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A Different View on the Simple View of Reading

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Abstract

The simple view of reading (SVR) framework has been used for decades to explain two general component skills considered to contribute to reading comprehension: decoding and linguistic comprehension. In the past, researchers have assessed the linguistic comprehension component using a wide range of language and/or listening comprehension measures that differed from each other. Many of those tasks did not align with the concept of linguistic comprehension originally proposed. Regardless, the studies' outcomes were similar: The SVR model adequately represents the process of reading comprehension. In this article, I propose a common thread that links those diverse measurement tasks; all the tasks measured students' metalinguistic skills. In fact, the findings from these studies mirror those found from investigations directly measuring the influence of language awareness abilities on reading comprehension. I conclude the article with the theoretical and educational implications of taking a different view of the second component of the SVR model.

Keywords

simple view of reading, validity, spoken and written language, metalinguistic skills

Approximately 35 years ago, Gough and Tunmer (1986) introduced the simple view of reading (SVR) to explain the process of reading comprehension. In their seminal paper, the SVR model depicted reading comprehension as the product of decoding and linguistic (or listening) comprehension: $R = D \times C$ (a later paper used the formula $R = D \times L$; Hoover & Gough, 1990). In basic terms, the SVR proposed that reading comprehension involves identifying and obtaining meaning from printed words and then using those words' meanings to help interpret the sentences and discourse in which those words occur (e.g., Hoover & Gough, 1990; Kim, 2017; Nation, 2019). Importantly, comprehension of sentences and discourse in written language does not just rely solely on the knowledge of the words decoded. One's knowledge of other aspects of language that contribute to sentence and discourse comprehension (i.e., morphology, syntax, and pragmatics; Bloom & Lahey, 1978) aids understanding as well.

Since the SVR model was introduced, hundreds of research teams have relied on the framework to guide their investigations of reading comprehension in individuals of all ages and abilities (e.g., Adlof et al., 2010; Braze et al., 2007; Catts et al., 2003, 2015; Foorman et al., 2018; Gottardo et al., 2018; Hjetland et al., 2018; Kendeou et al., 2009; Tilstra et al., 2009). Research findings across the years have documented that the basic tenets of the SVR appear to hold up; performance on measures researchers chose to assess decoding and linguistic comprehension explains a large amount of variance on individuals' reading comprehension scores (e.g., Hjetland et al., 2018; Hoover & Gough, 1990; Kershaw & Schatschneider, 2012; Kim, 2017; Lonigan et al., 2018). The unique point about the similar findings across these numerous studies is that many of the investigations did not measure the second component of the model, linguistic comprehension, using similar measures and/or with the method of study originally proposed by the model's authors (e.g., Gough & Tunmer, 1986; Hoover & Gough, 1990).

In this article, I first review the original meaning of linguistic comprehension as part of the SVR model and the proposed method for investigating it (Gough & Tunmer, 1986; Hoover & Gough, 1990). As part of this review, I also operationally define (spoken) language. I then discuss the multiple ways this second component of the SVR model has been measured. Some of those methods have been in line with the model's original tenets but a great number have not. After reviewing these differing assessment methods, I propose a common thread that links these wide-ranging measurement tasks, a thread that explains the similar results obtained by varied researchers using different tasks. I follow that point with the ramifications of these measurement inconsistencies, including a seeming lack of recognition of

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the overlap between two different lines of research investigating the same skills. I conclude with the theoretical and educational implications of taking a different view of the second component of the SVR model.

Measuring the Second Component of the SVR Model

In their seminal article, Gough and Tunmer (1986) indicated that the framework's linguistic comprehension component was best characterized as listening comprehension abilities, the skills used to comprehend information in written texts read by others. It is important to note that since the model was introduced, other researchers have used alternative terms for listening comprehension and/or conceptualized that component of the model in different ways. Two terms now frequently used to describe the second component of the model are language comprehension (e.g., Catts, 2021; García & Cain, 2014; Silverman et al., 2020) and oral language abilities (e.g., Chang et al., 2020; Kendeou et al., 2009; Metsala et al., 2021). By definition, oral or spoken language is the ability to produce and comprehend speech (or other communication modes, such as sign language) through the spontaneous interactive use of five knowledge bases: phonology, morphology, syntax, semantics, and pragmatics during a communicative exchange (e.g., American Speech-Language-Hearing Association [ASHA], n.d., Bloom & Lahey, 1978). Individuals typically use and understand spoken language without any direct or conscious thought on what is being produced or comprehended. As will be seen in later sections, tasks used to assess the second component of the SVR model rarely match the definition of (spoken) language.

When the authors of the SVR first proposed the model, they did not identify specific tasks to administer when assessing the second component: linguistic/listening comprehension. However, they stipulated that the linguistic/listening comprehension measures should only differ from the reading comprehension assessments by whom the reader is. That is, the type or genre of language (e.g., narrative vs. expository) and requirements of the task (e.g., answering factual questions) in both the linguistic/listening comprehension tasks and reading comprehension measures should be held constant and only the reader of the measure (i.e., examiner or student) should differ.

