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# How the Reading for Understanding Initiative's Research Complicates the Simple View of Reading Invoked in the Science of Reading

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**ABSTRACT**

Advocates of the science of reading have invoked the simple view of reading (SVR) to justify an approach that foregrounds decoding in early reading instruction. The SVR, which describes comprehension as the product of decoding and listening comprehension, also served as the primary theoretical model underlying the Reading for Understanding (RfU) initiative. Research funded under the RfU initiative included direct examinations of the validity of the SVR and the nature of its underlying components and extended the SVR in studies of middle school and high school readers. In this article, the authors use research conducted under the RfU initiative to examine the validity and utility of the SVR, in general, and the appropriateness of its application in the "science of reading" debate. RfU research has provided not only evidence in support of the overall SVR model but also important cautions relevant to the "science of reading" debate. In particular, RfU has provided evidence regarding the significance of the listening comprehension component of the SVR, often overlooked by advocates of the science of reading. This research has documented the importance of early oral language skills, which support both decoding and listening comprehension in young readers and plays a critical role in students' success as readers as they move through school. In addition, RfU research has identified a complicated constellation of skills and knowledge that impact reading comprehension as students advance in school.

If the current public debate over the science of reading were a play, one of its leading characters would be the simple view of reading (SVR). A search of the term *science of reading* reveals that the SVR is invoked virtually universally in the recent, public discussions of early reading instruction. Furthermore, the term is invoked with a degree of confidence and enthusiasm rare in education (e.g., Farrell, Hunter, Davidson, & Osenga, 2019; Schwartz & Sparks, 2019).

The SVR was originally intended to provide a broad model for understanding the role of decoding in reading comprehension and to identify potential sources of reading disabilities (Gough & Tunmer, 1986). This model describes reading comprehension as the product of decoding and listening comprehension and specifies that, in general, readers who have underdeveloped skill in quickly and accurately reading words (decoding) or in constructing meaning from discourse (listening comprehension) will struggle with reading comprehension. Although both decoding and listening comprehension are actually quite complex, involving an array of skills and knowledge (see, e.g., Francis, Kulesz, & Benoit, 2018), framing comprehension as the product of these

two broad contributors has long been viewed as a useful heuristic for understanding sources of reading success and difficulty and shaping the purposes and goals of reading pedagogy. That said, the ubiquity and relative simplicity of the SVR invite scrutiny of its explanatory power.

Although the SVR gives equal footing to the model's two components, it has most often been used within the "science of reading" debate to justify a pronounced focus on decoding and word reading in instruction and assessment (Loewus, 2019; Sohn, 2020). For example, in the American Public Media report that ignited much of the current public debate, journalist Hanford (2018a) invoked the SVR with its dual components but claimed that "language comprehension is what develops naturally in children when people talk to them….Decoding is what kids have to be taught" (p. 13). In the widely read article in *The New York Times* that followed, Hanford (2018b) attributed the low performance of fourth-grade students on the National Assessment of Educational Progress to a need for more systematic phonics instruction in school. Perhaps for this reason, opponents of this version of the science of reading (e.g., Hood, 2019; Strauss, 2018) have characterized it as "a return to explicit phonics instruction and the dismissal of other approaches" (Strauss, 2018, para. 9) and other important components of early reading development. Although this public debate should not be confused with the body of scientific studies of reading, which is also sometimes collectively referred to as the science of reading, the debate has certainly brought the term to a more public conversation.

In this article, we use research conducted under the Reading for Understanding (RfU) initiative to examine the validity and utility of the SVR, in general, and the appropriateness of its application in the "science of reading" debate. The SVR served as the underlying theoretical model for much of the research conducted under the auspices of the RfU initiative, and RfU research included both direct and indirect examinations of the model. Thus, we begin with an overview of the RfU research.

In 2009, the Institute of Education Sciences committed $120 million to establish the RfU initiative. This initiative was designed to redress concerns that students' improvement in reading comprehension had leveled off over the previous few decades, coupled with the observation that the amassed reading comprehension research warranted in-depth examination of how to improve student performance. In 2010, six teams of researchers (one focused on assessment and five charged with understanding and improving the development and pedagogy of reading comprehension) were funded to carry out the initiative. Two teams—the University of Florida's Florida Center for Reading Research (FCRR) and The Ohio State University's Language and Reading Research Consortium (LARRC)—focused on early reading levels (pre-K–4); three teams focused on older readers in grades 5–12: the Strategic Education Research Partnership's Catalyzing Comprehension through Discussion and Debate (CCDD), The University of Texas at Austin's Promoting Adolescents' Comprehension of Text, and the University of Illinois at Chicago's Reading, Evidence, and Argumentation in Disciplinary Literacy Instruction (READI); and one team, Educational Testing Service, focused on assessment. Collectively, the teams studied the development, instruction, and assessment of reading comprehension from prekindergarten through 12th grade. The funding mandate called for a network, a unique feature of this effort that brought site directors and scholars from the six teams together on a recurring basis to share collegial critique and common experiences and to promote synergies across teams.

In 2016, following the five-year award period, the Institute of Education Sciences funded an invited proposal from the National Academy of Education to synthesize findings, themes, principles, and barriers related to this ambitious attempt to understand and improve U.S. reading comprehension performance. Through the Reaping the Rewards of the Reading for Understanding Initiative, the National Academy of Education was charged with answering the question, What has been the yield from this investment? More specifically, the charge was to synthesize, from this substantial and unprecedented effort, what had been learned about understanding and improving reading comprehension. We are the authors of that book-length synthesis (Pearson, Palincsar, Biancarosa, & Berman, 2020).

The SVR was the only reading model identified in the original RfU call for proposals and served as a cornerstone for the initiative (Institute of Education Sciences, 2009). The RfU teams engaged in examining the model, particularly as they studied the nature and development of reading comprehension. These examinations involved direct validation studies of the SVR, as well as attempts to establish a more elaborated picture of the strategies, skills, and knowledge that underlie successful reading comprehension both in its initial stages and as students progress through school. In doing so, these studies also offered indirect opportunities to examine how the model has been applied to the recent "science of reading" discussions. The RfU effort complicated the SVR substantially by adding to our knowledge about the subcomponents that comprise the key component of listening comprehension and, to a lesser degree, decoding; how those components shift in relation to one another and to the ultimate reading comprehension outcome across the development span for pre-K–12; and what other, including exogenous, factors need to be considered to allow us to explain more of the variance in reading comprehension, for both younger and older readers. It is important to note, however, that most RfU research discussed in this article primarily involved students who speak English as a first

language. There is a large body of non-RfU research on similar issues among second-language learners in the United States and among students in non-U.S. settings that is not addressed here (Y.-S.G. Kim, 2016; Mancilla-Martinez, Christodoulou, & Shabaker, 2014; Mancilla-Martinez & Lesaux, 2017).

