

CODE AND COMPREHENSION
IN WRITTEN LANGUAGE –
CONSIDERING LIMITATIONS TO THE SIMPLE VIEW
OF READING

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Abstract. The Simple View of Reading (SVR) was introduced by Gough and Tunmer in 1986 as a model to predict reading comprehension by means of two factors: decoding and linguistic comprehension. Over time, the SVR has acquired the status of a definition of reading, and it counts as a starting point for both research and teaching programmes for reading. In the present manuscript an attempt is made to maintain Gough and Tunmer's (1986) original purpose of the SVR by discussing potential problems that arise when the SVR is applied beyond its original intention. This is done by means of a critical look at some core assumptions of the SVR. The basic argument put forward is that the SVR – with its two factors for prediction – provides teachers with no understanding of how reading develops in a society dominated by texts. The article presents some perspectives on how a focus shift in the use of the SVR could be brought about rather than claiming to provide a new, consistent framework.

Keywords: code, reading comprehension, listening comprehension, simple view of reading

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1. INTRODUCTION

In the past few decades, the Sociocultural Turn in reading pedagogy has criticised cognitive perspectives for viewing reading as an individual psychological process (Street, 1984). This criticism has not included proposals for adjustments to the cognitive view but rather formed an ideological antithesis. The distance between the two positions has given rise to various initiatives aiming to, as it has often been phrased, “bridge the gap”, based on the claim that an integration of social and cognitive perspectives would benefit reading research and instruction (Verhoeven & Snow, 2001). The ambition to bridge the gap gives rise to a few central questions: what should we keep, how should the insights from the two camps be combined, what is missing and what should be added? In this article we wish to retain Gough and Tunmer’s (1986) original intention for what has since become a prominent view of “reading”: the *Simple View of Reading* (SVR). Our starting point is similar to that of Paris and Hamilton (2009), who claim that “[t]he simple model is appealing because it is both parsimonious and comprehensive in the isolation of code breaking skills from meaning making skills. However, it is worth unpacking the two factors in the simple model to identify some hidden problems” (p. 34). When they proposed the SVR, Gough and Tunmer clearly delimited its purpose and its scope:

We begin by noting that the issue we wish to discuss is not that of the place of decoding in reading instruction. The issue of whether and how to teach decoding (the great debate of Chall, 1967) is certainly interconnected with the issue of the role of decoding in skilled reading and reading disability, but it is not the same issue. (Gough & Tunmer, 1986, p. 6)

On the basis of their claim that the presence of decoding is the only important difference between reading and listening, Gough and Tunmer present a quasi-mathematical formula including the two factors of decoding and linguistic comprehension:

reading comprehension = decoding × linguistic comprehension

This Reading Formula (Hoover & Gough, 1990) has attained a strong position internationally in the field of reading research and instruction. Reading is apparently the “product” of decoding and linguistic comprehension: “What this suggests, then, is that reading can be divided into two parts; that which is unique to reading, namely decoding, and that which is shared with auding, namely comprehension” (Gough, Hoover & Peterson, 1996, p. 2). It is stressed that there is a reciprocal dependency relationship between decoding and linguistic comprehension, entailing that if one factor tends towards zero, the product – reading – will also tend towards zero: “Both skills are necessary, neither is sufficient” (Gough, Hoover & Peterson, 1996, p. 3). There are two particular reasons for discussing the Reading Formula in the light of the question of what reading is. First, this formula can be considered as the explicit formulation of basic assumptions underpinning the study of reading in the context of cognitive psychology over the past decades: it ties in well with the work of a generation of reading researchers and teachers. Second, its mathematical presentation creates the impression that it is an authoritative framework for how the phenomenon of

reading should be understood. It is a powerful conceptualisation which can be understood by anyone who masters simple mathematics.

Historically, the term “reading skill” was discrete in nature – it referred to something that a person either had or lacked. The distinction between “basic” and “functional” literacy, introduced by Gray in 1956, can be claimed to have ushered in a period during which factors affecting the outcome of reading have been emphasised. Since the 1950s, researchers in different fields have studied the reading process and brought about both gradual and dramatic transformations of the domain (Pearson & Stevens, 1992).