Since the SVR model was proposed, there have been a number of researchers, guided by the model, who assessed linguistic comprehension following the suggestion of its authors (Gough & Tunmer, 1986; Hoover & Gough, 1990). Indeed, these investigators followed the basic principle of the model by administering at least one listening comprehension task that mirrored the reading comprehension tasks given, with only the reader of the information differing (e.g., Braze et al., 2007; Tunmer & Chapman, 2012). Within those studies, listening (and reading) comprehension skills were assessed at the sentence (e.g., Braze et al., 2007; Vaughn et al., 2019) and passage levels (e.g., Adlof et al., 2010; Hjetland et al., 2018; Vaughn et al., 2019). In these studies, the listening comprehension task often was the same measure used to assess reading comprehension, except that the task and its test items were read by the examiner instead of the student (e.g., Hjetland et al., 2018; Tunmer & Chapman, 2012). Across these investigations, the findings were consistent: Listening comprehension, along with decoding, explained a large amount of the variance on reading comprehension measures (anywhere from 70%–100%; Hjetland et al., 2018; Hoover & Gough, 1990; Kershaw & Schatschneider, 2012; Kim, 2017; Lonigan et al., 2018).

Many other investigators also examined the capability of the SVR to explain factors that contribute to reading comprehension performance; however, there were striking inconsistencies across these investigations for the assessment of linguistic comprehension abilities. First, the investigators used assessment tools that did not align with the reading comprehension task. That is, the linguistic and/or language comprehension measures differed in content, style, and required responses from the reading comprehension task administered. Indeed, these assessment tasks assessed quite different skills. Furthermore, those listening and language comprehension measures varied notably from one another across investigations.

Measures of Language and Listening Comprehension

The second component of the SVR model, linguistic or language comprehension, has been assessed using a wide range of measurement tools; often, a battery of assessment tools has been administered. Many of these assessment batteries have included measurement tasks suggested to assess students' comprehension and/or production of vocabulary, grammar, and/or narratives. These skills often were referred to as (oral) language skills (e.g., Adlof et al., 2010; Braze et al., 2007; Catts et al., 2015; Kendeou et al., 2009; Kim & Phillips, 2014; Metsala et al., 2021), although they also were labeled as listening comprehension tasks by some researchers (e.g., Catts et al., 2005; Gottardo et al., 2018; Kim, 2017; Language and Reading Research Consortium & Chiu, 2018; Lonigan et al., 2018). Some investigators also assessed comprehension monitoring abilities, either in combination with their language comprehension tasks or alone; this ability often was labeled as a higher order language skill (e.g., Language and Reading Research Consortium & Chiu, 2018; Oakhill et al., 2003). Regardless of the number of tasks administered and the terms used to define them, there have been considerable inconsistencies in the *types* of measurement tools used to assess one or more aspects of

language and/or listening comprehension skills. Importantly, a large percentage of the tasks used to assess the second component of the SVR model assessed skills other than language and/or listening comprehension abilities.

Vocabulary. One task almost uniformly included when assessing language or listening comprehension has been some measure(s) of vocabulary (e.g., Catts et al., 2006, 2015; Language and Reading Research Consortium & Chiu, 2018); at times, it has been the only assessment tool used (e.g., Dickinson et al., 2003; Tighe et al., 2019). Students' vocabulary abilities have been assessed in a wide range of ways, including requiring students to point to a picture representing a word spoken by the examiner (e.g., Language and Reading Research Consortium & Chiu, 2018; Language and Reading Research Consortium & Logan, 2017; Lervåg et al., 2018), verbally label a presented picture (e.g., Bishop & Adams, 1990; Catts et al., 1999; Language and Reading Research Consortium & Chiu, 2018), identify relations among presented words (i.e., classes of words; Cutting & Scarborough, 2006; Language and Reading Research Consortium & Chiu, 2018), define words (e.g., Dolean et al., 2021; Nation et al., 2010; Savage, 2006), and/or provide synonyms for presented words (e.g., Cain & Oakhill, 1999; Catts et al., 2005; Language and Reading Research Consortium & Chiu, 2018; Language and Reading Research Consortium & Logan, 2017). In at least one study, the tool used to assess vocabulary required students to identify sentences that contained grammatical errors (i.e., Lonigan et al., 1998). Across these studies, the tasks used to assess vocabulary abilities have been labeled as measuring lexical skills (e.g., Cutting & Scarborough, 2006), semantic skills (e.g., Nation et al., 2004; Speece et al., 1999), semantic processing (e.g., Vellutino et al., 1996), verbal ability (e.g., Savage, 2006), expressive language (e.g., Lonigan et al., 2000), and verbal intelligence (e.g., Cain et al., 2004).

The assessment tools used to measure vocabulary do not represent how words are comprehended in written (or spoken) language contexts. For example, word definition and synonym tasks, often used to assess vocabulary skills, require active attention to words and their meanings. That is, students are required to verbally define words or think of semantically related words versus comprehend words within written texts. Even the prototypical vocabulary measure, the single word, receptive vocabulary test, does not assess receptive vocabulary as it occurs in written (or spoken) language. On such a task, an examiner typically utters a word and the student points to one of three or four pictures that potentially represents that word. This task does not mirror the skills used to understand vocabulary in written texts. Indeed, on such vocabulary measures, the semantic aspect of language is occurring in a vacuum; none of the other language components (e.g., syntax, morphology, pragmatics) that are crucial for understanding words are present (e.g., Bloom & Lahey, 1978). Instead, these types of assessment measures require students to consider or dwell on meanings of words without the supporting linguistic context typically found in written (and spoken) language contexts. Thus, all measures typically given to assess vocabulary skills do not represent how word comprehension happens within written language contexts. Instead, the various vocabulary measures require students to actively think about word meanings, related words, classifications of words, and so on. They are measuring semantic awareness abilities (e.g., Apel & Apel, 2011; Kuo & Anderson, 2008).