## Examining the SVR

Several RfU studies directly examined the validity of the SVR and the nature of its components. RfU studies have provided evidence of the overall validity of the SVR and reinforced the importance of developing students' word-level skills early in school. However, in providing evidence of the importance of early attention to other aspects of students' literacy repertoires, especially oral language skills, the RfU work has provided important cautions about an exclusive focus on word-reading instruction. In addition, the findings illuminate challenges in using the SVR as a guide in instruction and assessment.

### *SVR Validation Studies*

LARRC (2015a) examined the validity of the SVR model in grades 1–3, using enhanced approaches to measurement and data analysis. Specifically, the researchers used multiple measures for each construct (word recognition, listening comprehension, and reading comprehension) and used structural equation modeling to examine the overall adequacy of the model. They were particularly interested in shifts in the relative contributions of word recognition and listening comprehension to reading comprehension across the grades. Consistent with the findings of much prior non-RfU research (e.g., Hoover & Gough, 1990; Kendeou, van den Broek, White, & Lynch, 2009; Y.-S.G. Kim, 2017; Kirby & Savage, 2008; Vellutino, Tunmer, Jaccard, & Chen, 2007), LARRC found that the SVR provides a good estimate of reading comprehension in these grades. LARRC also documented a shift as early as grade 2 from word recognition (decoding) to listening comprehension as the leading predictor of reading comprehension. Furthermore, in contrast to earlier research (e.g., Adlof, Catts, & Little, 2006), LARRC found, specific to the word recognition component of the SVR, that the explanatory power of word-reading accuracy (i.e., ability to accurately read words) declines after grade 1, but the explanatory power of word-reading fluency (i.e., speed of accurate word reading) becomes statistically significant at grade 3. This finding suggests that fluency may become a better indicator of word recognition as students develop greater accuracy in their word recognition.

Lonigan, Burgess, and Schatschneider (2018; FCRR) examined the validity of the SVR in grades 3–5. Consistent with the research conducted with younger students, decoding and language (vocabulary and syntax) factors accounted for approximately 90% of the variance in reading comprehension. Across grade levels, decoding and language skills shared substantial variance, and language accounted for a larger proportion of unique variance (24–33%) than did decoding (10%). In addition, decoding explained less variance among the older students than the younger students, echoing a pattern similar to that of LARRC (2015a).

LARRC and Chiu (2018) examined the utility of the SVR for predicting comprehension in grade 3 based on prekindergarten indicators. Consistent with LARRC's (2015a) findings, the SVR constructs were found to account for approximately 94% of the variance in reading comprehension at grade 3. In addition, the longitudinal analysis confirmed that oral language and code-related skills measured in pre-K explained substantial variance in grade 3 reading comprehension. The longitudinal analysis revealed a developmental pathway in which preschool oral language was a robust predictor of later reading comprehension.

Although RfU work has offered evidence of the validity of the SVR, it also has illuminated challenges in using the SVR as a framework for understanding reading comprehension and diagnosing young students' difficulties and strengths. Most notably, Lonigan and Burgess (2017) tested the separability of decoding and reading comprehension in kindergarten through grade 5. They found that it was not possible to separate reading comprehension from decoding until grade 3; that is, existing measures were unable to distinguish between students whose primary challenges were related to decoding versus reading comprehension difficulties. In addition, the RfU studies have added to questions regarding the role of vocabulary knowledge in the SVR. Traditionally, vocabulary knowledge has been conceptualized as part of listening comprehension. LARRC (2017) offered confirmatory evidence for this conceptualization. They concluded that oral language (vocabulary and grammar) and listening comprehension are only measurable as a single construct, oral language, in prekindergarten through grade 3. However, two RfU studies (LARRC, 2015a; Wagner, Herrera, Spencer, & Quinn, 2015) called the SVR's conceptualization into question by offering evidence that vocabulary knowledge may make contributions to word recognition, as well as listening comprehension, in grades 1–3. These findings extend those of previous non-RfU research about the contribution of vocabulary knowledge to both decoding and comprehension in elementary-age students (e.g., Tunmer & Chapman, 2012; Verhoeven, van Leeuwe, & Vermeer, 2011); they also suggest that claims about the independence of the two components of the SVR may, in Tunmer and Chapman's (2012) words, "need to be relaxed somewhat" (p. 464).

Collectively, these studies have both validated and extended the SVR and suggested a pattern in which, consistent with the "science of reading" claims, decoding is an important predictor of reading comprehension. However, RfU research has offered strong evidence that oral language skills also exert a powerful influence over reading comprehension, and that influence seems to increase once readers' decoding skills are more developed. Other non-RfU studies have also found that the influence of decoding on reading comprehension attenuates over time and language becomes more influential (e.g., García & Cain, 2014; Vellutino et al., 2007). This shift is likely due to the increasing importance of semantic knowledge (knowledge of word meanings and world knowledge) as students encounter longer and more complex texts that convey more sophisticated ideas (Storch & Whitehurst, 2002).

These findings add to evidence suggesting that it may be difficult to disentangle the broad set of factors that both influence students' early reading development and set the stage for later success. The notion that myriad language and cognitive skills are involved in successful reading comprehension has been supported by work before and concurrent with the RfU research that is the focus of this article (e.g., Cain, Oakhill, & Bryant, 2004; Y.-S.G. Kim, 2017; Lepola, Lynch, Laakkonen, Silvén, & Niemi, 2012). For example, in one concurrent non-RfU study, Y.-S.G. Kim (2017) identified a hierarchical structure of relations among language skills, cognitive skills, and decoding skill among second-grade students. Among other things, Kim found that foundational language skills, such as vocabulary and grammatical knowledge, underlie higher order skills, such as making inferences, perspective taking, and comprehension monitoring. These language and cognitive skills are, in turn, necessary for listening comprehension. In addition, listening comprehension was one of two factors, along with decoding, that related directly to reading comprehension. In fact, in Kim's work, language skills explained a large amount of variance in both listening comprehension (86%) and reading comprehension (66%) among students in grade 2. Taken together, this research suggested that a focus on decoding alone represents a flawed application of the SVR and likely overlooks the importance of early language development as fuel for both decoding and comprehension.

## Application of the SVR to Adolescent Reading Comprehension

The "science of reading" debate has centered only on the earliest stages of reading development. Although early reading is important, reading development is best conceptualized as a long-term trajectory in which readers are continually preparing for challenges ahead in becoming ever more skillful. One of the valuable attributes of the RfU initiative was its close attention to students' development across the grade span. Similar to the research with younger students, RfU studies have demonstrated that whereas the overall influence of decoding on comprehension attenuates over time, decoding remains an important factor for adolescents whose word-level skills are underdeveloped. For example, Wang, Sabatini, O'Reilly, and Weeks (2019; Educational Testing Service) found that fifth- and eighth-grade students who fell below a minimum threshold of decoding skill made little progress in reading comprehension over three years, whereas for students who performed above the decoding threshold, comprehension accelerated across the grades.