Kirby and Savage (2008) described the SVR as a way to bring together the polarised sides of the Reading Wars: Phonics versus Whole Language; and as a first attempt at what is now called “balanced literacy” (Pressley, 2002). The SVR was formulated at the end of what Alexander and Fox (2004) call the Era of Information Processing (approx. 1976–1985). In this period, Goodman’s view of reading as a “psycholinguistic guessing game” (Goodman, 1967) was heavily criticised, and both beginners and experienced readers were shown to process graphic information thoroughly (cf. Adams, 1990; Lundberg, 1981). Gough and Tunmer’s (1986) Reading Formula acknowledged perspectives from both sides. Their view of decoding can clearly be understood as a result of the research initiatives in this period, but their view of comprehension is perhaps not as representative. The Era of Natural Learning (approx. 1966–1975) had focused on similarities in the acquisition, development and use of spoken and written language. By contrast, in the Era of Information Processing the distinctive features of written language and text-based factors came to play a central part – and those characteristic features are not evident in the SVR, given that Gough and Tunmer start from the assumption that – beyond graphic-word recognition – listening and reading require essentially the same processes.

In the further historical development, Alexander and Fox (2004) describe a new turn from the mid-1990s. In the Era of Engaged Learning, the view of reading as an either cognitive, aesthetic or socio-cultural activity is set aside and the new protagonist, the “engaged reader”, is described as “a reconciliation of information-processing and socio-cultural perspectives of the last decades” (Alexander & Fox, 2004, p. 52). In this period, the traditional notion of “text” (as printed text read in a linear manner) is extended to non-linear, interactive, dynamic and visually complex materials. It is also acknowledged that the reading process is influenced by the purpose of reading. It is underscored that the search for understanding involves an integration of cognitive and motivational forces, which in turn results in a renewed interest in strategic processing. Guthrie, McGough, Bennet and Rice (1996) describe engaged readers as *motivated* to read on the strength of a variety of personal goals, *strategic* in using multiple approaches to comprehend, *knowledgeable* in their construction of new understanding from text, and *socially interactive* in their approach to literacy. This new developmental perspective on reading extends beyond the early elementary-school years into adolescence and adulthood.

This turbulent historical background described by Alexander and Fox (2004) must be kept in mind whenever the SVR is used as a view of reading today.

2. SVR – A MODEL FOR PREDICTING READING ABILITY

One source of confusion in relation to the SVR is its inclusion of the term “view”: this (unlike, say, “model”, “theory” and “assumption”) is not a well-defined, established category that could help the reader identify the status of the SVR. A close reading of the texts in which the concept of the SVR is established (Gough & Tunmer, 1986; Hoover & Gough, 1990; Gough, Hoover & Peterson, 1996) provides us with a few leads – even though some of them are potentially inconsistent with each other – as to the conceptual status of the SVR.

Hoover and Gough (1990) indirectly characterise the SVR as a model by contrasting it with “[...] a more complex model” (p. 150; they refer to the model proposed by Calfee and Drum (1986)). The word “simple” in the name also makes sense in relation to the concept of “model” to those familiar with the distinct components of scientific theories: hypotheses, models, basic assumptions, etc. Further, the SVR exhibits several characteristics of a model. First, it aspires to give a simplified description of a complex phenomenon: “The simple view does not deny that the reading process is complex. [...] The simple view simply holds that these complexities can be divided into two parts” (Hoover & Gough, 1990, p. 128); and it “asserts that such complexities are restricted to either of the two components” (p. 150). Second, the SVR can be used to make and test predictions: “The strength of the simple view of reading, in addition to its simplicity, is that it has allowed a set of non-trivial and testable predictions” (Hoover & Gough, 1990, p. 157). Indeed, throughout their work to establish the SVR Hoover and Gough (1990) are exemplary in making their premises and inferences explicit. In doing so, they also draw attention to any unclear and implicit points in their chain of arguments. The main theme of their writings is that the SVR is a way of grasping a more complex phenomenon, which represents a conceptual task of central importance to any scientific enterprise. Models are not normally verified or falsified – rather, they are typically evaluated as being more or less suitable tools for making predictions and formulating hypotheses. When Hoover and Gough (1990) object to more complex models, their arguments resemble those typically used to find suitable models: they value simplicity and ability to yield testable predictions. Further, when they discuss more complex models, Hoover and Gough (1990) are open to the potential of those models: “Answers to these questions await further research” (p. 151).