Syntax. Another frequently administered language comprehension assessment task has been some measure of "syntax" or "grammar" (e.g., Catts et al., 1999; Gottardo et al., 2018; Hjetland et al., 2018; Lervåg et al., 2018). The types of syntax tasks administered have varied greatly, including asking students to match an orally presented sentence to a picture representing that sentence (e.g., Bishop & Adams, 1990; Clarke et al., 2010; Language and Reading Research Consortium & Chiu, 2018), reorder individual words and/or word pairs to create grammatically correct sentences (e.g., Gottardo et al., 2018), create grammatically correct sentences based on a given single word (e.g., Cutting & Scarborough, 2006; Speece et al., 1999), complete given incomplete sentences to create grammatically correct sentences (i.e., cloze task; Lervåg et al. 2018; Lonigan et al., 2000), follow multistep commands representing different sentence structures (e.g., Adlof et al., 2006; Catts et al., 2006; Lonigan et al., 2018), and/or imitate or repeat a given sentence (e.g., Catts et al., 2005, 2012; Nation et al., 2010; Share & Leikin, 2004). Importantly, some investigators have questioned whether repetition tasks are a measure of language abilities given that (a) children can imitate sentence structures that they do not comprehend (e.g., McDade et al., 1982), (b) the association between repetition and reading comprehension is low and nonsignificant (Frizelle et al., 2017), and (c) repetition does not predict later language development (Klem et al., 2015). Instead, researchers have suggested it is a measure of working memory and/or phonological short-term or verbal working memory (e.g., Alloway & Gathercole, 2005; Hjetland et al., 2018). Regardless of what repetition tasks are measuring, those tasks, along with the other frequently administered measures of syntax used in investigations of the SVR model, have been described as assessments of: syntax or knowledge of syntax (e.g., Cain & Oakhill, 1999), syntactic processing (e.g., Vellutino et al., 1996), syntactic awareness (e.g., Metsala et al., 2021; Tunmer et al., 1988), morphosyntax (e.g., Nation et al., 2004), comprehension of complex sentences (e.g., Oakhill et al., 2003), grammatical understanding (e.g., Catts et al., 2006), expressive grammatical knowledge (e.g., Hjetland et al., 2018; Lonigan et al., 2000), receptive/expressive language (Catts et al., 2005), and

receptive grammar (e.g., Adlof et al., 2006; Hjetland et al., 2018).

These different types of syntactic assessment tools measure skills that go beyond students' abilities to use or comprehend grammar in natural spoken communicative contexts. For example, when asked to create a sentence based on a given word, a student must consider the meaning of the word and in what syntactic position it should be placed in a newly constructed sentence. In cloze tasks, when students are given a sentence context and/or a prompt to use a version of a word provided by the examiner (e.g., Sing. Billy is a ____), students must think about what related word completes the sentence in a syntactically (and much of the time, morphologically) appropriate way. The common factor across these and the other tasks used to assess syntax comprehension is the need to consciously attend to the rules of syntax; they all require the use of syntactic awareness skills (e.g., Brimo et al., 2018).

Narratives. A third common assessment used to investigate students' language or listening comprehension skills is a narrative task, either separately or as part of a language comprehension test battery (e.g., Catts et al., 2015; Kendeou et al., 2009; Storch & Whitehurst, 2002). When assessing narrative skills, investigators required students to produce a narrative and/or retell one provided by an examiner (e.g., Catts et al., 1999; Kim, 2017; Lonigan et al., 1998; Speece et al., 1999), and/or answer factual and inferential questions about a presented story (e.g., Catts et al., 2012, 2015; Hagen et al., 2021; Massonnié et al., 2019).

At first glance, the assessment of narrative skills to document the linguistic comprehension component of the SVR model makes intuitive sense. That is, individuals use their knowledge of narrative structure (i.e., story grammar; Stein & Glenn, 1979) to help process and understand narratives, be they written or spoken. Thus, such narrative assessment tasks seem much more aligned with the intended construct of the second component of the SVR. Indeed, when measuring students' narrative skills as a means to document their linguistic comprehension skills, the stories read to the students have, at times, been verbal versions of stories taken from reading comprehension measures (e.g., Adlof et al., 2006; Kim, 2017; Nation et al., 2010). Using this type of procedure, the measurement of the second component aligns with the basic requirement for the assessment of the model; the listening comprehension task only differs from the reading comprehension task by the reader of the narrative (i.e., the examiner vs. the student). However, not all studies involving narrative assessment used the same format for their linguistic and reading comprehension measures (e.g., Catts et al., 2015; Kim, 2017). In addition, when assessing narrative comprehension, the types of questions used to assess the skill have varied markedly, with investigators measuring understanding of the content and structure of the narrative and/or students' inferential and prediction skills (e.g., Kim & Petscher, 2021; Metsala et al., 2021). These latter questions decidedly assess students' abilities to more explicitly consider the information provided in the narrative. Importantly, the manner in which narrative retell is assessed (e.g., via cloze or a multiple choice tasks) can affect its relationship with reading comprehension (Cao & Kim, 2021). Finally, it is important to keep in mind that readers read more than narratives (e.g., Hoover & Gough, 1990). For example, they also read expository, persuasive, and poetic texts, to name a few (see Kim, 2019, and Lyster et al., 2021, for recent examples of an experimental expository task). Thus, narrative assessments only assess a limited genre of language that can occur in written texts.