RfU studies also have moved beyond the SVR (or perhaps added complexity to the SVR) as they investigated adolescent comprehension, relying on earlier research that had pointed to a broad range of contributors to adolescent comprehension and research that had questioned the validity of the SVR for older readers (e.g., Kershaw & Schatschneider, 2012). For example, Francis et al. (2018) proposed a new model to account for variation in readers and texts across grade levels and called their model the complete view of reading. The researchers modeled reading fluency as a proxy for reading comprehension in grades 6–8, using measures of reader characteristics (word-reading efficiency, decoding, verbal knowledge, and listening comprehension) and text characteristics (average word frequency, average sentence length, narrativity, syntactic simplicity, word concreteness, referential cohesion, and deep cohesion). Francis et al. found evidence that the development of fluency/comprehension is heterogeneous across readers, with varying rates of growth over time, and that text characteristics affect readers differently. For example, expository texts and more difficult texts generally impeded fluency, leading students to read more slowly; this was particularly the case for better readers, who, it appears, may adjust their reading rate as they encounter more challenging texts. According to Francis et al., these findings suggest that models such as the SVR that attribute comprehension entirely to component skills may cause us to overlook important variation in how individuals approach comprehension across situations and texts, and may thus obscure potential pathways for intervention.

Ahmed et al. (2016; Promoting Adolescents' Comprehension of Text) sought to understand sources of variance in reading comprehension for adolescent readers. In an earlier study, Cromley and Azevedo (2007) examined the direct and inferential mediation theory of reading comprehension, which proposes that background knowledge, vocabulary knowledge, and word reading have a direct influence on comprehension, with background knowledge and vocabulary also influencing comprehension through inference making and reading strategies. Informed by the direct and inferential mediation model,

Ahmed et al. examined the factors in reading comprehension in middle and high school students. Their work supported the original model and provided evidence that background knowledge, vocabulary knowledge, word-reading skill, inference making, and the deployment of reading strategies all make statistically significant direct contributions to comprehension. Moreover, Ahmed et al. documented a shift in which the role of vocabulary knowledge attenuates over time, whereas inferencing skill and background knowledge become more prominent contributors to reading comprehension.

Goldman et al. (2016; READI) further augmented theoretical conceptualizations of adolescent reading by examining underlying processes through a disciplinary lens. The researchers developed a conceptual framework that describes the reading, reasoning, and argumentation practices of disciplinary learning in literature, history, and science. The researchers examined empirical and theoretical literatures to articulate a set of core constructs within each discipline (e.g., epistemological considerations, types of text structures) and a set of related goals that describe reading and reasoning in each discipline. The purpose of the goals is to articulate processes that, although challenging for adolescent readers, are necessary for authentic forms of disciplinary engagement. Examples of disciplinary engagement include identifying characters' motives in a piece of literature, evaluating historical interpretations for their completeness and quality of evidence, and reasoning with evidence to explain a scientific phenomenon.

Although largely validating the SVR in the early grades and the significance of word recognition, the RfU portfolio of work has added to evidence about the early importance of oral language and the later importance of inferencing skill, vocabulary knowledge, background knowledge, and disciplinary knowledge for successful comprehension. These findings indicate the incompleteness of the SVR for describing comprehension and suggest ways that the "science of reading" advocates may be arguing for an overly simplistic view of students' long-term reading development.

## The Structure of Language and Its Relation to Reading Comprehension

Perhaps the most significant contribution of the RfU research with respect to the "science of reading" discussion regards the importance of oral language skills in reading development. In the previous section, we described research showing that vocabulary and other aspects of oral language exert an increasingly strong influence on students' reading comprehension beginning very early in young learners' development as readers. In this section, we look at additional evidence from the RfU studies regarding the essential role of language for students' ultimate success as readers. Although this recognition is implicit in the SVR model, it has been underrepresented in the "science of reading" discussions (e.g., Hanford, 2018a). Prior to the commencement of the RfU initiative, research had established language skills as significant concurrent and longitudinal correlates of reading comprehension (e.g., Bowey, 1986; Catts, Adlof, & Weismer, 2006; Catts, Fey, Zhang, & Tomblin, 1999; de Jong & van der Leij, 2002; Ouellette, 2006; Storch & Whitehurst, 2002). For example, Nation and Snowling (1998) examined the language skills of fourth graders who were stronger or weaker in reading comprehension but had similar decoding skill. The researchers found that the two groups had similar phonological skills but that the weaker comprehenders had less developed vocabulary knowledge. In addition, contemporary models of reading comprehension, from the SVR to the construction–integration model (Kintsch, 1988), have long posited an important role for language. However, RfU research has added to our understanding of the nature and development of linguistic knowledge and skill (including vocabulary knowledge, grammatical skill, and morphological knowledge) and their contributions to reading comprehension (Apel, Diehm, & Apel, 2013; LARRC & Logan, 2017). Along with the studies on the SVR and earlier non-RfU research (e.g., Cain, 2007; Kieffer, Biancarosa, & Mancilla-Martinez, 2013), this research has pointed to the importance of early oral language development and, thus, potential limitations of an exclusive focus on decoding in early reading instruction. In addition, the research has suggested that language is best conceptualized as a constellation of closely related skills and knowledge that are likely best developed together from the earlier through the later years of schooling. This work has produced several major findings.

First, longitudinal examinations of reading comprehension conducted by the RfU centers have identified early language-related skills and profiles of skills that predict later listening and reading comprehension. Quinn, Wagner, Petscher, and Lopez (2015; FCRR) found that students with higher levels of vocabulary knowledge in grade 1 made greater growth in their reading comprehension across grades 1–4, supporting an instrumental view of vocabulary knowledge in which early knowledge of word meanings leads to better comprehension over time (Anderson & Freebody, 1981). Murphy, LARRC, and Farquharson, (2016) examined profiles of lexical quality in prekindergarten as predictors of grade 1 reading comprehension, listening comprehension, and word recognition. They found that students' orthographic, phonological, morphosyntactic, and vocabulary skills accounted for substantial variance in grade 1 reading comprehension. The

researchers also found that students in the low-average band of grade 1 reading comprehension performance had somewhat different underlying skill profiles in prekindergarten as compared with other groups. Students who had low letter knowledge in prekindergarten had similar grade 1 word recognition as students who had been low in language, but the students who had lower language skills in prekindergarten were lower on listening comprehension at grade 1. This suggests that lower levels of language skill better predict later reading comprehension difficulties than do lower levels of letter knowledge.

Alonzo, Yeomans-Maldonado, Murphy, Bevens, and LARRC (2016) examined prekindergarten language-related predictors of grade 2 listening comprehension. They found that a variety of language-related predictors (including listening comprehension, vocabulary, word structure knowledge, and grammar) accounted for substantial variance (55%) in grade 2 listening comprehension. However, a much smaller set of pre-K measures (listening comprehension, working memory, and language skills) predicted grade 2 listening comprehension, whereas the independent vocabulary measures did not add value to the prediction of grade 2 listening comprehension.

