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Research on good and poor reader characteristics: Implications for L2 reading research in China

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Abstract

In reading research, studies on good and poor reader characteristics abound. However, these findings remain largely scattered in applied linguistics and cognitive and educational psychology. This paper attempts to synthesize current theory and research on the topic in the past 20 years along 3 dimensions: language knowledge and processing ability, cognitive ability, and metacognitive strategic competence. A profile of good readers follows a review of the literature. With a special reference to second language (L2) reading research and pedagogy in China, the author argues that a key difference between first language and L2 readers is that L2 readers typically have a gap between their L2 proficiency and their knowledge or conceptual maturation, and this tension determines to some degree the characteristics of good versus poor L2 readers. By examining L2 reading research in the country, the author proposes some areas worth exploring in the Chinese context.

Keywords: good and poor readers, L2 reading comprehension, research areas in L2 reading in China

Proficiency in reading involves many variables, for example, automaticity of word recognition, familiarity with text structure and topic, awareness of various reading strategies, and conscious use and control of these strategies in processing a text. While a substantial body of literature has been accumulated on these issues in both first language (L1) and second language (L2) reading, the findings remain scattered in many diverse pieces of research, mainly within the fields of applied linguistics and cognitive and educational psychology. This paper reviews current theory and research on the topic and then presents a profile that summarizes the characteristics of good readers in both L1 and L2 contexts. The studies identified have been mainly carried out in the past 20 years or so. They reflect some major issues and concerns in reading research. A discussion of research and pedagogical implications follows with special reference to the Chinese L2 context.

In the current literature exploring reader behavior either directly or indirectly, a variety of terms have been used to delineate different types of readers. These dichotomous modifiers include *proficient* versus *less-proficient*, *successful* versus *unsuccessful*, *fluent* versus *non-fluent*, *skilled*

versus *unskilled*, and *fast* versus *slow*. While in most cases these terms are used interchangeably by various authors, this paper adopts a more holistic dichotomous pair of *good* versus *poor* readers because terms like *fluent* and *non-fluent* can refer to some specific attribute of reader behavior. Using a more general term has the advantage of encompassing various specific attributes of the reading comprehension process. The labels of *good reader* and *poor reader* as used here are certainly not conclusive terms because good or poor reading behavior is only evoked depending on various factors such as the time of reading and the complexity and the topic of a text. Therefore, readers exhibit characteristics that may be good or poor at different times and to varying degrees on different dimensions. Labeling them as *good* or *poor* is only a relative and idealized conceptualization of desirable or undesirable reading behavior. For that reason, the good and poor reader dichotomy is better viewed as being situated on a continuum with extremely good readers at one end and extremely poor readers at the other. The concept of poor readers as used here refers to normal individuals in comparison with other normal readers in their reading proficiency; it does not refer to readers classified as dyslexics.

The sections that follow focus on good reader characteristics and discuss poor characteristics only when necessary to clarify the good characteristics. Many variables are related to the topic, such as situational and personal factors; however, this paper is limited to a discussion of readers' abilities in terms of three dimensions: linguistic, cognitive, and metacognitive. Linguistic knowledge and processing ability refer to readers' formal knowledge of vocabulary, syntax, and discourse and their abilities to use this knowledge in their interaction with texts. Cognitive ability is concerned with readers' use of prior knowledge and various strategies in their efforts to construct meaning in the comprehension process. Metacognitive strategic competence reflects readers' monitoring and control of reading strategies. The boundary between the latter two abilities may not always be clear-cut (Cohen, 1998), and they both represent conscious actions taken by readers to understand and interpret the text. All three layers of ability can be seen as arranged in a hierarchy with linguistic knowledge and processing ability as a foundation layer in which cognitive and metacognitive abilities have important roles to play. They should also be seen as interacting with one another simultaneously when a reader attempts to construct a coherent mental representation of textual input during the comprehension process.

