CLAIM 5

The Three-Cueing System (Orthography, Semantics, and Syntax) has been soundly discredited.

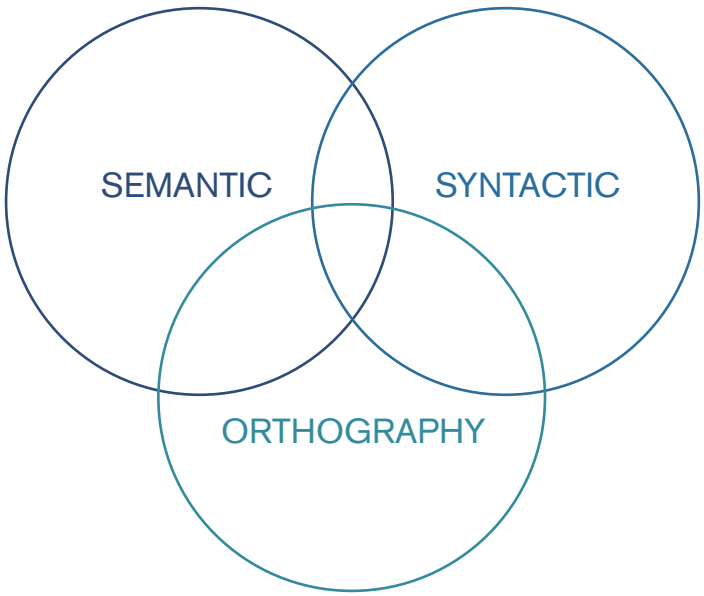
The Evidence Marshalled in Support of the Claim

Defining the three-cueing system is the first step in explaining the resistance to it by both scholars and advocates within the SoR community. Easier said than done.

Three-cueing is often depicted as a Venn diagram (Figure 3) of three sources of knowledge (cues). According to this model, as readers unlock word pronunciations and meanings on the way to comprehension, they consult: 1) Orthography (letter to sound patterns); 2) Syntax (sentence structure and morphological knowledge); and 3) Semantics (word meanings and relationships among words).

Figure 3

The Three-Cueing System



In tandem with the shift to practices aligned with the SVR, the discrediting of the cueing system became commonplace. In the U.K., advocacy for a model of learning to read that focused upon the enlistment of the cueing system (referred to as the Searchlights model) was displaced as teachers were directed to focus on decoding alone. Teachers were directed as follows:

> … 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, 2006, p. 9)

Indeed, the use of cueing systems (e.g., Goodman, 1965; 1967; 1969) has become one of the most contentious issues in discussions of the SoR. SoR advocates contend that the three-cueing system is predicated on the mistaken belief that as readers develop expertise, they become increasingly nimble and skilled at orchestrating their use of all three cues. Drawing on Keith Stanovich's (1980; 1984) interactive compensatory model and Charles Perfetti's (1980) verbal efficiency model, these de facto critics of three-cueing models (e.g., Hanford, 2018; 2019) define learning to read instead as, first and foremost, a form of word mastery. As beginning readers gain experience, they compile a store of words (presumably those already in their oral language repertoire) that they immediately recognize en route to reading for meaning (as we describe in Claim 4 regarding orthographic mapping).

Critics cite studies comparing good and poor readers (e.g., Schwartz & Stanovich, 1981; Stanovich & West, 1979), which suggest that apart from their engagement with predictable texts (e.g., Martin and Carle's 1983 book, *Brown Bear, Brown Bear, What Do You See?*), struggling readers have a

tendency to over-rely on context clues and pictures to develop hypotheses (the word "guess" is often used by the critics) regarding the pronunciation and meaning of words. Consequently, poor readers fail to develop the decoding skills necessary for facile word identification, and their accuracy and fluency appear to flounder. Good readers, on the other hand, are able to successfully enlist phonemic awareness and letter-sound correspondences to decode, and then understand, words. These differences between good and poor are taken as evidence that accurate and automatic word recognition is key to developing fluent reading and reading for meaning. This view lends credence to the argument that phonics is the more expeditious approach to beginning reading expertise—and that approaches enlisting multiple cueing systems are flawed, misguided, and perhaps even harmful to young readers (Hanford, 2018; 2019; Moats, 2000).

