especially for children who are at risk in some way for having difficulty learning to read)" (Rayner et al., 2001, p.1).

Thus the presumption that skilled readers employ contextual cues as the major strategy in *decoding* is not supported by evidence. There is, however, no dispute about the value of contextual cues in assisting readers

gain *meaning* from text (Stanovich, 1980). The comprehension of a phrase, clause, sentence or passage is dependent on attention to its construction (syntax) and also to the meaning of the text surrounding it (semantics). The critical issue here is the erroneous assertion that the use of contextual strategies is beneficial in the *identification* of words, and that skilled readers make use of these strategies routinely.

Does it matter how the process is conceptualised?

Yes, it is crucial. For one reason, a test developed expressly to assess students' usage of the three-cueing system is frequently employed to ensure students are in fact using this flawed system. The significance of any reading errors is thus superimposed on the reading behaviour through the adoption of the three-cueing system conception of reading. "... the model of reading makes the understanding of miscues possible" (Brown, Goodman, & Marek, 1996, p. vii).

Miscue analysis is a very popular approach to assessing reading progress by attempting to uncover the strategies that children use in their reading. Goodman and his colleagues in the 1960's were interested in the processes occurring during reading, and believed that miscues (any departure from the text by the reader) could provide a picture of the underlying cognitive processes (Goodman, 1969). He used the term miscue, rather than error, reflecting the view that a departure from the text is not necessarily erroneous (Goodman, 1979). Readers' miscues include substitutions of the written word with another, additions, omissions, and alterations to the word sequence.

Consistent with this view of skilled reading, the Reading Miscue Inventory (RMI) and its update are concerned largely with errors that cause a loss of meaning - the number of errors being less important than their immediate impact on comprehension (Weaver, 1988). There are differences in the acceptability of various miscues. Good miscues maintain meaning and are viewed as an indication that the student is using meaning to drive the reading process, and hence, is on the "correct" path. Bad miscues are those that alter meaning. Whether the word the student reads corresponds to the written word may not be important in this conception (Goodman, 1974).

A teacher using the RMI will examine the nature of the errors the student has made in chosen passages. Consider this text *The man rode his horse to town*, and a reader's response, substituting *pony* for *horse*:

Child # 1: The man rode his pony to town.

Asking the specified nine questions reveals that the miscue (compared with the target word) has grammatical similarity, syntactic acceptability, semantic acceptability, does not change meaning, and the miscue does not involve dialect variation, an intonation shift, graphic similarity, sound similarity, or self-correction. Such an error is considered an acceptable miscue. Reading *pony* for *horse* is indicative of the student using contextual cues appropriately and a signal for satisfaction about reading progress. The teacher would be content with this error, as meaning has been more or less preserved.

"Often substitutions of words like *a* for *the*, *by* for *at*, *in* for *into*, do not cause a change in meaning. ... substitutions like *daddy* for *father*, *James* for *Jimmy* ... are generally produced by proficient readers and are not reading problems" (Goodman & Burke, 1972, pp. 101-102).

According to the whole language conception of skilled reading, students must make many miscues during the progressive integration of the three-cueing systems in order for reading to develop. It is argued that these errors are not necessarily a cause for intervention but a positive sign of a reader prepared to take risks. Teachers should expect and even be pleased with meaning preserving errors. Additionally, they are exhorted to avoid corrective feedback regarding errors as it is risky, likely to jeopardise the student's willingness for risk-taking.

"... if these resulting miscues preserve the essential meaning of the text, or if they fail to fit with the following context but are subsequently corrected by the reader, then the teacher has little or no reason for concern" (Weaver, 1988, p. 325).

Suppose another student reads *house* for *horse*:

Child #2: *The man rode his house to town.*

Asking the same nine questions reveals that the miscue (compared with the target word) has graphic similarity, some degree of sound similarity, grammatical similarity, syntactic acceptability, and the miscue does not involve dialect variation, an intonation shift. Further, it does not include self-correction, is not a semantically acceptable change, and the miscue creates meaning change. This response is considered an unacceptable miscue because it changes the meaning.

"Proficient readers resort to an intensive graphophonic analysis of a word only when the use of the syntactic and semantic systems does not yield enough information to support selective use of the graphophonic system" (Goodman, Watson, & Burke, 1987, p.26).

Despite the closer graphemic similarity of the response *house* to the target word, children who make errors based on graphemic similarity, such as *house* for *horse*, are considered problematic and over-reliant on phonic cues. Whole language theorists argue that good readers' miscues display less graphophonemic similarity to target words than do those of poor readers (Weaver, 1988), and readers-in-training should do likewise.

Thus, the remedy the teacher chooses for Child #2 is to encourage increased reliance on context and less attention to letter patterns. However, according to the research-based consensus, this directive is more likely to result in poorer reading than in better reading. Adams (1991) argued that to improve this child's reading, the teacher should provide instruction that evokes close inspection of the letters and their position in the word, the opposite of that recommended in the RMI. Importantly, Adams found that good readers' miscues displayed more graphophonemic similarity to target words than did those of struggling readers.