Taken together, and consistent with evidence presented earlier, these findings point to the significance of a view of early oral language as a constellation of related, and often indistinguishable, skills that set the stage for later success with comprehension. Evidence that some students who struggle with listening comprehension and reading comprehension in the later elementary grades may have had earlier difficulties with components of language, rather than decoding skill, suggests that attention to language development in early schooling is an important ingredient for later comprehension success.

Second, whereas the significance of language skills for reading comprehension is evident as early as grade 2, different aspects of language are challenging to distinguish in younger students. Five studies in the RfU synthesis examined the relations among dimensions of oral language in the primary and elementary grades with some differing results. LARRC (2017) found that oral language (grammar and vocabulary) and listening comprehension are best characterized as a single oral language construct in prekindergarten through grade 3. LARRC, Jiang, Logan, and Jia (2018) also found that grammar and vocabulary scores are closely associated in preschool through grade 3. LARRC (2015b) supported a single-factor model (i.e., grammar, vocabulary, and discourse were not distinguishable) at prekindergarten and kindergarten, a two-factor model (i.e., vocabulary and grammar comprising one dimension and discourse skills comprising a second) at grades 1 and 2, and a three-factor model (grammar, vocabulary, and discourse) at grade 3. By contrast, Lonigan and Milburn (2017) found dimensionality in oral language with separate factors for vocabulary and syntax/listening comprehension for students in prekindergarten through grade 5.

LARRC (2015c) found that dimensionality of oral language was evident in prekindergarten students who were Spanish–English dual-language learners. The best explanatory model for these students included a dominant general-language factor and two highly correlated factors representing word knowledge and grammatical knowledge. In addition, Spencer et al. (2015) found that vocabulary knowledge and morphological knowledge are best understood as a single construct in grade 4. These findings point to the possibility that thinking about language development as an interconnected set of skills may provide the best guidance for early instruction and are in line with other research suggesting that aspects of language are closely related and are mutually reinforcing in the early grades; that is, many language skills are invoked in the process of reading, and thus, the coordination of these skills during reading may create a system of linked development (Dickinson, Nesbitt, & Hofer, 2019).

Third, RfU studies with students in the upper elementary through middle school grades have found that additional academic-language and reasoning skills predict sophisticated forms of reading comprehension. Uccelli, Phillips Galloway, Barr, Meneses, and Dobbs (2015; CCDD) validated a measure of academic-language skills that includes understandings about register and argument, as well as higher level grammar and morphology. The measure, the Core Academic Language Skills Instrument (CALS-I), predicted reading comprehension after controlling for grade level, English proficiency designation, socioeconomic status, word reading, and vocabulary knowledge in grades 4–6, accounting for 12% of the variance in reading comprehension. LaRusso et al. (2016) found that the academic skills measured by the CALS-I predicted students' deep comprehension using the Global Integrated Scenario-based Assessment (O'Reilly & Sabatini, 2013), a multitext, problem-solving–focused comprehension assessment) in grades 4–7. They also found that a measure of students' ability to position actors (or characters) in a text based on their roles and contexts explained additional variation on the same Global Integrated Scenario-based Assessment measure.

Phillips Galloway and Uccelli (2019) examined growth on the CALS-I and its association with reading comprehension among emergent bilingual students and English-proficient students across grades 6 and 7. The researchers found that emergent bilingual students had statistically significantly lower initial scores on both measures but exhibited similar rates of growth as compared with English-proficient peers. Phillips Galloway and Uccelli also found that students who had higher initial scores on the CALS-I also had higher levels of reading comprehension and higher growth in reading comprehension over time. These studies have offered a promising measure of

academic language that specifies a range of skills and knowledge needed for engagement with disciplinary texts. In addition, these studies have highlighted the need to consider complex acts of reading, including deep (intertextual, problem-oriented) comprehension of challenging texts, in constructing models of comprehension and pointed to the sophisticated knowledge and reasoning skills that may support success with these tasks.

Some of the differences in the results of these studies are likely attributable to the use of different measures to represent core constructs. In particular, comprehension monitoring and inferencing were treated differently across studies. For example, LARRC (2015b) used an inferencing task as part of the discourse construct, along with measures of comprehension monitoring and text structure knowledge, whereas LARRC (2017) used an inferencing task as part of listening comprehension. What emerges, however, is a conceptualization of oral language as dominated by an overall, or general, language factor in the earliest grades, becoming increasingly separable into word-level, grammatical, and higher level (discourse and inferencing-related) constructs as students move from primary into later elementary grades. These findings have possible implications for instruction, pointing to the potential need for multifaceted approaches to language development early in school, and for the assessment of oral language, suggesting that an omnibus oral language assessment, such as a listening comprehension assessment, may be useful in identifying students with less developed oral language skills that may compromise reading comprehension development.

In adding strong evidence about the importance of oral language skills, the RfU research has resonated with calls for greater attention to oral language as an essential component of reading comprehension development. Dickinson, Golinkoff, and Hirsh-Pasek (2010), for example, argued that the influential National Early Literacy Panel (2008) report, *Developing Early Literacy: A Scientific Synthesis of Early Literacy Development and Implications for Intervention*, had failed to adequately describe the pervasive, longitudinal, but often mediated or moderated impact of language on reading development. Because of its indirect effect on reading comprehension, Dickinson et al. also worried that policymakers would ignore it in favor of the more readily malleable set of skills related to decoding.

## Conclusion

RfU research has illuminated both the strengths and limitations of the SVR at the very moment when the SVR has assumed a central role as the theoretical grounding of a strong code emphasis in the current, public discussions of the science of reading. The conceptualization and representation of decoding and language comprehension as "necessary, and thus, of equal importance, for reading comprehension" (Hoover & Tunmer, 2018, p. 304) serve the broad conceptual model. The "science of reading" debate, with its focus on decoding in reading instruction, may both overlook the importance of oral language and obscure the complex dynamic relations among the skills and knowledge that lead to successful comprehension.

Hoover and Tunmer (2018), two of the developers of the SVR, noted that the original intent of the model was to suggest "that at the broadest level of analysis, *reading comprehension*…is determined by just two cognitive capacities: *decoding* [or word recognition]…and *language comprehension*" (p. 304). It is at the broadest level of analysis that the SVR continues to be most useful. It still provides a useful heuristic for conceptualizing and discussing the major clusters of factors that account for reading comprehension. The combined work of the RfU centers has suggested that if the SVR is to be cast as a lead character in the "science of reading" play, attention should be paid to both contributors to reading comprehension within the model. When we encounter unqualified assertions made by popularizers of the science of reading, such as claims that only decoding needs to be taught because language comprehension develops naturally (Hanford, 2018a), then we conclude that the SVR is being misrepresented and oversimplified in the debate.