Criticisms of the three-cueing system are based on a combination of anecdotal evidence and opinion (Seidenburg, 2017; Moats, 2000), including extrapolations from static comparisons of the strategies of good and poor readers. They do not examine specific interventions involving the three-cueing system, such as the Interactive Strategies Approach (Vellutino & Scanlon, 2002; Scanlon et al., 2024), or the work of Marie Clay (1993; 1998) on Reading Recovery. For example, Marilyn Adams (1998) described the limitations of the three-cueing system after conducting occasional conversations with teachers and surmising their lack of clarity on how to guide students in the use of different cues. Mark Seidenberg rationalized an exclusive focus upon phonics skills in order to simplify what is taught and what students are expected to learn. He postulated that, as a matter of expediency (at least partially), restricting "... the range of alternatives to one that works may be more effective than offering multiple cues (Seidenberg, 2017, p. 303).

In fact, Seidenberg (2017; 2023b) argues that early advocates for cueing systems, such as Kenneth Goodman, have the roles for orthographic and contextual processing backwards; that is, word recognition comes first, followed by other contextual factors. Disagreeing with Goodman's (1967) premise that reading is "a psycholinguistic guessing game," Seidenberg dismisses approaches by other literacy educators that might provide, either

directly or indirectly, evidence for the use of cueing systems (beyond letter-sound correspondences). Yet he also takes issue with the Simple View of Reading (SVR) and Scarborough's Reading Rope (RR). Recognizing the inadequacies of those models as well, Seidenburg (2023b) in a recent blog post calls for a new approach:

> Classic ideas such as the SVR and the RR are fine places for the "science of reading" to start and poor places to stop. If you don't know about this work it's new to you. If you do know about it, you'll respect the fact that the studies don't address basic questions about instruction or learning, and thus are consistent with many different approaches, including poor ones. I encourage people to embrace this work for what it offers—some important general insights about reading—and move on.
>
> Rather than components of reading such as print and language we need an account of what, when, and how. We need a developmental perspective that considers the relationships between different types of knowledge, how the information is learned, and how learning changes as knowledge grows. (paras. 30-31)