Language Knowledge and Processing Ability

Good L1 Readers

A general consensus in reading research is that linguistic knowledge and ability play a prerequisite role in the comprehension process. In word recognition, a huge body of research, mainly from the fields of cognitive and educational psychology, using sophisticated computer and eye-tracking technologies, has repeatedly indicated that the process at this level is rapid, accurate, and automatic in good readers (Just & Carpenter, 1987; Pressley, 1998; Rayner, 1997; Stanovich, 2000; West, Stanovich, & Cunningham, 1995). For example, research by Just and Carpenter (1987) discovered that good readers process over 80% of content words and 40% of function words on the page. They also found that one factor that distinguishes good from poor readers is the automaticity of word recognition. Booth, Perfetti, and MacWhinney (1999) also claimed that good readers are proficient in word recognition skills. In their study, readers were

required to react to non-word primes and target words presented to them for a certain duration of time. They learned that good readers activated letter and phonemic information more efficiently than poor readers and that this activation was achieved automatically without strategic control. Pressley (1998) also noted that when good L1 readers are reading to learn material they read about 200 words per minute. But when they read in a more relaxed manner, they read at a rate between 250 and 300 words per minute, which translates to about four to five words per second. Furthermore, good readers typically do this in an effortless manner without resorting to guessing or making use of context and background knowledge.

Thus, the general view is that rapid processing and automaticity in word recognition is a fundamental requirement for fluent reading. This view is consonant with an earlier position expressed by Stanovich (1980) when, after a review of a large number of studies, he questioned hypothesis-testing models (see Goodman, 1967; Smith, 1973):

> [The hypothesis-testing models] require implausible assumptions about the relative speeds of the processes involved. . . . It seems unlikely that a hypothesis based on complex syntactic and semantic analyses can be formed in less than the few hundred milliseconds that is required for a fluent reader to recognize most words. . . . Fluent readers do not use conscious expectancies to facilitate word recognition. (pp. 34–35)

Perfetti (1985) elucidated the importance of automaticity in word recognition by saying that decoding and comprehension compete for available short-term memory capacity. Good readers are able to use less capacity to analyze visual stimuli, allowing for more cognitive processing capacity to be directed to comprehension processes at other levels.

In comparison with solid findings at the word recognition level in good L1 readers, research is relatively scarce on other aspects of linguistic knowledge readers have. Research seems to have concentrated on readers' vocabulary knowledge and the effects of text organization on readers' comprehension processes. For vocabulary, Alderson (2000) noted that the vocabulary size of good L1 readers ranges from 10,000 to 100,000 words. Readers' vocabulary knowledge highly correlates with their proficiency level in reading and is "the single best predictor of text comprehension" (p. 35). While not specifically referring to good readers' vocabulary size, Grabe and Stoller (2002, p. 77), in their review of other studies, also noted that L1 readers finishing secondary school have a large recognition vocabulary in the range of 40,000 words and that good readers can recognize 98–100% of all words in a text at some basic meaning level. For basic linguistic processes, Carver's rauding theory (1992) claimed that an approximate rate of 300 wpm is most efficient for typical college students across a wide range of difficulty levels of reading materials. Carver argued that it "would not seem appropriate for good readers to adjust their rate as materials decrease in difficulty, because it would be inefficient to do so" (p. 85). Readers maximize their efficiency of reading a prose text by maintaining the optimal rate (Carver, 1993). To sum up, the size of a vocabulary, together with an ability to rapidly and automatically recognize words, is an important predicator of fluent reading comprehension.