Comprehension monitoring. Instead of, or in addition to, the aforementioned language or listening comprehension tasks, some investigators have assessed students' abilities to monitor their understanding of information during spoken or read passages (e.g., Cain et al., 2004; Kim, 2017; Language and Reading Research Consortium & Logan, 2017). These comprehension monitoring tasks have sometimes been labeled as assessing students' discourse comprehension (e.g., Catts et al., 2006), higher level language abilities (e.g., Language and Reading Research Consortium & Chiu, 2018; Language and Reading Research Consortium & Logan, 2017), and broader language skills (e.g., Nation et al., 2004).

The most common task used to measure comprehension monitoring involved stories, either examiners read stories to students (e.g., Language and Reading Research Consortium & Chiu, 2018) or students read stories themselves (e.g., Cain et al., 2004). The stories contained consistent and inconsistent information and the students were asked to state whether the information made sense throughout the stories. The inconsistencies represented alterations to the story structure (e.g., Oakhill et al., 2003; Wassenburg et al., 2015) or to the content of the story (e.g., Cain et al., 2004; Kim, 2017; Kim & Phillips, 2014). This type of task varies notably from measurements of narrative skills. To successfully complete such comprehension monitoring tasks, students were instructed to consciously think about whether the information in stories "fit" semantically and/or logically according to the story structure. This directed and overt comprehension monitoring procedure undoubtedly differs from the comprehension monitoring that happens in everyday reading of texts; the latter occurs at a more implicit level.

Importantly, many of the language and listening comprehension measures (i.e., vocabulary, syntax, narrative, and/or comprehension monitoring tasks) used to assess the second component of the SVR model have, along with decoding, explained a significant amount of performance on reading comprehension tasks. However, those tasks did not evaluate

that second component as originally prescribed (Gough & Tunmer, 1986; Hoover & Gough, 1990). The assessment tools administered required active, conscious thought on some aspect of language. In addition, the measurement tools typically did not mirror the type of tasks used to assess reading comprehension. Furthermore, many of the tasks required language production instead of, or in addition to, language or listening comprehension.

Regardless of whether the linguistic comprehension tasks were labeled as listening or language comprehension measures, and irrespective of whether the task(s) used to assess linguistic comprehension mirrored the reading comprehension task(s) administered, the findings across nearly all studies guided by the SVR model have been similar; the researchers' measures of decoding and linguistic comprehension explained a large amount of variance on their measure(s) of reading comprehension. This, then, begs the question, "What do all of the listening and language comprehension tasks have in common?" Put another way, "What explains the agreement in findings based on such disparate tasks and differing methods?" One might claim that the two questions are moot. Regardless of inconsistencies, some measure(s) labeled as assessing listening or language comprehension, along with a measure(s) of decoding, explained a large amount of performance on a reading comprehension task(s). However, to not pursue the answers to the two questions is not theoretically or educationally satisfying. A more concrete answer to address the disparities in tasks that have led to the same outcomes is needed. I argue that although the tasks and methods used often were dissimilar, there was a similar thread, or common skill, that was measured across these tasks, leading to the comparable findings across the many investigations. I propose that the common thread is that all the different measures required students to think about language rather than simply comprehend it (as what occurs during spoken conversations). That is, the tasks measured some aspect of students' metalinguistic skills.

Metalinguistic Skills

Metalinguistics means the awareness of language: the ability to actively and consciously think about language (e.g., Apel et al., 2012; ASHA, n.d.; Tunmer et al., 1988). Metalinguistic skills are measured using tasks that require students to actively or consciously think about one or more aspects of language. Importantly, for some time, different research teams have been investigating whether one or more metalinguistic skills predict reading (and spelling), including reading comprehension (e.g., Apel et al., 2012, 2013; Catts et al., 2015; Gaux & Gombert, 1999; Nagy et al., 2006). These researchers, for example, have studied the contributions of such language awareness skills as morphological awareness, syntactic awareness, and/or semantic awareness to reading comprehension (e.g., Apel & Henbest, 2016; Brimo et al., 2017; Carlisle, 2000; Deacon & Kieffer, 2018; Gaux & Gombert, 1999). The important point here is that the tasks used to assess those metalinguistic skills are similar, if not identical, to the tasks other researchers have specifically identified as measures of language and/or listening comprehension abilities when investigating the SVR model. Thus, the same tasks have been used but have been labeled as measuring different skills. Take, for example, some common tasks used to assess morphological and syntactic awareness.

Morphological awareness is the ability to consciously consider the smallest units of meaning in a language (e.g., Apel, 2014; Apel & Henbest, 2016; Carlisle, 2000; Wolter et al., 2009). For some time, researchers have shown that performance on different morphological awareness tasks explains some of students' performance on measures of reading comprehension, even when other linguistic awareness (e.g., phonemic awareness, orthographic awareness) and/or language abilities (e.g., vocabulary) are considered simultaneously (e.g., Apel et al., 2012; Goodwin et al., 2020; Li & Wu, 2015; Nagy et al., 2006).