Our Reading of the Evidence and the Claim

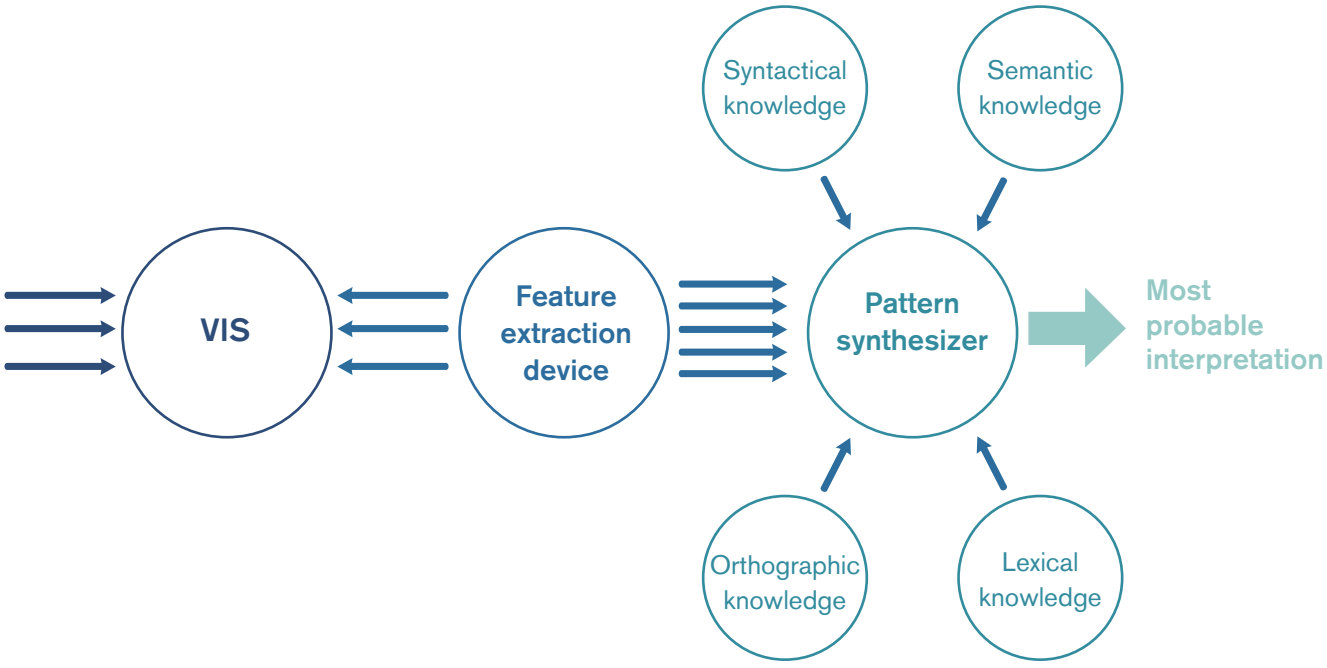
The only way we can make sense of the arguments marshalled against the three-cueing system is to infer that the opponents object to its use in pedagogy rather than in reading theory. Many of the most vocal critics of the three-cueing system either espouse or support models of the expert reading process that posit an important role for all three of these information sources. They describe how readers recognize and understand words and connected discourse through the combined processing mechanisms for orthographic information, semantic information, and syntactic information (as well as other sources, like letter features).

David Rumelhart's (1977) popular Interactive Model of Reading, from which Keith Stanovich (1980; 1984) devised his interactive-compensatory model, is most transparent on the importance of all three processors of information (see Figure 4). According to Rumelhart, each processor works independently to send its working hypotheses about the word the reader is trying to identify to an executive "Pattern Synthesizer." The Pattern

Synthesizer, using all the information available, then provisionally commits to a given word. The moment more information becomes available, the reader takes that into account to confirm or alter their working hypothesis. We liken this model to a committee meeting of department heads: The committee chair (Pattern Synthesizer) asks for hypotheses about what word is represented by the graphemic information in the Visual Information Store (VIS). Each committee member (Knowledge Source) filters the information under scrutiny through their knowledge base to develop the most plausible hypothesis about the word's identity. The Pattern Synthesizer compiles all these hypotheses (dare we say educated guesses?) to arrive at a consensus and provisional identification of the word. As each Knowledge Source gains access to the hypotheses of the other sources, takes in more graphemic information in the VIS, and refines their hypothesis about the word's identity, they allow the Pattern Synthesizer to come up with new, and presumably more informed, consensus hypothesis. This cycle continues until the Pattern Synthesizer is ready for input from a new graphemic string (e.g., a word), and the process repeats itself.