Knowledge of text type and organization is believed to have a facilitative effect on reading comprehension. Commander and Stanwyck (1997) reported on a study that investigated the comprehension monitoring of expository text in adult L1 readers. One of their findings was

concerned with the recall of superordinate and subordinate ideas in short and longer texts. They found that good readers demonstrated more accurate recall of superordinate ideas regardless of text length than poor readers did. For recall of subordinate ideas, however, while good readers did better than poor readers on short texts, poor readers outperformed good readers on longer texts. Commander and Stanwyck suggested that good readers have a good knowledge of structural elements of text and therefore have more accurate recall of the main ideas in the text. Poor readers, on the other hand, focus on details at the expense of missing main ideas. Beck, Mckeown, Sinatra, and Loxterman (1991) investigated the effect of varied text structures on reading comprehension. They revised school history texts based on a cognitive processing perspective (e.g., clarifying, elaborating, making given and new information more explicit). By asking students to answer comprehension questions and do free-recalls of the texts, they found that students understood the revised text much better than the original version. Their result demonstrates the positive role of familiarity with discourse organization in enhancing the reader's comprehension processing. These findings are in agreement with the results of some earlier studies (e.g., Meyer & Rice, 1982, 1984).

Good L2 Readers

Much like research findings for good L1 readers, a considerable number of studies in the L2 setting have pointed to the even more important role of language knowledge and processing ability in good L2 readers (Fraser, 2004).

In a study of higher-level and lower-level text processing skills in advanced reading comprehension in English as a second language (ESL), Nassaji (2003) found lower-level processes like word recognition, in addition to higher-level syntactic and semantic processes, contributed significantly to the distinction between skilled and less-skilled ESL readers. He concluded that efficient lower-level word recognition processes are integral components of L2 reading comprehension, and these processes must not be neglected even in highly advanced ESL readers. Poor L2 readers are slower in word recognition and generally weak at rapid and automatic syntactic processing because they "develop an overt knowledge of L2 grammatical structures before they become fluent L2 readers" (Grabe & Stoller, 2002, p. 23). Chen (1998), in his *proficiency constrained model* of Chinese readers of English as a foreign language (EFL) in comprehending ambiguous English sentences, demonstrated that poor L2 readers are particularly weak in processing more complex ambiguous sentences. He held that this weakness resulted from their lack of syntactic knowledge in the target language, which constrained their reading comprehension. Parry (1991) conducted a detailed longitudinal study of four college students learning vocabulary in an academic setting over 2 years. One of her findings was that guessing word meaning from context is not a successful strategy in students' vocabulary development. Although her study was not initially aimed at discovering characteristics of good readers, Parry's study did reveal that in respect to vocabulary growth, successful readers guess less but simply read much more, thus exposing themselves to many more words in meaningful contexts. As for vocabulary size for fluent L2 reading in the Dutch context, Hazenburg and Hulstijn (1996) maintained that an L2 Dutch reader needs a minimum of 10,000 headwords to read university-level texts successfully.

At lexical and syntactic levels, Barnett (1986), by using a recall procedure, examined

intermediate-level English-speaking readers' abilities to comprehend a French text. She found that readers' recalls increased in accordance with their levels of vocabulary and syntactic proficiency. She pointed out that both syntactic and vocabulary proficiency affect reading comprehension but unduly stressing vocabulary-building or inferencing skills may not help those students who lack adequate syntactic knowledge (p. 346). Chen's (1998) study of Chinese college EFL readers' comprehension when processing simple ambiguous sentences revealed little difference in comprehension between good and poor readers. However, good readers performed much better than poor readers in processing more complex ambiguous sentences. An L2 reader's linguistic proficiency is therefore a key factor that constrains the reader's text comprehension. The Chinese college EFL readers can be considered to belong to an L2 intermediate proficiency group with a vocabulary size of about 3,000–4,000 words. Liu and Bever (2002) also involved Chinese EFL college students as participants in their experiment to investigate the role of syntactic analysis in reading comprehension. One of their findings was that good readers did not exhibit apparent effort to use syntactic analysis in their comprehension processes. They accounted for this result by claiming that good readers were able to process sentences in a quick and subconscious manner because of their high L2 proficiency. In contrast, poor L2 competence can severely constrain the development of readers' abilities in cognitive and metacognitive strategy use, thus affecting their reading comprehension.