One task frequently used to assess morphological awareness is a cloze task (e.g., Apel & Diehm, 2014; Apel et al., 2013; Carlisle, 2000). On these cloze tasks, students typically hear a word and then must complete a sentence with a form of that word (e.g., Bravery. I don't feel very ____). As noted earlier, the same type of cloze task has been used by researchers who report they are examining the contributions of language and/or listening comprehension to reading comprehension (e.g., Burgess & Lonigan, 1998; Language and Reading Research Consortium & Chiu, 2018; Language and Reading Research Consortium & Logan, 2017; Lervåg et al., 2018). On another task often used to assess morphological awareness skills, a suffix choice task (e.g., Nagy et al., 2006; Tighe et al., 2019), students read a sentence with a missing word and then choose the correctly affixed word from a list of four possible choices to complete the sentence (e.g., *Beth was not known for being _____: friendship, friendly, friendliness, friends*). Such a task also has been used to assess the contributions of language and/or listening comprehension to reading comprehension (e.g., Foorman et al., 2018). Thus, two different lines of research, one focusing on morphological awareness and the other on language and/or listening comprehension, are administering the same tasks and obtaining the same results. The difference is that when those types of tasks are said to assess language and/or listening skills, they are not. The morphological aspect of language is not being understood within a communicative context simultaneously with other language components (e.g., semantics, syntax, pragmatics; ASHA, n.d.; Bloom & Lahey, 1978). Instead, students are consciously thinking about morphology.

Other research teams have assessed syntactic awareness abilities and their contributions to reading comprehension. Syntactic awareness is the conscious ability to manipulate and reflect on the grammatical structures of language (e.g., Brimo et al., 2018; Cain, 2007). Studies targeting syntactic awareness have shown that students' syntactic awareness skills predict reading comprehension even when examined simultaneously with other linguistic awareness skills (e.g., Brimo et al., 2017; Deacon & Kieffer, 2018; Gaux & Gombert, 1999; Guo et al., 2011).

One common task used to assess syntactic awareness requires students to listen to and/or read a series of words presented out of order and then create a grammatical sentence from them (e.g., Brimo et al., 2017; Cain, 2007; Cain & Oakhill, 2007; Gaux & Gombert, 1999). Another frequently used task involves asking students to correct sentences that contain grammatical errors (e.g., Cain, 2007; Demont & Gombert, 1996). These tasks are identical to some measures used to assess language and/or listening comprehension skills as a means to validate the SVR model (e.g., Catts et al., 2002, 2003, 2006). However, these types of tasks are measures of syntactic awareness because they require active attention to syntax or grammar. The same tasks, though, are not effective measures of language and/or listening comprehension because they are not assessing comprehension of syntax simultaneously with all other language components present. The conscious attention to syntax required in those tasks represents a metalinguistic skill.

The important message, then, is that there are different lines of research, one attempting to assess language and/or listening comprehension abilities as guided by the SVR model and the other directly measuring various metalinguistic skills. These two research lines are using similar tasks and reporting similar significant contributions to reading comprehension. The difference is what the contributing skills are labeled. Contrary to what is proposed, the majority of the tasks used to assess the linguistic comprehension component of the SVR framework are measuring individuals' metalinguistic skills.

Why are these two different lines of research proceeding without any acknowledgment of the other? There are at least two possibilities. First, it may be that some researchers choose to follow the explanations of what publishing companies claim their tasks purportedly measure. Taking such a strategy can lead to the use of measures that do not represent the construct being assessed. For example, the Formulated Sentences subtest of the Clinical Evaluation of Language Fundamentals-5 (CELF-5; Wiig et al., 2013; see Note 1) is a frequently used "language comprehension" measure in studies based on the SVR model (e.g., Cutting & Scarborough, 2006; Lonigan et al., 2018; Speece et al., 1999). The CELF-5 lists this subtest, which requires students to generate a sentence from a provided word, as a measure of students' abilities to express complete and correct spoken sentences. However, such a task requires students to actively think about syntax (i.e., syntactic awareness) and produce language (vs. comprehend it). The description provided by the authors of the measure, then, does not match the skill assessed.

The different lines of research also may occur because there is confusion between language and metalinguistic skills. Language use and comprehension entails a focus on communication, with minimal to no active thought to language itself. Speakers and listeners are producing and comprehending communications that are spontaneous and involve the interaction of all components of language: phonology, morphology, semantics, syntax, and pragmatics. Minimal research is available on the relation of spoken language, as defined here, and students' reading comprehension skills; most researchers have used standardized measures reported to assess spoken language. To obtain a valid measure of spoken language, researchers need to collect a spontaneous language sample (e.g., Evans & Craig, 1992; Heilmann et al., 2010; Tomasello & Stahl, 2004). With this type of measure, individuals are spontaneously producing and comprehending spoken language in a communicative context rather than actively thinking about language. Paul et al. (1997) used a measure of spoken grammatical skills (i.e., the Developmental Sentence Score; Lee, 1974) taken from spontaneous language samples collected from children between 2 and 3 years of age to determine the relation of the children's spoken language skills to their reading comprehension abilities when they were in second grade. Paul et al. found that the measure of spontaneous language did not predict the children's reading comprehension skills.