On the other hand, Gough, Hoover and Peterson (1996) make a claim that may contradict our entire interpretation as presented above of the SVR as a model for grasping complexity when they say that it also ties in with a natural distinction: “What this suggests, then, is that reading can be divided into two parts; that which is shared with auding, namely listening, and that which is shared with reading, namely comprehension. The division is natural, we are cutting nature at its joint” (p. 2). The last part of this quotation represents a very strong ontological claim and unfortunately makes it unclear whether the authors really are as open to new conceptualisations as they say in other parts of their writings.

A model is based on a number of basic assumptions, of which many cannot be challenged by data. Most of the arguments presented in support of the SVR are based on the power of prediction that it has manifested, and there is much less dis-

cussion of the assumptions underpinning the SVR (and alternative assumptions to them). This is something that we would like to attempt to remedy in this paper. We will present some reflections concerning basic assumptions. The aim is not to prove the SVR to be false, but to highlight a few aspects that may make it necessary to tone down the claims about the usefulness of the SVR. This aim is considered to be in line with the original intention for the SVR: as a model for predicting reading ability.

2.1 *Decoding*

The basic problem of the Reading Formula is twofold: the very specific character of the “decoding” factor and the vagueness of the “comprehension” factor. Gough and Tunmer (1986) state that they are “reluctant to equate decoding with word recognition, for the term decoding surely connotes, if not denotes, the use of letter-sound correspondence rules [...] But we firmly believe that word recognition skill is fundamentally dependent on knowledge of letter-sound correspondence rules, or what we have called the orthographic cipher” (p. 7). As we see it, the notion of “decoding” builds on a specific understanding of “code” as something which is relatively inaccessible and which is created for a specific purpose, such as military codes. This understanding of “code” – which is implicit in expressions such as “breaking” or “cracking” the code that are used about reading – implies a need for translation to and from the code. By contrast, Høien and Lundberg (2000) restrict “decoding” to purely technical matters: “Decoding is the technical side of reading: seeing a string of letters and knowing that they represent, say, the word *nation*. Decoding involves the ability to exploit the alphabetical principle, or code, in order to decipher written words” (p. 5). This understanding of “code” differentiates between spoken and written language by considering spoken language as “language” and written language as “code”. According to this reasoning, spoken language is acquired as a natural human language, while the acquisition of written language is a matter of mastering a code and is thus qualitatively different from the acquisition of human languages.

Even connectionist approaches to reading represent no more than small variations on the same conception of “code” (Adams, 1990); their contribution can be said to be found in the refinement of the notion of “decoding” as carried out in neural networks. However, the notion of “decoding” relies on the same notion of “code”. From our perspective, connectionist positions such as that of Adams (1990) are best suited for questioning the notion of “code” with respect to consistency.

This vague notion of “code” is linked to the concept of “linguistic” in the cognitive paradigm. In this tradition, there is an enduring distinction opposing “linguistic” to “visual” – probably as a reaction to earlier research on reading problems being based on hypotheses concerning visual anomalies. In this tradition, “linguistic” refers to spoken language; when reading is identified as a “linguistic” skill, it is with reference to a phonological system, not to visual skills: “First, it is well to underscore the nature of the reading process itself and to point out that reading is primarily a linguistic skill, contrary to traditional views that vision is the dominant system in decoding words in print” (Vellutino, 1979, p. 329). What Vellutino does here is to

introduce a “linguistic turn” in reading research, but he seems to be so eager to draw a line against traditional linguistic descriptions of spoken language that he may actually be throwing the baby out with the bathwater by discarding relevant aspects of vision:

Indeed, in closely examining the basic functions involved in learning to read it becomes clear that this enterprise taxes the visual and linguistic system unequally. The reason is not only that the learner is required to process three different types of linguistic information (semantic, syntactic and phonologic) and only two types of visual information (graphic and orthographic) but because he has to remember a good deal more about the linguistic attributes of words than their visual attributes – a contention supported by the fact that in reading, the visual symbols are stationary, which in effect necessitates only discrimination and not reproduction of the graphic counterparts of words. A word’s linguistic constituents, in contrast, must be reproduced as well as discriminated. Stated differently, reading essentially requires recognition of or familiarity with the visual components of words in print, but it requires recall or reproduction of their verbal components. Recall involves the recollection of much more detailed information than recognition (Underwood 1972); it would therefore seem that the reading process places greater demands on verbal memory than it does on visual memory. (Vellutino, 1979, p. 329)