In fact, most nascent readers' miscues shift over time, from early errors based upon contextual similarity to those based upon graphemic similarity; and this shift is now recognised as functional and a characteristic of progress. The student's dawning understanding of the pre-eminence of a word's graphemic structure encourages close visual inspection of words, a strategy that accelerates the progressive internalisation of unfamiliar spelling patterns, that is, it leads ultimately to whole-word recognition. That some teachers may unwittingly subvert this process, with well-meaning but unhelpful advice to beginning or struggling readers, is an unfortunate outcome.

"Scaffolding errors – when an error shares some or most of the sounds of the target word (e.g., 'bark' misread as 'bank') is a strong predictor of reading success. Errors that retain meaning but not initial and final phonemes ("people" for "crowd") were not correlated with accurate word reading ability" (Savage, Stuart, & Hill, 2001, p.11).

Thus, according to current knowledge, the *house* response is a preferable error to the *pony* substitution. It may be a sign that the student is in the process of acquiring the alphabetic principle; however, corrective feedback should be provided, as *house* is an erroneous response. Through the error correction, the student's attention is directed toward the letters in the written word and the sound usually made by the /or/ combination. The response recommended to teachers through the RMI, that of directing the student's attention away from the letters in the word towards context cues, provides an alarmingly unstable and counter-productive rule for students.

Child #1 is arguably in greater need of instruction that directs his attention to the letters in the words. Child #1 might equally have substituted *bicycle* for *horse*. The substitution makes sense but is far from that which the author intended. The child whose primary decoding strategy is driven by semantic and syntactic similarity may be unaware that *bicycle* bears no graphemic similarity to *horse*. The instructional message to the student is that, despite the student's errors being directly attributable to the inappropriate method of guessing, the strategy is nevertheless the correct one. The student is thereby encouraged to continue using a strategy that is unhelpful, and is dissuaded from attending to the major cue that would improve his reading - the word's structure. According to current evidence, regardless of the type of miscue, students who make errors need to focus on the letters in the word to improve their decoding.

The RMI also encourages other counterproductive instructional strategies.

Within the Reading Miscue Inventory, a student's self-correction of errors is considered significant, and they are recorded for analysis. Self-corrections are errors that are corrected without another's intervention, usually because the word uttered does not fit in the context of the sentence. Within the whole language framework, self-corrections are a clear and pleasing sign that meaning and syntactic cues are being integrated into the reader's strategies. Clay (1969) asserted that good readers self-corrected errors at a higher rate than did poor readers. She considered high rates were indicative of good text-cue integration, which in turn was a measure of reading progress.

This view of the significance of self-correction was questioned by Share (1990), and Thompson (1981, cited in Share, 1990). They found that self-correction rates had been confounded with text difficulty. When text difficulty was controlled in reading level-matched designs, the rates of self-correction became similar among good and poor readers. That is, when text is made difficult for any readers, they are more likely to make errors and thereby increase their rate of self-correction. So, an increased rate of self-correction is better interpreted as an indicator of excessive text difficulty rather than as reflective of reading progress. This interpretation based on difficulty levels also raises concerns about unreliability in the assessment of self-correction rates. The conclusion that there is no direct support for self-correction as a marker or determinant of reading progress makes the activity of recording such ratings for students of questionable value.

The RMI was designed to provide a "window on the reading process" (Goodman, 1973, p. 5). However, the analogy with a window is a misleading one as it implies a direct and transparent medium. The picture of reading obtained through the RMI involves an interpretation of that which is viewed through this window. What is actually displayed by a student is overt behaviour (spoken or written words) - the subsequent analysis of miscues involves making inferences about unobservable processes based upon assumptions about the reading process. With this instrument, the picture is coloured by a discredited conception of reading. Additionally, the instrument has other weaknesses described by Hempenstall (1999).

The Reading Miscue Inventory has had considerable influence in instructional texts and in classrooms (Allington, 1984), and remains influential among Whole Language theorists and teachers (Weaver, 1988). A revised version - RMI: Alternative Procedures (Goodman, Watson, & Burke, 1987) offers four analysis options of varying complexity for classroom use. The rationale is unchanged " ... it is best to avoid the common sense notion that what the reader was supposed to have read was printed in the text" (Goodman et al., 1987, p.60), and the Alternative Procedures are subject to the same criticisms as earlier versions. Although the RMI has been a very popular test, many teachers (for example, in Reading Recovery) have been trained to use an informal procedure of maintaining "running records" (Clay, 1985) with their students, a procedure that provides similar information on types of errors and self-correction rates, and that is based on a similarly flawed conception of reading.

The three-cueing system and its associated assessment tool, the RMI, are not beneficial to the understanding of the important elements in reading development, and for teachers, provide unsound directions to guide instruction. The approach is responsible for many children being stranded without adequate tools to meet the

inescapably and increasingly prevalent literacy demands of education, the workplace, and the wider community.

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