The RfU research has exposed these limitations of the application of the SVR in the "science of reading" debate. This body of work also has pointed to more general issues regarding the clarity and utility of the SVR for guiding conversations about instruction, such as the "science of reading" discussion. For example, it is still unclear what subcomponents belong in each of the two broad SVR constructs. Does vocabulary adequately index listening comprehension (LARRC, 2015a; Wagner et al., 2015)? Should additional components be explicitly acknowledged in the model (e.g., where should one place the powerhouse factor of world knowledge?)? Are there underlying factors (e.g., fundamental cognitive components such as memory and attention) that explain the substantial shared variance between decoding and listening comprehension found in many empirical studies of the model (Catts, 2018; LARRC & Chiu, 2018; Lonigan et al., 2018)? How do metacognition (Connor et al., 2018; Fogarty et al., 2017) and engagement (J.S. Kim et al., 2017; Vaughn et al., 2017) mediate aspects of the SVR as students read for understanding?

Although the SVR model accounts for most of the variance in reading comprehension in the primary grades, it may not provide sufficient guidance for the development and application of instructional recommendations. Indeed, as Gough, Hoover, and Peterson (1996) declared, "only a fool would deny that reading is complex. Reading clearly involves many subprocesses, and those subprocesses must

be skillfully coordinated" (p. 1). In focusing on two broad predictors of comprehension that are underspecified and difficult to distinguish in the earliest grades (Lonigan & Burgess, 2017), the model offers less guidance about the particular underlying factors that will impact some students' reading comprehension later in school. Importantly for this discussion, it appears that addressing the underlying skills for successful comprehension in later elementary school and adolescence requires a more expansive and forward-looking gaze than that provided by the SVR and, certainly, the version of the SVR invoked by the advocates of the science of reading, at least in the phonics-oriented approach touted in public venues of late. At minimum, more careful attention to the listening comprehension component of the SVR, including the many dimensions of oral language development, is in order.

Similarly, explaining comprehension for older students may involve unpacking the infrastructure of the SVR (e.g., what is entailed in the listening comprehension component?) or augmenting it with additional facets, such as those investigated in other models. For example, the FCRR team subscribed to a longitudinal elaboration of the SVR called the lattice model that accounts for the reciprocal relations between decoding and listening comprehension, as well as other cognitive processes, over time (Connor, 2016). In addition, Ahmed et al. (2016) determined that background knowledge, vocabulary knowledge, reading comprehension, word-reading skill, inference making, and reading strategy use all make statistically significant direct contributions to comprehension in adolescence. Using RfU data, Francis et al. (2018) also examined an alternative model, one they labeled the complete view of reading, that accounts for idiosyncratic variation based not only on readers but also on texts by unifying discourse-based cognitive models of reading comprehension with the SVR. According to Francis et al., these findings suggest that models such as the SVR that attribute comprehension entirely to component skills may overlook important variation in reading comprehension of individuals across different situations and texts (reflecting the task/activity dimension of the RAND model). As a result, the models may obscure potential pathways for intervention (for examples of what these pathways might look like, see Valencia, Wixson, & Pearson, 2014).

In fact, the CCDD and READI work was based on the hypothesis that the SVR declined in relevance to middle-grades reading because it obscures or overlooks key elements that are crucial to success in reading literature, history, and science. For CCDD, these elements were academic-language skills, perspective-taking skills, and reasoning skills (LaRusso et al., 2016). For READI, they included the discourse conventions that render oral and written texts discipline specific and the complex set of reasoning skills that define evidence-based argumentation within disciplines (Goldman, 2018). One might argue that the listening comprehension component of the SVR covers academic language, but that interpretation obscures the fact that we are more likely to see than hear academic language; the major site for exposure to it is in literate contexts.

The primary work that remains to be completed is to better understand, and ultimately validate, the key subcomponents that constitute the components, particularly the listening comprehension component, across levels of development. The RfU portfolio gave us a good start. However, the collective RfU findings suggest several promising avenues, not only for a better elaborated and more global theory of reading comprehension but also for one that better specifies promising pathways for instruction.

The call for manuscripts for this special issue of *Reading Research Quarterly* on the science of reading explicitly asked authors to discuss the implications for practice of the science they presented. We accept that responsibility but with one major caveat. Most of the research that we reviewed was either longitudinal (same age or grade cohort of students measured at different timepoints across one or more years) or cross-sectional (different age cohorts measured at the same timepoint). Hence, the temptation to draw implications for pedagogy must be tempered by a countervailing cautionary disposition to avoid drawing unwarranted inferences about the efficacy of pedagogical alternatives that have not themselves been rigorously examined. One of the important limitations of the public "science of reading" debate has been the use of just such unwarranted inferences. Caution is particularly appropriate in this discussion of research that has highlighted the importance of the language component of the SVR.

Although evidence about the importance of oral language skills from the earliest years of schooling suggests that a focus on code-based instruction should be balanced with attention to students' oral language development, it is important to acknowledge that it has been challenging (albeit not impossible) to demonstrate that language is easily amenable to instruction and that language instruction transfers directly to improved reading comprehension. Studies of instruction in one important aspect of language, vocabulary knowledge, have offered mixed results. Instruction of word meanings has not been shown to be a reliable approach for improving students' overall reading comprehension; however, instruction that foregrounds students' abilities to solve the meanings of unknown words has shown some promise in this regard (Wright & Cervetti, 2017). In particular, in a non-RfU synthesis of research, Wright and Cervetti (2017) found that the small body of studies on instructional approaches that include attention to more than one strategy for solving meaning (e.g., combining the use of context clues and morphology) has tended to demonstrate positive impacts on students' reading comprehension. It may be that, over time, these interventions promote students' incidental

acquisition of word knowledge as they read, and help them comprehend texts by increasing access to the novel vocabulary words in those texts. Additional intervention research is needed to better understand whether and how this kind of instruction can be used to improve reading outcomes for young students.

In addition, although studies of vocabulary instruction have abounded, there has been less research on interventions that seek to simultaneously develop multiple aspects of students' language, including their grammatical and syntactic knowledge and metalinguistic knowledge and skill, with oral language and reading comprehension as outcomes. In fact, a key recommendation of the synthesis of the entire body of instructional research in the RfU initiative has been that additional research is needed to unpack the listening comprehension dimension of the SVR, to determine which skills and knowledge are malleable to instruction, and to develop and test instructional interventions for young readers (Pearson, Palincsar, Afflerbach, et al., 2020). As with studies of vocabulary, research on language interventions within and beyond the RfU portfolio has had mixed results, showing both the promise and challenge of careful instructional interventions designed to promote language growth and, ultimately, comprehension (Afflerbach, Biancarosa, Hurt, & Pearson, 2020; Biancarosa, Afflerbach, & Pearson, 2020; Clarke, Snowling, Truelove, & Hulme, 2010; Wilson, Dickinson, & Rowe, 2013). One insight from this small body of instructional research is that orchestrated, multicomponential language interventions have tended to be more effective in improving reading and listening comprehension than single-component interventions have (e.g., Connor et al., 2018). For example, the oral language intervention in Clarke et al.'s (2010) non-RfU study of 8- and 9-year-old students who struggled with reading comprehension involved components such as vocabulary, spoken language, and figurative language. The instruction led to statistically significant improvements in students' reading comprehension. As a field, we have an opportunity to parlay promising findings such as these into a more ambitious research agenda that puts listening comprehension on par with decoding as a way to promote reading comprehension.