Figure 4

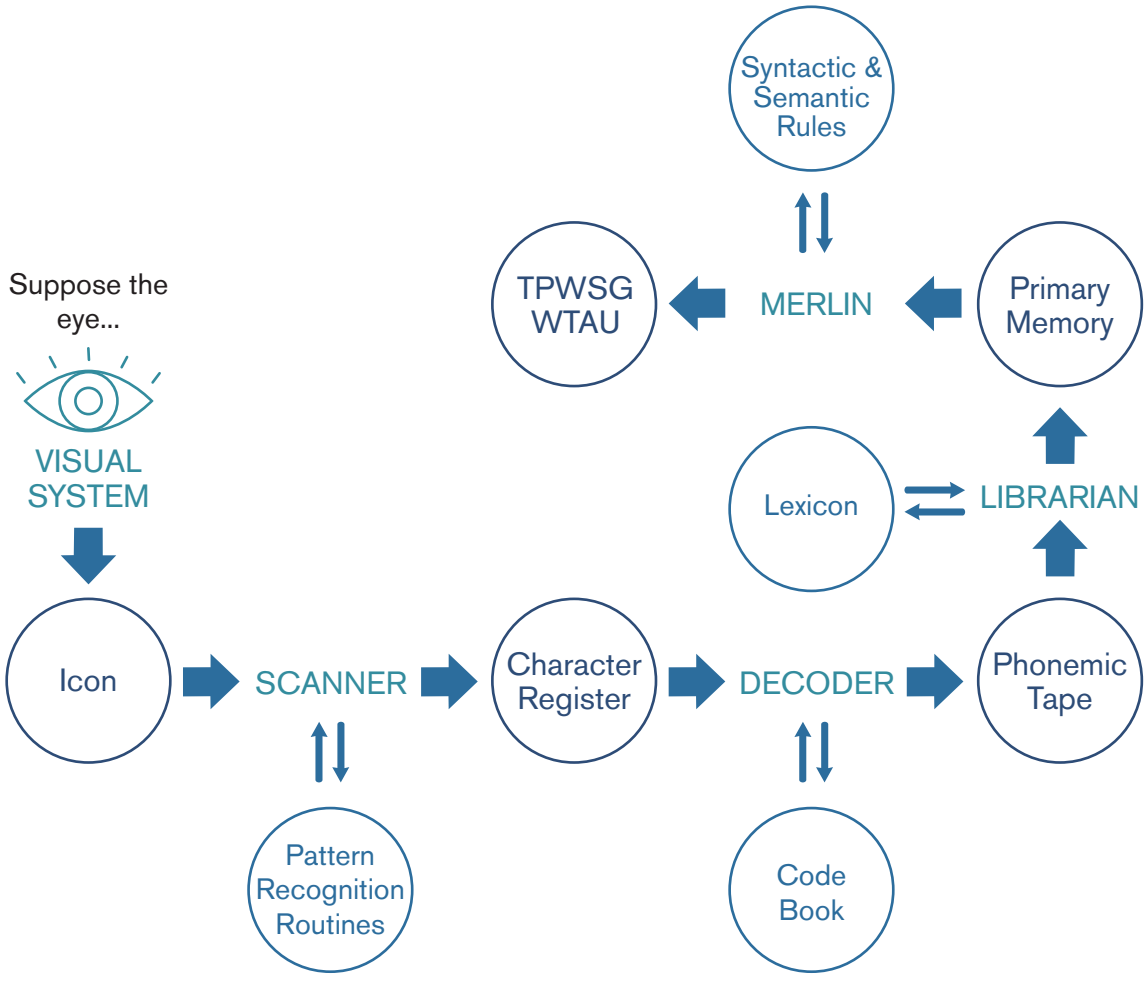
Rendition of Rumelhart's (1977) Interactive Model



Gough's (1972) "one second of reading" model (see Figure 5), which undergirds his Simple View of Reading (Gough & Tunmer, 1986), similarly features processors for various kinds of information: A pattern recognizer and a character register for orthographic information; a decoder to get from orthographic to phonologic inputs; a librarian to access word meanings; and an executive, dubbed Merlin, to consult with syntactic and semantic rules, and put it all together.