In looking at inference generation during reading comprehension, a number of researchers (e.g., Barry & Lazarte, 1998; Hammadou, 1991; Lu, 1999) have claimed that L2 readers' language proficiencies have a direct impact on inference generation in L2 reading. For example, Hammadou reported that readers with high L2 proficiencies were much better at making appropriate inferences than readers with low language proficiencies. In addition, only readers with high language proficiency were successful at identifying causal structures in the text. Lu, after studying a group of five Chinese EFL learners' processes of reading expository texts using think-aloud protocols, also claimed that L2 linguistic proficiency had a decisive effect on inference generation and on the construction and integration of propositional meaning at both the sentential and discoursal levels.

As in good L1 readers, a knowledge of discourse organization contributes positively to reading comprehension in the L2 context. According to Carrell (1985, 1987), when the content is kept constant but the rhetorical structure is varied, good L2 readers recognize the discourse structures much better than poor readers, which helps good readers significantly in their understanding of text. In another study by Carrell (1992), 45 high-intermediate ESL students in an American university participated. They were presented with two texts of different discourse organizations; after reading, they were each required to provide a written recall and to explain the discourse pattern of the texts. She observed that the good readers were those who were more aware of the discourse organization of the original texts to recall information and who could also better describe the patterns of the texts. This study further validated the facilitative role that discourse organization plays in L2 learners' reading comprehension. Good readers are more sensitive to the structural elements of the text, which helps them to remember the main idea of the text and comprehend better (Commander & Stanwyck, 1997).

Cognitive Ability

Good L1 Readers

Recent reading research and practice have witnessed a shift of focus from texts to readers and their reading strategies (i.e., a *reader-centered* approach to reading research). This focus has led to a better appreciation of readers' reading processes and their uses of strategies in decoding and building mental representations of texts.

The two terms *skills* and *strategies* can be confusing. However, a *skill* is generally accepted to be an acquired ability that operates largely subconsciously, whereas a *strategy* is a conscious procedure carried out to solve problems in the comprehension process. The relationship between *skills* and *strategies* has been expounded on by Paris, Wasik, and Turner (1991), who claimed that "an emerging skill can become a strategy when it is used intentionally. Likewise, a strategy can 'go underground' and become a skill" (p. 611). Carrell, Gajdusek, and Wise (1998) provided a summary of strategies proposed by some of the major studies in the area (e.g., Block, 1986; Carrell, 1985, 1992; Hosenfeld, 1977; Zvetina, 1987).

In a study involving high and low achievers, and by implication, good and poor readers, Hopkins and Mackay (1997) found that good readers often have more ready access to a variety of purposeful reading strategies to undertake reading tasks successfully and that they use them with greater frequency and flexibility. They are active in making inferences and using dictionaries to resolve uncertainty about the meanings of words or larger units of discourse. Long, Seely, Oppy, and Golding (1996) conducted an experiment to examine the relationship between reading ability and inferential processing. Their results indicated that good readers encode knowledge-based inferences that poor readers fail to encode and that good readers are able to construct representations that are consistent with the topic of a text.

Good readers appear to learn and recall more important text information using a selective attention strategy. Reynolds, Shepard, Lepan, Cynthia, and Goetz (1990) reported two experiments that investigated the reasons for the good readers' recalling and learning advantage. Their results showed that good readers are able to learn and recall more important information because they are more aware of how and when to use this selective attention strategy. They are also able to use significantly more *conceptual attention* in relation to *perceptual attention* while reading.[1] In examining the roles of reading processes and prior knowledge in college students' reprocessing of expository text, Haenggi and Perfetti (1992) found that while text reprocessing helped average readers to compensate for language shortfalls in answering text-implicit questions, good readers combined more text information with their prior knowledge bases. Prior knowledge was found to be relatively more important than working memory for explicit and implicit information. In a strategy training study that focused on guiding learners to become strategic readers rather than users of individual strategies, Brown, Pressley, van Meter, and Schuder (1996) were able to show that the greater strategy awareness and use by readers, the better their performance in reading comprehension. They demonstrated that good readers, by orchestrating strategies in a flexible manner as strategic readers, were able to provide more elaborate interpretations of a text. Grabe and Stoller (2002) made a convincing observation regarding autonomous processing in readers:

> Using strategies effectively does not typically involve conscious decisions on the part of the fluent reader. Strategic readers are able to verbalize consciously the strategies that they use when asked to reflect, but they usually do not think consciously of these strategic choices because they have used them effectively so often. (p. 82)

Good L2 Readers

Interest in reading strategy studies is mainly derived from instructional research, and this is particularly true of the fields of ESL and EFL. Researchers and teachers recognize that strategy training is an effective way of improving reading and that good readers are strategic readers.

Since the late 1970s, many researchers have studied strategies in L2 contexts (e.g., Anderson, 1991; Block, 1986, 1992; Carrell et al., 1998; Hosenfeld, 1977, 1984; Sheorey & Mokhtari, 2001). As one of the pioneering researchers in L2 reading strategies, Hosenfeld used the think-aloud protocol and attempted to create inventories of good versus poor reading strategies based on a series of studies (1977, 1984). Some examples of her good reading strategies are (a) keeping the meaning of the text in mind, (b) reading in broad phrases, (c) skipping inessential words, (d) guessing from context the meaning of unknown words, (e) having a good self-concept as a reader, (f) reading the title and making inferences from it, and (g) continuing if unsuccessful at decoding a word or phrase (Hosenfeld, pp. 233–234).

In a much quoted study on comprehension strategies of L2 readers, Block (1986) found that four characteristics differentiated good from poor readers. They are (a) integration; (b) recognition of aspects of text structure; (c) use of general knowledge, personal experiences, and associations; and (d) response in extensive versus reflexive modes. When in a reflexive mode, readers tend to shift their attention away from text information towards themselves in an affective and personal way. When readers focus on the author's ideas expressed in the text instead of relating the text to themselves personally and affectively, they are said to be in an extensive mode. Good L2 readers react to a text in an extensive mode by integrating information and monitoring their understanding consistently and effectively. Other good L2 reader characteristics in terms of strategy use include the use of meaning-based cues to evaluate what they have understood, a focus on intersentential consistency, and the maintenance of an evaluative and critical attitude towards the text (Block, 1992).

The use of prior knowledge to aid reading comprehension in good readers is also recognized as a factor in comprehension (Bernhardt, 1991; Brantmeier, 2004; Haenggi & Perfetti, 1992; Spires & Donley, 1998). Alderson and Urquhart (1985) found that a discipline-specific text on content knowledge affects the measure of reading comprehension. Chen and Graves (1995), in a study on the effect of providing background knowledge before reading with university students ($N = 243$) in Taiwan, also provided evidence of the positive effect of background knowledge on EFL learners' reading comprehension. However, some studies have also documented cases where poor L2 readers often wrongly used their prior knowledge to compensate for their target language deficiencies (e.g., Lu, 1999).

Strategy use does not differ much across L1 and L2 reading, and both good L1 and L2 readers

report using more strategies than poor readers (Block, 1986; Sheorey & Mokhtari, 2001). This observation was echoed by Anderson (1991) in his claim that good L2 readers use many more total strategies than poor readers. If anything is special and unique in L2 reading strategy use, it is the use of the L1, a strategy that is often considered undesirable in L2 reading comprehension. Reading in the L2 is certainly not a monolingual matter. Upton and Lee-Thompson (2001) asserted that L2 readers, more than doing mental translation, actively tap their mother tongue resources to help them "wrestle with and reflect on meaning as they read an L2 text" (p. 471). They posited that "as L2 proficiency increases, the supportive (i.e., beneficial) use of the L1 increases, while at the same time the cognitive reliance on these strategies (i.e., the need to think about the text in the L1) declines" (p. 488).