This line of reasoning might be used to argue against visual deficits as causes of reading disorders, but as a basis for the focus on “linguistics” and phonology in research on speech, writing and dyslexia – where it persists as the state of the art – it is too vague. First, the simple way of counting and subtracting “types” of “linguistic” and “visual” information and making inferences from raw numbers is problematic, because the status of “semantics”, “phonology” and “syntax” as isolated components in the human mind has not been validated. The distinction between “graphic” and “orthographic” shares the same problem. Second, Vellutino’s (1979) argument concerning memory is based on an *a priori* isolation of what is “visual” from what is “linguistic” and can therefore not be considered as evidence but rather as a consequence of the *a priori* assumption that spoken language is superior to written language in most important ways. It is a fact that this superiority issue has been discarded in the cognitive paradigm. An alternative would be to search for a way to include “visual” in the notions of “linguistics” and “language”.

Hoover and Gough (1990) claim that decoding is reserved for reading and is therefore not applicable to listening. Spoken language, consequently, is not “code”. This point of view is grounded in the firm belief that, because written language emerged later in human history (phylogenetically), it must be secondary to spoken language in terms of acquisition and processing (ontogenetically). Current research on the relationship between written and spoken language is based on the assumption that written and spoken language may have a similar phylogenetic status (Chafe, 1994). However, this position must also be treated as a hypothesis. On this view, spoken and written language are both acquired as human languages, although in a different order and to varying degrees of proficiency in the individual. We then no longer conceive of “language” versus “code”, but of language in both cases.

This means that we may see the acquisition of written language as similar to the acquisition of a second language. What an individual acquiring a second language is trying to do is to understand a language. We may well include a notion of “code” – but then in the (approximate) sense of “performance” – in a new definition of “lan-

guage”: *a set of codes with potential for meaning* (Uppstad & Tønnessen, 2010). This notion of “code” is indebted to insights drawn from Bernstein’s early work on language codes (Bernstein, 1972) in that the code is intrinsically constituted by social interaction. However, it differs from Bernstein’s notion of “code” in that it denotes the expression itself, not primarily the social structures. When it comes to our use of the term “potential”, it should be underscored that this does not mean that the code lacks meaning, nor that it has a defined, original meaning, and nor that there is a final, ideal meaning to be reached. Instead, it is intended to emphasise that meaning is dynamic and indeterminate, and that it is associated with overt language behaviour. According to this reasoning, “code” cannot be isolated from “meaning” (and “understanding”) – as is claimed in the Reading Formula. Recognition of the code and association of meaning are two sides of the same issue.

This use of “code” corresponds, to a large extent, with how it is used in research on “code-switching” in second-language acquisition – where it refers to bilinguals’ use of words from their second language in their first language, and *vice versa*. It is evident that linguistic skills acquired through the (spoken) mother tongue are important when learning a second language. However, it is highly disputed how important they are, and especially how they interact with each other. This point is well argued in the recent rethinking of linguistic relativity (Gumperz & Levinson, 1996; Slobin, 1996) and to some extent in cognitive-functional grammar. An empirical enterprise could be to investigate spoken and written language at a behavioural level – both product and process – in order to build a theory about the relationship between spoken and written language. This has, to some extent, already been done through the study of how language unfolds in real time, for instance as regards pauses in speech and writing (Strömqvist, 2000).

2.2 Comprehension

“Beyond the point of word recognition, listening and reading appear to require essentially the same processes”, according to Gough, Hoover and Peterson (1996, p. 2). Hoover and Gough (1990) claim that the comprehension component of the Reading Formula is similar for reading and listening and that only the decoding component is unique to reading. However, it is only when written language is “decoded” (translated) into “language” (phonology) – see the discussion of the notion of “phonology” in Uppstad & Tønnessen (2007) – that the comprehension component comes into play in the same way as for listening:

Comprehending a text includes such processes as connecting the text to one’s own experiences and frames of reference, drawing conclusions from the text, formulating interpretations of it, and the like. This kind of thought process is, in principle, the same kind of process that one engages in when listening to another person read aloud. (interpretation of Hoover & Gough (1990) by Høien and Lundberg, 2000, p. 5)