Metalinguistic skills differ from spoken language abilities in that they necessarily involve some active attention to language. Tasks that require that conscious attention to language, then, are not measures of language ability; they are measures of language awareness or metalinguistic skills. Thus, all standardized measures that reportedly assess language are assessing metalinguistic skills to some extent, simply because they are not measuring spontaneously the simultaneous and interactive use or comprehension of all aspects of language in a naturalistic context (e.g., Apel & Apel, 2011; Kamhi & Catts, 2002). Standardized measures may differ somewhat in the degree to which they explicitly require students to think about an aspect of language. For example, it may be that asking students to change a given word into its derived form to complete a sentence is less explicit metalinguistically than requiring students to judge whether one word comes from another (Apel & Werfel, 2014). Nevertheless, unlike language samples taken from natural communicative contexts, standardized measures are assessing some level of metalinguistic ability because they require students to think about language rather than use or comprehend it spontaneously.

Regardless of what may be causing the two different research lines, they exist. One line of research is focused on the SVR model and the other has the specific aim of measuring the contributions of language awareness to reading comprehension. The two lines of research are mirroring each other in the measures administered and in their findings for how performance on those measures contributes to reading comprehension performance. They all are measuring aspects of students' metalinguistic abilities.

What about the investigations, aligned with the SVR model, which used spoken versions of reading comprehension measures to assess linguistic comprehension (e.g., Adlof, 2010; Braze et al., 2007; Hjetland et al., 2018; Tunmer & Chapman, 2012)? Are they assessing metalinguistic skills? In those investigations, students listened to spoken versions of the written text used for the reading comprehension assessment. Importantly, the language form and content in those tasks types of tasks differ notably from spoken language (e.g., Apel & Apel, 2011). As an example, the vocabulary of written text is much more unique and sophisticated compared with the vocabulary of spoken language (e.g., Ece Demir-Lira et al., 2019; Montag et al., 2015). Syntactic structures used in written texts are more complex (e.g., more embedded clauses) than those used in spoken language (e.g., Montag, 2019; Montag & MacDonald, 2015). Comprehension of the material, and making inferences about the topic, are solely the responsibility of the reader.

Because of these characteristics specific to written language, readers, or individuals hearing written text read aloud, likely need to think about some aspect of language to understand the information being communicated. For example, when encountering an unknown word, readers may need to actively think about the linguistic context in which the word occurs, such as considering the syntactic function the word holds (e.g., noun vs. verb), and/or determining the meaning of a derived word (e.g., musician) based on its base form (i.e., music). When reading complex syntax structures, much more prevalent in written than spoken language, readers may need to activate conscious thought on which noun serves as the subject within the sentence. There likely will be different levels of metalinguistic abilities used to comprehend written text depending on readers' experiences with the task of reading and/or the content and style of the text. Those readers, or listeners to written text read aloud, with minimal previous experience with text language likely will employ their metalinguistic skills to a greater degree to understand the information being communicated. The language style and form differs from spoken language and thus necessitates more active attention to it. However, even those individuals with much more experiences with written text will, at times, be required to implement their metalinguistic skills to comprehend particularly unfamiliar words and/or grammatical structures.

The differences in the language used in spoken conversations versus within written texts are not a minor issue, as suggested by some (e.g., Apel & Apel, 2011; Hoover & Gough, 1990). Even when written text is heard versus read, the hallmark characteristics of written language remain. Thus, the similar outcomes between investigations requiring students to listen to written texts to measure linguistic comprehension and studies that measured linguistic comprehension using vocabulary, syntactic, narrative, and/or comprehension monitoring tasks are occurring because of the need for students to employ their metalinguistic skills. Collectively, those results provide firm evidence that metalinguistic skills account for some level of performance on measures of reading comprehension (e.g., Adlof et al., 2010; Catts et al., 2015; Gottardo et al., 2018; Hjetland et al., 2018; Kim, 2017). Taken as a whole, then, across all investigations of the SVR model, metalinguistic abilities appear to be important contributors to reading comprehension. Given this notion, there are a number of theoretical and educational implications.

Theoretical Implications

Myriad investigations into the skills that contribute to reading comprehension, regardless of the theoretical compass followed by the researchers, point to the importance of metalinguistic skills for the reading comprehension process. For the SVR model, given that nearly all investigations guided by that theoretical framework have used tasks that require some degree of metalinguistic abilities, it appears further definition of the linguistic comprehension component of the model is warranted.

The linguistic comprehension component of the SVR model always has been somewhat of a hypothetical construct (Tunmer & Chapman, 2012). Multiple research teams have recognized this and sought to further define that component of the model or examine subskills underlying that construct (e.g., Kim, 2020; Massonnié et al., 2019; Metsala et al., 2021). Using varying terms, investigators have examined potential component skills or subskills of language or listening comprehension, including specifically identifying such contributing skills or subskills as vocabulary and grammatical knowledge (e.g., Kim, 2020; Metsala et al., 2021). Some researchers have included listening comprehension as a component of language comprehension (e.g., Metsala et al., 2021) while others have considered it to be a separate skill (e.g., Kim, 2019). The important point is that all of these research teams, whether they are assessing contributing factors to, or subskills of, language and/or listening comprehension, still are using the same tasks as those used in previous investigations of the SVR model. Thus, these models that further define or augment the SVR model are assessing metalinguistic skills, yet most of them are not labeling the tasks as language awareness measures.