## NOTES

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## REFERENCES

Adlof, S.M., Catts, H.W., & Little, T.D. (2006). Should the simple view of reading include a fluency component? *Reading and Writing*, *19*, 933–58. https://doi.org/10.1007/s11145-006-9024-z

Afflerbach, P., Biancarosa, G., Hurt, M., & Pearson, P.D. (2020). Teaching reading for understanding: Synthesis and reflections on the curriculum and instruction portfolio. In P.D. Pearson, A.S. Palincsar, G. Biancarosa, & A. Berman (Eds.), *Reaping the rewards of the Reading for Understanding initiative* (pp. 216–50). Washington, DC: National Academy of Education.

Ahmed, Y., Francis, D.J., York, M., Fletcher, J.M., Barnes, M.A., & Kulesz, P. (2016). Validation of the direct and inferential mediation (DIME) model of reading comprehension in grades 7 through 12. *Contemporary Educational Psychology*, *44/45*, 68–82. https://doi.org/10.1016/j.cedpsych.2016.02.002

Alonzo, C.N., Yeomans-Maldonado, G., Murphy, K.A., Bevens, B., & Language and Reading Research Consortium. (2016). Predicting second grade listening comprehension using prekindergarten measures. *Topics in Language Disorders*, *36*(4), 312–33. https://doi.org/10.1097/TLD.0000000000000102

Anderson, R., & Freebody, P. (1981). Vocabulary knowledge. In J.T. Guthrie (Ed.), *Comprehension and teaching: Research reviews* (pp. 77–117). Newark, DE: International Reading Association.

Apel, K., Diehm, E., & Apel, L. (2013). Using multiple measures of morphological awareness to assess its relation to reading. *Topics in Language Disorders*, *33*(1), 42–56. https://doi.org/10.1097/TLD.0b013e318280f57b

Biancarosa, G., Afflerbach, P., & Pearson, P.D. (2020). Teaching reading for understanding: Summarizing the curriculum and instruction work of the five core Reading for Understanding teams. In P.D. Pearson, A.S. Palincsar, G. Biancarosa, & A. Berman (Eds.), *Reaping the rewards of the Reading for Understanding initiative* (pp. 143–213). Washington, DC: National Academy of Education.

Bowey, J.A. (1986). Syntactic awareness in relation to reading skills and ongoing reading comprehension monitoring. *Journal of Experimental Child Psychology*, *41*(2), 282–99. https://doi.org/10.1016/0022-0965(86)90041-X

Cain, K. (2007). Deriving word meanings from context: Does explanation facilitate contextual analysis? *Journal of Research in Reading*, *30*(4), 347–59. https://doi.org/10.1111/j.1467-9817.2007.00336.x

Cain, K., Oakhill, J., & Bryant, P. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of Educational Psychology*, *96*(1), 31–42. https://doi.org/10.1037/0022-0663.96.1.31

Catts, H.W. (2018). The simple view of reading: Advancements and false impressions. *Remedial and Special Education*, *39*(5), 317–23. https://doi.org/10.1177/0741932518767563

Catts, H.W., Adlof, S.M., & Weismer, S.E. (2006). Language deficits in poor comprehenders: A case for the simple view of reading. *Journal of Speech, Language, and Hearing Research*, *49*(2), 278–93. https://doi.org/10.1044/1092-4388(2006/023)

Catts, H.W., Fey, M.E., Zhang, X., & Tomblin, J.B. (1999). Language basis of reading and reading disabilities: Evidence from a longitudinal investigation. *Scientific Studies of Reading*, *3*(4), 331–61. https://doi.org/10.1207/s1532799xssr0304_2

Clarke, P.J., Snowling, M.J., Truelove, E., & Hulme, C. (2010). Ameliorating children's reading comprehension difficulties: A randomized controlled trial. *Psychological Science*, *21*(8), 1106–16. https://doi.org/10.1177/0956797610375449

Connor, C.M. (2016). A lattice model of the development of reading comprehension. *Child Development Perspectives*, *10*(4), 269–74. https://doi.org/10.1111/cdep.12200

Connor, C.M., Phillips, B.M., Kim, Y.-S.G., Lonigan, C.J., Kaschak, M.P., Crowe, E., … Al Otaiba, S. (2018). Examining the efficacy of targeted component interventions on language and literacy for third and fourth graders who are at risk of comprehension difficulties. *Scientific Studies of Reading*, *22*(6), 462–84. https://doi.org/10.1080/10888438.2018.1481409

Cromley, J., & Azevedo, R. (2007). Testing and refining the direct and inferential mediation model of reading comprehension. *Journal of*

*Educational Psychology*, *99*(2), 311–25. https://doi.org/10.1037/0022-0663.99.2.311

de Jong, P.F., & van der Leij, A. (2002). Effects of phonological abilities and linguistic comprehension on the development of reading. *Scientific Studies of Reading*, *6*(1), 51–77. https://doi.org/10.1207/S1532799XSSR0601_03

Dickinson, D.K., Golinkoff, R.M., & Hirsh-Pasek, K. (2010). Speaking out for language: Why language is central to reading development. *Educational Researcher*, *39*(4), 305–10. https://doi.org/10.3102/0013189X10370204

Dickinson, D.K., Nesbitt, K.T., & Hofer, K.G. (2019). Effects of language on initial reading: Direct and indirect associations between code and language from preschool to first grade. *Early Childhood Research Quarterly*, *49*(4), 122–37. https://doi.org/10.1016/j.ecresq.2019.04.005

Farrell, L., Hunter, M., Davidson, M., & Osenga, T. (2019). The simple view of reading. *Reading Rockets*. Retrieved from https://www.readingrockets.org/article/simple-view-reading

Fogarty, M., Clemens, N., Simmons, D., Anderson, L., Davis, J., Smith, A., … Oslund, E. (2017). Impact of a technology-mediated reading intervention on adolescents' reading comprehension. *Journal of Research on Educational Effectiveness*, *10*(2), 326–53. https://doi.org/10.1080/19345747.2016.1227412

Francis, D.J., Kulesz, P.A., & Benoit, J.S. (2018). Extending the simple view of reading to account for variance within and across readers: The complete view of reading (CVR*i*). *Remedial and Special Education*, *39*(5), 274–88. https://doi.org/10.1177/0741932518772904

García, J.R., & Cain, K. (2014). Decoding and reading comprehension: A meta-analysis to identify which reader and assessment characteristics influence the strength of the relationship in English. *Review of Educational Research*, *84*(1), 74–111. https://doi.org/10.3102/0034654313499616

Goldman, S.R. (2018). Discourse of learning and the learning of discourse. *Discourse Processes*, *55*(5/6), 434–53. https://doi.org/10.1080/0163853X.2018.1440866

Goldman, S.R., Britt, M.A., Brown, W., Cribb, G., George, M., Greenleaf, C., … Project READI. (2016). Disciplinary literacies and learning to read for understanding: A conceptual framework of core processes and constructs. *Educational Psychologist*, *51*(2), 219–46. https://doi.org/10.1080/00461520.2016.1168741

Gough, P.B., Hoover, W.A., & Peterson, C.L. (1996). Some observations on a simple view of reading. In C. Cornoldi & J. Oakhill (Eds.), *Reading comprehension difficulties: Processes and intervention* (pp. 1–13). Mahwah, NJ: Erlbaum.