Gough and Tunmer (1986) define “linguistic comprehension” as “the process by which given lexical (i.e. word) information, sentences and discourses are interpreted” (p. 7). It is, however, important to keep in mind how comprehension is measured in the SVR: as reading comprehension and as listening comprehension with a writ-

ten text read aloud to the listener without the features of discourse and interaction that are characteristic of speech (Wagner, Uppstad & Strömqvist, 2008). The text thus read aloud also lacks characteristics typical of spoken discourse such as redundancy, and it will probably use the vocabulary and syntax of written discourse wherever there are differences. The use of similar, monological texts in two different channels (graphic and auditive) as the basis for measuring reading comprehension and listening comprehension in the SVR makes it possible to control for any other differences. However, this also illustrates the kind of comprehension that the SVR addresses (which in this article is considered to be a strong argument for restricting the SVR to prediction purposes): a severely restricted kind which does not in any way include perspectives on how an individual arrives at comprehension or what influences an individual's comprehension.

In reality, there is no useful simple answer to what comprehension is: this question requires a complex answer. The hermeneutic tradition provides us with one way of grasping the process of understanding, for instance through the idea of hermeneutic circles. This approach does not exclusively favour rationality but encompasses subjective and emotional aspects of the process of comprehension as well.

Gough, Hoover and Peterson (1996) do mention that there exist differences between comprehension in reading and listening, respectively, but they claim that these differences are minor compared with the *similarity* of processing in the two modalities. Of the various differences they point out, what is of particular interest here is the following quote: "The availability of the materials for integration differs as well. In print, the previous sentences remain on the page, and the reader can return to them at will. But speech is ephemeral, and the external evidence of previous sentences is lost; the reader must rely on memory" (p. 2). We thus see that Gough, Hoover and Peterson, like us, consider temporal conditions. Their grounds, though, are different from ours, and therefore they do not arrive at the same conclusions.

When it is claimed in the SVR that comprehension is similar for a text you read and a text you listen to, no account is taken of the fact that the reader is able to control the speed of the text and his or her spatial location in it while the listener is bound by the reader-aloud's choices. Hoover and Gough (1990) emphasise that linguistic (listening) comprehension and reading comprehension must be tested by parallel materials, in principle with auditive versus visual input as the only variable parameter:

it is important to note if the simple view of reading is to be adequately tested, parallel materials must be employed in the assessment of linguistic comprehension and reading comprehension (e.g. if narrative material is used in assessing linguistic comprehension then narrative, as opposed to expository, material must also be used in assessing reading comprehension). (pp. 131–132)

Functional literacy involves the ability to read a variety of text types. According to our reasoning, the differences in the conditions for production and perception between reading and writing have given rise to different genres in speech and writing, and a graphic code may represent challenges where listening comprehension is less

useful. Reading a timetable, for instance, is a central skill in becoming a functional reader. However, nobody would expect a person to be able to “comprehend” a timetable by having it read aloud.

3. ASPECTS OF A DISCURSIVE MODEL FOR READING INSTRUCTION

Comprehension involves cognition, and the different temporal conditions of reading and listening may impose different constraints on cognition and thus on comprehension. These arguments are central to the positions of “thinking-for-speaking” (Slobin, 1996) and “thinking-for-writing” (Strömquist et al., 2004), where different temporal conditions impose different constraints on cognition in written and spoken language. In our context, we claim that Slobin’s and Strömquist’s expressions could relevantly be paraphrased as *thinking-for-listening* versus *thinking-for-reading*. These concepts might make it possible to operationalise important aspects of the process of comprehension with regard to written and spoken language. The idea is that we need to identify both commonalities of and differences between different linguistic activities. Such identification should involve the empirical study of variation and behaviour according to modality. This means that we should search for those fields where the differences have a greater impact than the commonalities.

Continuing our reasoning on the basis of our proposed definition of “code”, we consider it possible to claim that there are two different codes involved in reading and listening: a graphic code and an articulated code. Both codes are included in our definition of “language”. Seen from this theoretical point of view, reading is a realisation of (some of) the potential of the graphic sequence, and listening (auding) is a realisation of (some of) the potential of the articulated sequence. On this view, the process of comprehension in reading and listening has commonalities but is in principle different. The argument for this is similar to the basic assumption of cognitive-functional grammar, where the development of language and language structure is considered to be dependent on communication and cognition. However, this argument from cognitive-functional grammar is not usually highlighted in the literature when it comes to written language, except in relation to the thinking-for-writing argument (Strömquist et al., 2004).