Thus, it seems best that the SVR's second component, or analogous components of expanded versions of that model, be operationally defined as the abstraction or application of meaning via metalinguistic skills once decoding successfully occurs. If the second component is so defined, then it would acknowledge that meaning making for reading comprehension happens, at least in part, via the use of metalinguistic skills. Scientists already agree that different language awareness skills are applied to read words (e.g., phonemic awareness, orthographic awareness, morphological awareness, semantic awareness; Apel & Henbest, 2016; Castles et al., 2018; Griffith & Olson, 1992; Kim, 2017; Nation, 2019); those metalinguistic skills and others (e.g., syntactic awareness) also aid in understanding written sentences and discourse (e.g., Adlof et al., 2010; Apel & Henbest, 2016; Deacon & Kieffer, 2018; Goodwin et al., 2020; Ouellette, 2006; Zipke et al., 2009). This acknowledgment for the skills that comprise the second component of the model only serves to strengthen the model, binding together the data that support that idea from numerous investigations across two lines of research.

Acknowledging that it is metalinguistic skills that contribute to reading comprehension versus language or listening comprehension abilities does not mean that different measures would be needed when assessing the second component of the SVR. We already have strong evidence from multiple studies, across two lines of research, that metalinguistic abilities significantly predict reading comprehension (e.g., Braze et al., 2007; Brimo et al., 2017; Carlisle, 2000; Lervåg et al., 2018). I suggest, for future investigations, that researchers clearly identify which metalinguistic skill(s) their assessments are measuring and label them as such. As an example, if an investigator is administering a task that requires a student to rearrange words to create grammatically correct sentences, then it should be labeled a measure of syntactic awareness. Similarly, if a researcher uses a cloze procedure that requires students to complete sentences with morphologically related words, then the task should be labeled a morphological or morphosyntactic awareness task (see Note 2).

Labeling tasks by what they actually are measuring will solve two current issues. First, there will be greater uniformity and agreement on the skills different tasks are actually assessing, and similar tasks with similar labels can be used across studies. Second, similarly labeled tasks may help better determine whether certain individual metalinguistic skills contribute to reading comprehension or whether the different metalinguistic skills represent a more general construct that helps explain reading comprehension performance (e.g., Dolean et al., 2021). A review of past investigations of the SVR model suggests this latter notion may be true. When one takes a closer look at studies that reported that a large percentage of reading comprehension performance was explained by scores from the language and/or listening comprehension tasks administered (e.g., Hjetland et al., 2018; Kim, 2017; Lonigan et al., 2018), the metalinguistic skills tapped were not always the same. For example, Hjetland et al., Kim, and Lonigan et al. all administered semantic awareness (vocabulary) measures, but the actual tasks were not the same. All three used single word, receptive vocabulary measures, yet Lonigan et al. also administered tasks that required students to think about how words related to one another as well as to define words. All three studies administered syntax awareness measures, yet those tasks were not the same. Kim required students to repair incorrect syntactic constructions, whereas Lonigan et al. and Hjetland et al. asked students to judge whether sentences were syntactically correct or to complete sentences with syntactically correct words, respectively. Kim administered comprehension monitoring tasks while the other two research teams did not. Although the three research teams reported that anywhere from 86% to nearly 100% of the variance on reading comprehension measures was explained by their battery of tests, there was little uniformity in the tasks administered and metalinguistic skills assessed. In the future, by using similar terms to label tasks administered, it may be possible to obtain a better understanding of which metalinguistic skills best account for reading comprehension performance. By further understanding those contributing abilities, our knowledge of the skills that support reading comprehension will advance.

The key point here is that there is no need to change the direction of investigations of the SVR or related models to consider how spoken language, the simultaneous use of all five language components to communicate, contributes to reading comprehension. Instead, it is important to acknowledge the true nature of those consistently identified contributors to reading comprehension. That is, a new SVR framework is not necessarily needed; rather, researchers need to identify accurately what their measures of that the model's second component are assessing (i.e., metalinguistics). In doing so, that will allow two separate lines of research to be joined. By recognizing the two common lines of research, it likely brings us closer to determining effective instruction and intervention approaches for improving reading comprehension.

Educational Implications

There are direct educational implications when we acknowledge that the two different lines of research have been assessing the same essential abilities, metalinguistics, and that language awareness skills are an essential component to the process of reading comprehension. For example, given assessment drives intervention, practitioners working with students with poor reading comprehension abilities (i.e., students with reading disabilities) not only will assess those students' reading comprehension skills; they also will want

to assess their metalinguistic skills. To do so, practitioners will have two choices. First, they can administer the same standardized measured they have been using to assess "language" (e.g., CELF-5; Wiig et al., 2013) but understand what metalinguistic skills they actually are measuring. They also could seek out measures that are explicitly labeled as measuring language awareness skills from the research literature. By specifically assessing the various language awareness skills that contribute to reading comprehension, a more prescriptive approach to treatment can be undertaken.