Gough, P.B., & Tunmer, W.E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, *7*(1), 6–10. https://doi.org/10.1177/074193258600700104

Hanford, E. (2018a, September 10). Hard words: Why aren't our kids being taught to read? [Transcript]. *APM Reports*. Retrieved from https://features.apmreports.org/files/hard-words-transcript.pdf

Hanford, E. (2018b, October 26). Why are we still teaching reading the wrong way? *The New York Times*. Retrieved from https://www.nytimes.com/2018/10/26/opinion/sunday/phonics-teaching-reading-wrong-way.html

Hood, M. (2019, September 10). What the new reading wars get wrong. *Education Week*. Retrieved from https://www.edweek.org/ew/articles/2019/09/11/what-the-new-reading-wars-get-wrong.html

Hoover, W.A., & Gough, P.B. (1990). The simple view of reading. *Reading and Writing*, *2*, 127–60. https://doi.org/10.1007/BF00401799

Hoover, W.A., & Tunmer, W.E. (2018). The simple view of reading: Three assessments of its adequacy. *Remedial and Special Education*, *39*(5), 304–12. https://doi.org/10.1177/0741932518773154

Institute of Education Sciences. (2009). *Request for applications: Reading for Understanding research initiative: CFDA number: 84.305F*. Retrieved from https://ies.ed.gov/funding/pdf/2010_84305F.pdf

Kendeou, P., van den Broek, P., White, M.J., & Lynch, J.S. (2009). Predicting reading comprehension in early elementary school: The independent contributions of oral language and decoding skills. *Journal of Educational Psychology*, *101*(4), 765–78. https://doi.org/10.1037/a0015956

Kershaw, S., & Schatschneider, C. (2012). A latent variable approach to the simple view of reading. *Reading and Writing*, *25*, 433–64. https://doi.org/10.1007/s11145-010-9278-3

Kieffer, M.J., Biancarosa, G., & Mancilla-Martinez, J. (2013). Roles of morphological awareness in English reading comprehension for Spanish-speaking language minority learners: Exploring partial mediation by vocabulary and reading fluency. *Applied Psycholinguistics*, *34*(4), 697–725. https://doi.org/10.1017/S0142716411000920

Kim, J.S., Hemphill, L., Troyer, M., Thomson, J.M., Jones, S.M., LaRusso, M.D., & Donovan, S. (2017). Engaging struggling adolescent readers to improve reading skills. *Reading Research Quarterly*, *52*(3), 357–82. https://doi.org/10.1002/rrq.171

Kim, Y.-S.G. (2016). Direct and mediated effects of language and cognitive skills on comprehension of oral narrative texts (listening comprehension) for children. *Journal of Experimental Child Psychology*, *141*, 101–20. https://doi.org/10.1016/j.jecp.2015.08.003

Kim, Y.-S.G. (2017). Why the simple view of reading is not simplistic: Unpacking the simple view of reading using a direct and indirect effect model of reading (DIER). *Scientific Studies of Reading*, *21*(4), 310–33. https://doi.org/10.1080/10888438.2017.1291643

Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review*, *95*(2), 163–82. https://doi.org/10.1037/0033-295X.95.2.163

Kirby, J.R., & Savage, R.S. (2008). Can the simple view deal with the complexities of reading? *Literacy*, *42*(2), 75–82. https://doi.org/10.1111/j.1741-4369.2008.00487.x

Language and Reading Research Consortium. (2015a). Learning to read: Should we keep things simple? *Reading Research Quarterly*, *50*(2), 151–69. https://doi.org/10.1002/rrq.99

Language and Reading Research Consortium. (2015b). The dimensionality of language ability in young children. *Child Development*, *86*(6), 1948–65. https://doi.org/10.1111/cdev.12450

Language and Reading Research Consortium. (2015c). The dimensionality of Spanish in young Spanish-English dual-language learners. *Journal of Speech, Language, and Hearing Research*, *58*(3), 754–66. https://doi.org/10.1044/2015_JSLHR-L-13-0266

Language and Reading Research Consortium. (2017). Oral language and listening comprehension: Same or different constructs? *Journal of Speech, Language, and Hearing Research*, *60*(5), 1273–84. https://doi.org/10.1044/2017_JSLHR-L-16-0039

Language and Reading Research Consortium & Chiu, Y.D. (2018). The simple view of reading across development: Prediction of grade 3 reading comprehension from prekindergarten skills. *Remedial and Special Education*, *39*(5), 289–303. https://doi.org/10.1177/0741932518762055

Language and Reading Research Consortium, Jiang, H., Logan, J.A., & Jia, R. (2018). Modeling the nature of grammar and vocabulary trajectories from prekindergarten to third grade. *Journal of Speech, Language, and Hearing Research*, *61*(4), 910–23. https://doi.org/10.1044/2018_JSLHR-L-17-0090

Language and Reading Research Consortium & Logan, J. (2017). Pressure points in reading comprehension: A quantile multiple regression analysis. *Journal of Educational Psychology*, *109*(4), 451–64. https://doi.org/10.1037/edu0000150

LaRusso, M., Kim, H.Y., Selman, R., Uccelli, P., Dawson, T., Jones, S., … Snow, C. (2016). Contributions of academic language, perspective taking, and complex reasoning to deep reading comprehension. *Journal of Research on Educational Effectiveness*, *9*(2), 201–22. https://doi.org/10.1080/19345747.2015.1116035

Lepola, J., Lynch, J., Laakkonen, E., Silvén, M., & Niemi, P. (2012). The role of inference making and other language skills in the development

of narrative listening comprehension in 4–6-year-old children. *Reading Research Quarterly*, *47*(3), 259–82. https://doi.org/10.1002/rrq.020

Loewus, L. (2019, March 12). What teachers should know about the science of reading (video and transcript) [Web log post]. Retrieved from https://blogs.edweek.org/teachers/teaching_now/2019/03/what_teachers_should_know_about_the_science_of_reading_video_and_transcript.html

Lonigan, C.J., & Burgess, S.R. (2017). Dimensionality of reading skills with elementary-school-age children. *Scientific Studies of Reading*, *21*(3), 239–53. https://doi.org/10.1080/10888438.2017.1285918

Lonigan, C.J., Burgess, S.R., & Schatschneider, C. (2018). Examining the simple view of reading with elementary school children: Still simple after all these years. *Remedial and Special Education*, *39*(5), 260–73. https://doi.org/10.1177/0741932518764833