From a commonly used perspective, it can be said that language use involves either production (speaking and writing) or perception (listening and reading). In this paper, the focus is on what we normally call perception: listening and reading. However, the argument suggested holds for what we normally call production as well. From a theoretical point of view, writing is a realisation of (some of) the potential for meaning in a graphic code. Speaking is a realisation of (some of) the potential for meaning in an articulated code.

While there certainly are interesting insights to be found in the distinction that we usually make between production and perception in an oversimplified communication model (cf. Shannon, 1948), the most relevant question is whether this dichotomy is the best way to distinguish among speaking, writing, listening and reading. One reason for asking this question is that all of these activities can in fact be said to rely on an interplay of production and perception. Therefore, an important question

in our reasoning is whether the main dividing line should be the traditional one between production and perception, or whether it is in fact more fruitful to establish a primary distinction according to code, that is: between spoken and written language. In other words: in a study of reading, should we focus more on the connection between *reading and writing* than on the connection between *reading and listening*? We believe so. The main reason for focusing more on the connection between reading and writing is that these two activities share temporal constraints and communicative conditions.

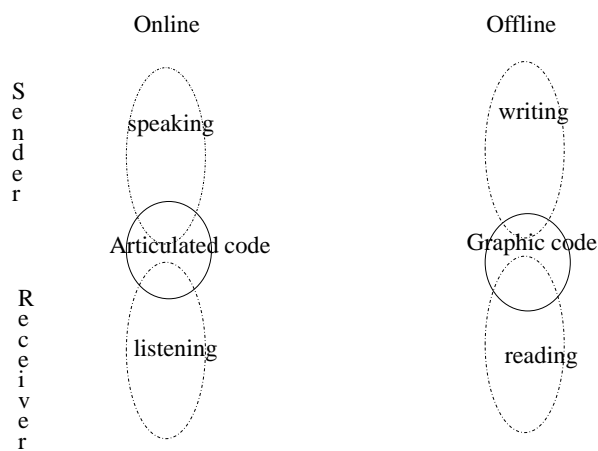


Figure 1. Presentation of a hypothesised relationship between different linguistic skills. The figure is based on a definition of “language” as “a set of codes with potential for meaning” (Uppstad & Tønnessen, 2010). Dotted lines in the figure represent the realisation of potential for meaning. Realisations of the two relevant types of code (articulated and graphic) differ with respect to the constraints on communication (on-line and off-line) and therefore also with respect to the constraints on cognition. The notions of “sender” and “receiver” are included in the figure to indicate the traditional horizontal pairing of skills.

In a textual tradition oriented towards rhetoric, it is common to make the principal division horizontally (Figure 1). What we are asking is whether the principal division should in fact be made vertically in the figure instead, according to code. Our position builds on a processual view of language (Strömqvist et al., 2004). In many ways, it stands in contrast to traditional reading and writing research, which is based mainly on a product view of language. Our processual view of language is characterised by the thinking-for-writing argument, where thought is interwoven with writing in an intricate way. While processual approaches can be found in traditional reading and writing research as well, their concrete effect is mainly to split the process of writing or reading into a series of products. It is our conviction that any one-sided focus on products will favour static perspectives, and our ambitious goal is to search

for models and definitions that may uphold dynamic perspectives. In a product view of language, the phenomena of *listening* and *reading* are conceived of as aspects of perception, as the perception of products, which are presented to a *receiver*. Likewise, *writing* and *speaking* are equated in that both are seen as aspects of production. However, according to the theoretical positions of thinking-for-speaking (Slobin, 1996) and thinking-for-writing (Strömqvist et al., 2004), cognition in speaking differs from cognition in writing because of the absence of on-line constraints on communication in writing.