Figure 5

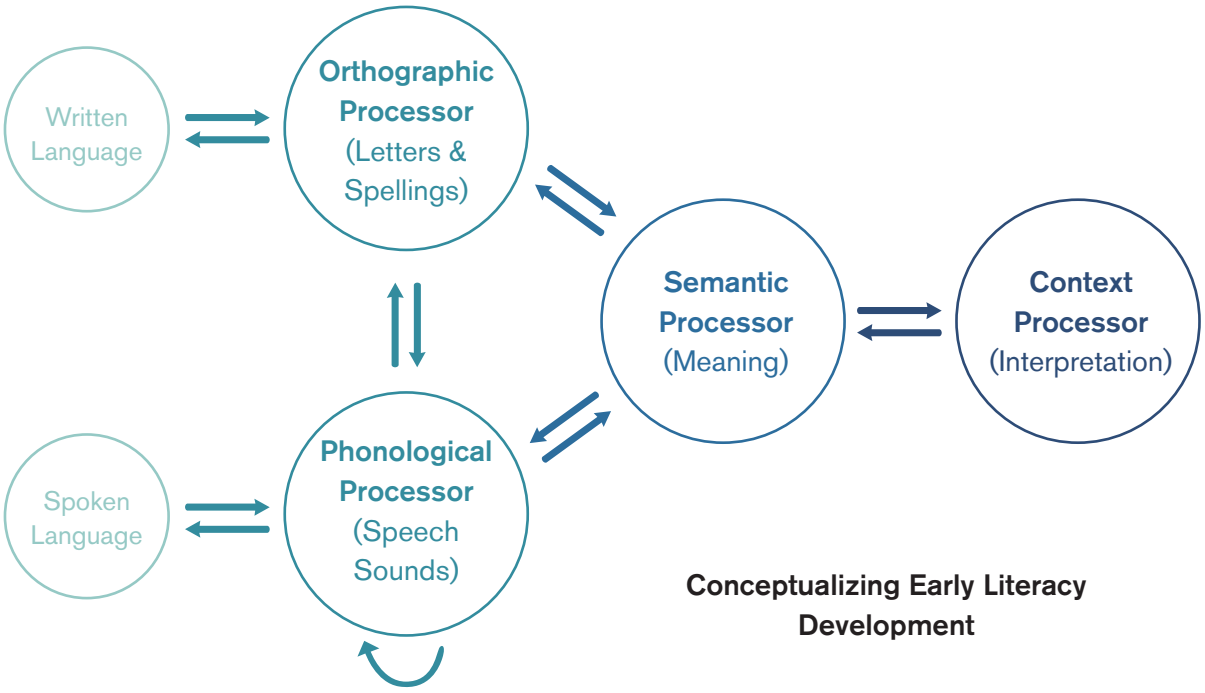
Rendition of Gough's (1972) One Second of Reading Model



Even the strongest critic of the three-cueing system, Marilyn Adams (1990), leaned on the then-emerging parallel distributed processing model of reading (e.g., Rumelhart & McClelland, 1986; see Figure 6). Like the Rumelhart and Gough models, the parallel distributed processing model posits that processors for orthographic, phonological, and semantic information are deployed en route to identifying and understanding both words and connected discourse.

Figure 6

Rendition of Rumelhart & McClelland's (1986) Parallel Distributed Processing Model of Reading



Given the widespread support of such models, objections to the three-cueing system must not be directed at theories of expert word and discourse comprehension. This leaves us to conclude that it is the use of three-cueing systems to guide instruction that many find objectionable. Indeed,

several scholars with recorded opposition to the three-cueing system espouse eclectic orientations to theories of reading—supporting notions of the orchestrated interdependency of processes, and the simultaneous engagement of phonics with cueing systems related meaning making. Perfetti, for example, emphasizes the synergies between comprehension and meaning making in reading development from an early age. In an interview with David Boulton for the *Children of the Code* project website (Boulton & Perfetti, 2005), Perfetti suggests that there is a reciprocity between comprehension and the development of word identification, noting how "components can develop in tandem in ways that mutually reinforce each other" ("Reciprocal Relationship"). He goes on to call for an approach to reading that recognizes how "all parts of the system…. mutually support and strengthen each other."