Lonigan, C.J., & Milburn, T.F. (2017). Identifying the dimensionality of oral language skills of typically developing preschool through fifth-grade children. *Journal of Speech, Language, and Hearing Research*, *60*(8), 2185–98. https://doi.org/10.1044/2017_JSLHR-L-15-0402

Mancilla-Martinez, J., Christodoulou, J.A., & Shabaker, M.M. (2014). Preschoolers' English vocabulary development: The influence of language proficiency and at-risk factors. *Learning and Individual Differences*, *35*, 79–86. https://doi.org/10.1016/j.lindif.2014.06.008

Mancilla-Martinez, J., & Lesaux, N.K. (2017). Early indicators of later English reading comprehension outcomes among children from Spanish-speaking homes. *Scientific Studies of Reading*, *21*(5), 428–48. https://doi.org/10.1080/10888438.2017.1320402

Murphy, K.A., Language and Reading Research Consortium, & Farquharson, K. (2016). Investigating profiles of lexical quality in preschool and their contribution to first grade rereading. *Reading and Writing*, *29*, 1745–70. https://doi.org/10.1007/s11145-016-9651-y

Nation, K., & Snowling, M.J. (1998). Semantic processing and the development of word-recognition skills: Evidence from children with reading comprehension difficulties. *Journal of Memory and Language*, *39*(1), 85–101. https://doi.org/10.1006/jmla.1998.2564

National Early Literacy Panel. (2008). *Developing early literacy: A scientific synthesis of early literacy development and implications for intervention*. Washington, DC: National Institute for Literacy.

O'Reilly, T., & Sabatini, J. (2013). *Reading for understanding: How performance moderators and scenarios impact assessment design* (Research Report No. RR-13-31). Princeton, NJ: Educational Testing Service.

Ouellette, G.P. (2006). What's meaning got to do with it: The role of vocabulary in word reading and reading comprehension. *Journal of Educational Psychology*, *98*(3), 554–66. https://doi.org/10.1037/0022-0663.98.3.554

Pearson, P.D., Palincsar, A.S., Afflerbach, P., Cervetti, G.N., Kendeou, P., Biancarosa, G., … Berman, A.I. (2020). Taking stock of the Reading for Understanding initiative. In P.D. Pearson, A.S. Palincsar, G. Biancarosa, & A.I. Berman (Eds.), *Reaping the rewards of the Reading for Understanding initiative* (pp. 251–92). Washington, DC: National Academy of Education.

Pearson, P.D., Palincsar, A.S., Biancarosa, G., & Berman, A.I. (Eds.). (2020). *Reaping the rewards of the Reading for Understanding initiative*. Washington, DC: National Academy of Education.

Phillips Galloway, E., & Uccelli, P. (2019). Examining developmental relations between core academic language skills and reading comprehension for English learners and their peers. *Journal of Educational Psychology*, *111*(1), 15–31. https://doi.org/10.1037/edu0000276

Quinn, J.M., Wagner, R.K., Petscher, Y., & Lopez, D. (2015). Developmental relations between vocabulary knowledge and reading comprehension: A latent change score modeling study. *Child Development*, *86*(1), 159–75. https://doi.org/10.1111/cdev.12292

Schwartz, S., & Sparks, S.D. (2019, October 2). How do kids learn to read? What the science says. *Education Week*. Retrieved from https://www.edweek.org/ew/issues/how-do-kids-learn-to-read.html

Sohn, E. (2020, April 26). It's time to stop debating how to teach kids to read and follow the evidence. *Science News*. Retrieved from https://www.sciencenews.org/article/balanced-literacy-phonics-teaching-reading-evidence

Spencer, M., Muse, A., Wagner, R.K., Foorman, B., Petscher, Y., Schatschneider, C., … Bishop, D. (2015). Examining the underlying dimensions of morphological awareness and vocabulary knowledge. *Reading and Writing*, *28*, 959–88. https://doi.org/10.1007/s11145-015-9557-0

Storch, S.A., & Whitehurst, G.J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology*, *38*(6), 934–47. https://doi.org/10.1037/0012-1649.38.6.934

Strauss, V. (2018, September 25). The straw man in the new round of reading wars. *The Washington Post*. Retrieved from https://www.washingtonpost.com/education/2018/09/25/straw-man-new-round-reading-wars/

Tunmer, W.E., & Chapman, J.W. (2012). The simple view of reading redux: Vocabulary knowledge and the independent components hypothesis. *Journal of Learning Disabilities*, *45*(5), 453–66. https://doi.org/10.1177/0022219411432685

Uccelli, P., Phillips Galloway, E., Barr, C.D., Meneses, A., & Dobbs, C.L. (2015). Beyond vocabulary: Exploring cross-disciplinary academic-language proficiently and its association with reading comprehension. *Reading Research Quarterly*, *50*(3), 337–56. https://doi.org/10.1002/rrq.104

Valencia, S., Wixson, K.K., & Pearson, P.D. (2014). Putting text complexity in context: Refocusing on comprehension of complex text. *The Elementary School Journal*, *115*(2), 270–89. https://doi.org/10.1086/678296

Vaughn, S., Martinez, L.R., Wanzek, J., Roberts, G., Swanson, E., & Fall, A.-M. (2017). Improving content knowledge and comprehension for English language learners: Findings from a randomized control trial. *Journal of Educational Psychology*, *109*(1), 22–34. https://doi.org/10.1037/edu0000069

Vellutino, F.R., Tunmer, W.E., Jaccard, J., & Chen, R. (2007). Components of reading ability: Multivariate evidence for a convergent skills model of reading development. *Scientific Studies of Reading*, *11*(1), 3–32. https://doi.org/10.1080/10888430709336632

Verhoeven, L., van Leeuwe, J., & Vermeer, A. (2011). Vocabulary growth and reading development across the elementary school years. *Scientific Studies of Reading*, *15*(1), 8–25. https://doi.org/10.1080/10888438.2011.536125

Wagner, R.K., Herrera, S.K., Spencer, M., & Quinn, J.M. (2015). Reconsidering the simple view of reading in an intriguing case of equivalent models. *Journal of Learning Disabilities*, *48*(2), 115–9. https://doi.org/10.1177/0022219414544544

Wang, Z., Sabatini, J., O'Reilly, T., & Weeks, J. (2019). Decoding and reading comprehension: A test of the decoding threshold hypothesis. *Journal of Educational Psychology*, *111*(3), 387–401. https://doi.org/10.1037/edu0000302

Wilson, S.J., Dickinson, D.K., & Rowe, D.W. (2013). Impact of an early Reading First program on the language achievement of children from diverse language backgrounds. *Early Childhood Research Quarterly*, *28*(3), 578–92. https://doi.org/10.1016/j.ecresq.2013.03.006

Wright, T.S., & Cervetti, G.N. (2017). A systematic review of the research on vocabulary instruction that impacts text comprehension. *Reading Research Quarterly*, *52*(2), 203–26. https://doi.org/10.1002/rrq.163

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