We are aware that the focus on cognition in our reasoning may represent a more deterministic or stronger interpretation of linguistic relativity than the positions of Slobin and Strömqvist et al. Our interpretation must be treated as a hypothesis; in this context, however, it should be emphasised that one of its strengths is the fact that it *can* be exposed to attempts at falsification. It is clear that the positions of Slobin and Strömqvist must involve some determinism as regards communication modality, because they have modality in focus when explaining differences in output. Our proposed position represents a moderate determinism in claiming that written and spoken language have different conditions for production and reception, and therefore also for understanding. The distinction between production and perception and the equation of listening comprehension with reading comprehension both represent too simple a view of how comprehension is achieved. These categories focus only on some aspects of a simple view of communication, by identifying a sender and a receiver, and they do not encompass the characteristics of written language. Instead of focusing on the crude roles of “sender” and “receiver” and on the crude activities of “production” and “perception”, it is preferable to focus on the interplay between production and perception in all roles. This point is inherent in the idea of the hermeneutic circle, but it cannot be operationalised in a distinction between “production” and “perception”. In fact, what the reader does involves both production and perception, and so does what the writer does. This holds for the listener (and the speaker) as well, but the relationship between perception and production in spoken communication is different because of the temporal constraints. Reading and writing are thus considered together because they are governed by similar off-line constraints of communication. To sum up, instead of reading and writing being separated into production and perception, we suggest that reading and writing should be distinguished from speaking and listening because of the different temporal constraints on processing.

4. IMPLICATIONS FOR RESEARCH AND EDUCATION

The Reading Formula has exerted, in different ways, a strong impact on the discussion about reading instruction and the screening of reading difficulties. Based on their own findings, Gough, Hoover and Peterson (1996) argued – in contrast to Gough and Tunmer (1986) – that the two separate components of reading should be taught separately. The renowned scholar Stanovich (1994) has taken the same position.

The Reading Formula has also supported a primary explicit focus on decoding in teaching, with comprehension being emphasised later on. Gough, Hoover and Peterson (1996) claim that children's comprehension is well developed at the age when reading instruction starts, and because the comprehension component is common to reading and listening, the correlation between decoding and reading will be high at the beginning but weaken as decoding becomes automatised. In the same way, comprehension will show an increasing correlation with reading as texts become more demanding: "[...] the correlation between decoding and reading will decrease across the grades, while the correlation between listening and reading will increase across the same time span" (Gough, Hoover & Peterson, 1996, p. 6).

In the literature about reading difficulties, the Reading Formula has acquired a central position because of its functionality for the identification of various reading disorders. The most common reading disorder is characterised by low scores for both decoding and comprehension while more specific reading disorders are associated with discrepancies between decoding and comprehension scores: "[...] three kinds of reading disability can be distinguished; a deficiency in decoding (the dyslexic), a deficiency in comprehension (the hyperlexic), and a deficiency in both processes (the garden variety)" (Gough, Hoover & Peterson, 1996, p. 4).

One feature common to these central aspects of the Reading Formula is that decoding and comprehension are conceived of as components that can be isolated. While it would seem reasonable to assume that there are multiple sub-processes to be co-ordinated when a person is to understand a graphic code (Samuels & Kamil, 1984), the question is whether it is wise to characterise these processes as isolated dimensions when considering issues other than the prediction of reading ability. Our main objection is that doing so says nothing about how comprehension comes about. From our point of view, it is unfortunate for the scientific discourse to claim, as Gough, Hoover and Peterson (1996) do, that this distinction is natural. In contrast to this strong claim, Kirby and Savage (2008) suggest that we should "not consider the simple view as a full theory of reading nor a blueprint for instruction" (p. 75). It is better to see the SVR "more as a brief, abstract account of elaborate and complex phenomena. If you will, more like a postcard from your trip to China than a full presentation and analysis of your experiences in China" (Kirby & Savage, p. 75).

In his review of the literature on the SVR, James V. Hoffmann (2009) is in line with the statement from Kirby and Savage quoted above concerning the limitations of the model:

This review of the reading comprehension literature suggests that the simple view of reading and reading comprehension is inadequate as a theoretical framework for understanding reading, inadequate as a useful guide for the design of curriculum, inadequate in its power to guide instruction, and inadequate in the way it is being used to shape educational policy. (p. 63)