Instructional and remedial practices for improving students' reading comprehension skills also will be affected by acknowledging the contributions of metalinguistic skills to understanding text. Currently, it is common for researchers and practitioners to implement reading comprehension instruction/intervention with the aim to increase students' skills for a number of reading comprehension strategies (e.g., graphic organizers, comprehension monitoring; e.g., Gersten et al., 2001; Nesbit & Adesope, 2006). This type of instruction, focused on metacognitive skills, appears helpful and the time allotted to that instruction need not be lengthy (e.g., Castles et al., 2018; Willingham, 2006). However, these treatment approaches do not address the second component of the SVR model.

Recognizing the need to target the second component of the SVR model to improve reading comprehension skills, a number of researchers have conducted treatment studies they suggest target the language or oral language abilities that support reading comprehension. Skills targeted within these different "language-based" treatment studies have included direct instruction on vocabulary (e.g., Bowyer-Crane et al., 2008; Clarke et al., 2010; Fricke et al., 2017; Proctor et al., 2020; Wasik et al., 2006), phonological awareness (Fricke et al.), morphology and syntax (e.g., Proctor et al.), letter-sound knowledge (Fricke et al), narratives (e.g., story grammar; Bowyer-Crane et al.; Clarke et al.; Fricke et al.), discussions about texts read (e.g., Proctor et al.), active listening (e.g., Fricke et al.; Wasik et al), and figurative language (e.g., Clarke et al.), to name a few. Importantly, the treatment targets often were based on the skills being assessed for the specific intervention rather than a theoretically driven model that recognizes the contributions of metalinguistic skills to reading comprehension. Likely because of this, there were mixed findings regarding the effect of these purported language-based interventions on improving students' reading comprehension skills. Indeed, results of a recent systematic review (Rogde et al., 2019) and a meta-analysis (Silverman et al., 2020) regarding the effect of "language-based" instruction on reading comprehension suggested minimal to no improvement, particularly when measuring reading comprehension using standardized measures.

Teaching the skills identified through a standardized should not be an option (i.e., teaching to the test; Kamhi & Catts, 2017). Such an approach takes time away from more meaningful and prescriptive instruction/intervention (e.g., Higgins et al., 2006; Welsh et al., 2014) and does not address the strengths and weaknesses students may have in various language awareness abilities (e.g., Connor et al., 2014). Until further evidence is acquired regarding the impact of teaching language awareness skills as part of a reading comprehension instruction, practitioners must use theoretically based instruction. Such an approach would acknowledge that language awareness skills are important contributors to successful reading. By following this viewpoint, practitioners can use current research findings from investigations focused on improving language awareness skills as an important component of their reading instruction. Adopting the viewpoint of the importance of metalinguistic skills for reading comprehension also is important for researchers interested in studying effective instructions that help students with poor reading comprehension abilities improve those skills. Given the evidence from two different lines of research that demonstrates the important contributions of multiple metalinguistic skills (e.g., phonological awareness, morphological awareness, syntactic awareness) to reading comprehension, then instruction that includes a focus on these *multiple* language awareness skills seems a suitable target. There is a small number of investigations that have examined the effect of a multilanguage awareness intervention (e.g., treatment targeting simultaneously morphological awareness, semantic awareness, syntactic awareness, and/or orthographic knowledge) on the improvement of students' literacy skills. Some of these studies, most of which have been conducted with primary elementary age students, have shown that when treatment addresses a number of different language awareness skills, students' word-level and spelling (e.g., Apel et al., 2004; Gillon & Dodd, 1995; Kirk & Gillon, 2009; Wolter & Dilworth, 2014) and reading comprehension skills (Wolter & Dilworth) improve. These preliminary findings hold promise for future investigations of the effect of a multilinguistic awareness intervention on increasing students' reading comprehension skills.

Summary

I wrote this reflection paper on the SVR framework because of what I perceived were misunderstandings and misuse of terms and constructs, as well as for the tasks used to assess those confused terms and constructs. I acknowledge, as others have (e.g., Catts, 2018; Nation, 2019), that the SVR likely does not represent completely the complex nature of reading comprehension, such as how students take the information gleaned from texts and develop a coherent mental representation or model of the materials to be understood (e.g., Kim & Phillips, 2014; Kintsch, 1998, 2005).

Nevertheless, to best understand the contributors to reading comprehension, it seems important to acknowledge that metalinguistic skills play an important role. This is particularly important when implementing educational practices that are guided by the SVR model or other theoretical frameworks that represent an expansion of the model (e.g., Kim, 2020; Metsala et al., 2021).

In sum, most tasks used in the past to assess the second component of the SVR model, linguistic comprehension, have measured different aspects and levels of students' metalinguistic skills. This commonality among tasks explains similar findings across investigations that used tasks that differed in number and type. In the future, with an agreement for which metalinguistic skills are being measured, it seems a greater understanding of the contributors to the reading comprehension process will be achieved. Undoubtedly, future research endeavors and practice applications will benefit from this understanding.

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Notes

1. Different versions of the Clinical Evaluation of Language Fundamentals (CELF) have been used over the years.
2. It is important to note that some researchers have stated that certain language and/or listening comprehension tasks they administered were actually measuring metalinguistic skills (e.g., Menyuk et al., 1991; Metsala et al., 2021; Speece et al., 1999; Tunmer et al., 1988). These acknowledgments, though, have been rare.

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