Likewise, in her landmark book *Beginning to Read: Thinking and Learning About Print*, Adams (1990) discusses at length the importance of simultaneously engaging the cueing systems, thereby coupling phonics and with meaning making skills. As she states:

> In both fluent reading and its acquisition, the reader's knowledge must be aroused interactively and in parallel. Neither understanding nor learning can proceed hierarchically from the bottom up. Phonological awareness, letter recognition facility, familiarity with spelling patterns, spelling-sound relations, and individual words must be developed in concert with real reading and real writing and with deliberate reflection on the forms, functions, and meanings of texts…All of its component knowledge and skills must work together within a single and interdependent system. And, it is in that way that they must be acquired as well: It is not just eclecticism that makes a program of reading instruction effective; it is the way in which its pieces are fitted together to complement and support one another. (pp. 422-423)

Adams also supports, rather than criticizes, the contributions of Reading Recovery as developed by Marie Clay (1993). Despite some opposition to Reading Recovery and Clay's work (Chapman & Tumner, 2011; 2015; Nicholson, 2011; Reynolds & Whedall, 2007), several scholars have pointed to its effectiveness in balancing the various interdependent elements, including foundational skills, needed in learning to read (see Schwartz, 2005; 2015: Schwartz et al., 2009). As Robert Schwartz (2015) noted:

> Clay's (2001) theory incorporates a more-complex view of early literacy learning that incorporates direct phonics and phonemic awareness instruction and links that knowledge to monitor word recognition decisions while reading (Doyle, 2013; McGee, Kim, Nelson, & Fried, 2015; Schwartz, 2015; Schwartz & Galllant, 2011). This emphasis on monitoring during the reading of connected text helps many struggling beginners to construct the elaborate set of orthographic knowledge that Tunmer and Nicholson (2011) call the cipher. (p. 5)

In her approach to Reading Recovery, Clay (1993, 1998) suggested teachers provide readers with focused, strategic ways of enlisting phonics and the other cueing systems as they develop and monitor their reading across various texts (e.g., word analysis and sound blending activities; see Clay, 1993; 1998). Clay's notion of the self-improving system—which interestingly bears a family resemblance to Share's (1995) self-teaching hypothesis for recoding—submits that readers, like conductors of an orchestra (see Anderson et al., 1985), acquire the ability to manage multiple strategies for reading. Within this model, different cueing systems offer a means by which the reader can "cross check" their word recognition and meaning making as they read. Clay therefore did not suggest displacing grapho-phonemic approaches; she merely suggested ways in which readers might be guided to deploy cueing systems interdependently. Advocates of Whole Language, such as Yetta Goodman and her colleagues (Goodman, Burke & Sherman, 1980; Goodman & Marek, 1996), also suggest the importance of learning to orchestrate multiple cues, even promoting strategy lessons and retrospective miscue analyses to support readers as they engage with multiple diverse cueing systems (see Gibson & Levin, 1975, on teaching a "set for variability").

Evidence Supporting Multiple Cueing Pedagogy. Significant support for a more inclusive orientation has also emerged from several studies comparing multiple cueing approaches with a singular emphasis on phonics. Scanlon and Anderson (2020) summarize work that was initiated by Vellutino and Scanlon (2002) and refined over several decades (see Scanlon, et al., 2024). They specifically examine the Interactive Strategies Approach (ISA),

a technique intended to help readers develop word solving strategies that enlist the use of orthographic, phonological, syntactic, semantic, and lexical cues. As Scanlon and Anderson (2020) state:

> The ISA involves extensive attention to the development of phonological/phonemic awareness and phonics skills and the application of those skills in combination with the development of strategic word-solving skills in context. In the ISA, substantial emphasis is placed on the interactive and mutually supportive roles of contextual and alphabetic information in the process of word solving. It involves explicit instruction and guidance in the use of word-solving strategies and in the underlying skills and understandings that enable the use of those strategies (Anderson, 2009; Scanlon, Anderson, & Sweeney, 2017). (S21-S22)
>
> …
>
> According to the theoretical model that underlies the ISA, students at the early stages of learning to read need to understand the communicative purposes and conventions of print, develop facility and fluency with the alphabetic code, learn to use both code- and meaning-based word-solving strategies in interactive and confirmatory ways, and be provided with supportive opportunities to orchestrate these understandings in both structured tasks and authentic reading contexts (Vellutino & Scanlon, 2002). (p. S22)

Drawing from 25 years of research regarding the use of this approach with beginning and struggling readers as well as middle grade students, they found that the ISA, more so than other approaches, offers readers a form of self-teaching. This advantage supports readers' successful, ongoing enlistment of phonics for word learning in the context of their engagement with "natural" texts (i.e., texts that are not contrived to ensure a preset repetition of selected words or word families, or not specifically designed for research purposes).

Our Revised Version of the Claim

Critics of the three cueing systems hold the view that teaching beginning reading should focus on developing a reader's ability to recognize words accurately and automatically. They argue that decoding is key to developing the automatic word identification—thus freeing up the cognitive resources for constructing meaning. Accordingly, they question Goodman (1967) and other literacy educators whose approaches either directly or

indirectly might perpetuate the use of cueing systems (other than phonics)—arguing that these are distractions from the crucial work of decoding.

In our view, however, SoR advocates have been too quick to dismiss the positive contributions of multiple cueing models and approaches—namely, that they support word identification and understanding, as well as the development of word learning, word solving, and orthographic mapping. Reading requires an orchestration of various factors across words and sentences. It seems overly limiting to discredit the use of cueing systems based on what some might consider a restrictive assumption—that reading is entirely the accurate naming of words, rather than an act of meaning making that involves hypothesizing. To dismiss the use of context as an over-reliance on "guessing" or "predicting" ignores important evidence. The essence of most theoretical models of reading involves semantic, syntactic, *and* orthographic processing, We also find some of the arguments against cueing systems (i.e., the view that the use of context or syntactic, semantic or pragmatic cues, even when coupled with phonics, may detract from word learning) to require the out of hand dismissal of important lines of research. Opponents of cueing systems fail to consider research that might counter their position. They suggest the need for, but sometimes fail to examine, studies considering these matters more directly with students as they learn to read. And, despite the danger of extrapolating from comparisons of good and poor readers, they use those studies to support their critique of an emphasis on context or the use of cueing systems (Seidenberg, 2017). As a result, Whole Language and other popular approaches (e.g., Balanced Literacy) have been maligned as having a phonics gap and a flawed allegiance to cueing systems.

Deep down, we also suspect that many scholars have experienced a kind of knee-jerk reaction to Goodman's (1967) name for this approach—"reading as a psycholinguistic guessing game." Arguably, Goodman's extended discussions of the reading process indicate that his use of "guessing" in the title was meant to convey a disposition to predicting, inferring, cross-checking, and hypothesizing. And while some of us might wish he had called it something else, like "informed hypothesis testing," or even "educated guessing," he didn't.

It is time, we think, to recognize that there is always a tentative and provisional character to both word identification and meaning construction. Meanings change across settings, and no matter how good we are at reading, we don't always get things right the first time around. That is precisely why Gibson & Levin (1975) proposed the necessity of a "set for variability" in the development of readers' word-solving repertoires. To rely on extrapolations from comparisons of good and poor readers while ignoring research on the efficacy of multiple cueing pedagogical approaches seems short-sighted. Prudently, in her discussions of cueing systems, Adams (1998) did not deny their possible role, but instead suggested the need for more research on their use with beginning readers. We believe that the work of Scanlon and her colleagues (2024) has answered Adams' call by demonstrating that a "full tool box" of word solving strategies, as reflected in their ISA interventions, enhances word solving, word reading, orthographic mapping, and understanding connected text.