Instead of talking about students "cracking the code", we could say that knowledge about links between sounds and letters *puts students on the track of written language*. This latter metaphor focuses on the way ahead while the first one focuses on a task accomplished once and for all. Both metaphors clearly refer to the initial stages of reading instruction. Kirby and Savage (2008) characterise the SVR as "[...] a

good predictor of future performance in [reading comprehension] over the first 4 years or so of reading acquisition” (p. 76). It is clear that the Reading Formula has less predictive power when it comes to skilled readers who have automatised their decoding and have a rich experience with written texts. Skilled readers exploit their knowledge of the constraints unique to written texts far more effectively than poor or beginning readers with limited experience with written texts who have not yet fully automatised their decoding skills. With increasing use of knowledge about written language, a person will follow a path of comprehension which diverges from that of spoken language, although the one who is walking the path remains the same in the sense that the individual always carries along his or her experiences. In other words, becoming a skilled reader means mastering constraints on comprehension that differ from those you must master to become a skilled speaker. Over time, readers encounter texts that put stronger demands on their skill at exploiting the characteristics and advantages of written texts. Pressley (2002) asserts that strategic reading is seen a prerequisite for successful reading comprehension, and the concept of “strategic reading” is most often associated with the successful exploitation of the specific constraints characterising written language and with effective compensation for the differences between comprehension of written text and comprehension of spoken text. For instance, to compensate for the lack of immediate context that would typically exist in the case of spoken communication, a reader may take an overview over the text and have a look at the illustrations and headers. The developmental path of reading includes the acquisition of increasing knowledge about such characteristics of written texts.

The major challenge following from the growing impact of the SVR in the field of reading instruction is that the SVR’s assumption that linguistic comprehension and reading comprehension are equal may obscure the insight that oral and written interaction typically take place under different conditions, and this may cause teachers to pay less attention to the unique demands that written text places on a student. The process of understanding may be similar for a text read aloud and a text read silently, but that does not mean that oral and written interaction are the same.

Equating listening comprehension and reading comprehension – as operationalised in the SVR – blurs the facts that (a) students are typically alone when they try to understand a written text while the oral “texts” they have encountered are characterised by interaction with others, (b) the written texts are more difficult than the oral texts they normally encounter (as regards lexicon and syntax), owing to the particularities of the conditions for the production of written language, and (c) written language is used for other purposes than spoken language. All of these conditions for comprehension are key issues in reading instruction. A strong focus on the similarities of comprehension in aural and reading may cause these aspects to be marginalised in teachers’ minds and thus in instructional settings. As Paris and Hamilton (2009) put it: “the simple view fails to identify the developmental relations between [decoding] and [linguistic comprehension], and the [Reading Formula] reduces to two simple claims: 1) comprehension is minimal when decoding is low, and 2) when decoding is very good, comprehension is a function of [linguistic comprehension] skills” (p. 35). However, if we manage to restrict the function of the SVR in the scientific and educational discourse to that of a model for predicting reading ability,

then we create room for a new conceptualisation of reading instruction that is grounded in discourse and in conditions that are important for how we understand. By emphasising the conditions that influence comprehension, we may move the focus away from word recognition and a limited conception of comprehension to functional aspects of literacy. This would allow us to expand the object of study and connect it to disciplines focusing on language, culture and cognition. Hoffmann (2009), who belongs to the field of reading-comprehension research, appears to agree:

The simple view inflames the political climate for teachers and literacy instruction and discourages thoughtful research and reflective practice. In promising so much for so little, the simple view appeals to the policy community and marginalizes more complex representations of comprehension that could better guide instructional innovations. (p. 63)

5. CONCLUSION

The central claim of the SVR, that reading comprehension differs from linguistic comprehension only by the factor of decoding, is tailor-made for the situation of beginning readers. Indeed, the predictive power of the SVR is best documented for this group (Kirby & Savage, 2008). The suggestion made in this article is to maintain the original idea of the SVR as a model for predicting reading ability. This suggestion is not at all unique, and it should not be too controversial given that it is in line with Hoover and Gough's (1986) original intention as well as with established positions in the reading-comprehension literature (Hoffmann, 2009; Paris & Hamilton, 2009).

Any decent criticism will suggest alternatives. In the present article, we offer some alternative perspectives to the basic assumptions of the SVR from the perspective of functional linguistics. These alternatives should be considered as hypotheses. Only research can show whether they are useful in practice. In this sense, the present article aims more to elaborate a hypothesis than to defend a thesis. Work of this kind is always partly critical, partly creative.

Both reading instruction and the remediation of reading difficulties require powerful conceptual tools emphasising the aspects that *influence* comprehension – beyond decoding. In the context of this discourse, where the SVR is widely applied, we agree with Kirby and Savage (2008) when they say: “most importantly, we need to emphasise what the SVR is not” (p. 80).

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