By the "supportive use of L1," the authors meant that when the L2 reading comprehension process is generally automatic, reliance on the L1 only occurs when processing shifts from automatic to controlled, that is, when a reader encounters difficulties in understanding. Kern (1994) made a similar observation after he studied mental translation as a reading strategy in the L2. While admitting that mental translation could be a strategy of poor L2 readers, he observed that this strategy helps L2 readers to simplify processing demands, better solve comprehension problems, and gain accurate comprehension of the text. L1 and L2 reading performance significantly correlate. Pichette, Segalowitz, and Connors (2004) reported on a study on the impact of maintaining L1 reading skills on L2 reading skill development in adult speakers of Serbo-Croatian learning French. Their study shows that maintaining L1 reading enhances the transfer of reading skills. From the above discussion, good L2 readers may also be said to be skillful users of their L1s in that they are well aware of when and how to turn to an L1 for help to maximize text comprehension. Thinking in an L2 while reading is not impossible and is even desirable; nonetheless, it would be unusual for good readers not to use their mother tongues to aid comprehension if a need exists.

Metacognitive Strategic Competence

Good L1 Readers

Flavell (1978), the first to propose the concept of metacognition, viewed it as consisting of two dimensions: knowledge of cognition and regulation of cognition. Carrell et al. (1998) elaborated on this:

> In reading, the two key metacognitive factors, knowledge and control, are concerned respectively with what readers know about their cognitive resources and their regulation. Regulation in reading includes the awareness of and ability to detect contradictions in a text, knowledge of different strategies to use with different text types, and the ability to separate important from unimportant information. (p. 101)

Examples of specific metacognitive strategies may include (a) establishing objectives in reading, (b) evaluating reading materials, (c) repairing miscomprehension, (d) evaluating the developing understanding of text, (e) analyzing the text and paragraph structure to clarify the author's intention, (f) adjusting reading speed and selecting cognitive strategies accordingly, and (g)

engaging in self-questioning to determine if the objectives have been reached (Carrell et al., 1998, pp. 100–101). Thus reading is a metacognitive process as well as a cognitive process. While cognitive strategies refer to deliberate actions that readers take in their efforts to understand texts, metacognitive strategies emphasize the monitoring and regulative mechanisms that readers consciously use to enhance comprehension.

In a study that investigated whether knowledge of cognition affected regulation of cognition, Gregory (1994) asked a group of college students to complete a reading comprehension test and at the same time to monitor their local (i.e., during testing) and global (i.e., after testing) performance. He found that good readers (self-appraised high monitors, in the author's term) performed much better on the comprehension test and were more confident and accurate when evaluating their test performance both locally and globally, indicating a positive effect of knowledge of cognition on reading performance. Gregory concluded by claiming that most college students possessed metacognitive knowledge but a large proportion failed to use this knowledge to improve their on-line regulation of performance. In another study, Karen and Evans (1993) investigated the use of the selective rereading strategy to regulate understanding. Students were presented with texts containing referential and factual coherence problems, and their reading time and text memory were examined. The authors found that all students detected textual problems and reread sentences with coherence problems longer. However, in contrast to poor readers who reread more than good readers, good readers were better able to selectively direct their rereading to text coherence problems and had better text memory than poor readers. Long and Chong (2001) investigated good and poor readers' maintenance of global coherence during reading. They disconfirmed the hypothesis that poor readers fail to maintain global coherence because they fail to activate prior text information. Instead, their result showed that poor readers activated relevant knowledge during reading but failed to integrate it into their developing representations of the input text.

Current research findings on good readers seem to converge on the belief that good readers are strategic. Strategic readers are able not only to use various strategies skillfully but also to monitor and regulate their strategy use with reference to the on-going comprehension process.

Good L2 Readers

Comprehension monitoring competence is particularly crucial in the L2 context. With limited linguistic knowledge, L2 readers often have to use more cognitive strategies to decode the meaning of text, and at the same time, comprehension monitoring is critical to ensure effective and efficient use of strategies.

Yang and Zhang (2002) reported on a study that investigated the correlation between metacognition and EFL reading comprehension of Chinese college students. Third-year college students ($N = 125$) participated in the study that examined metacognition, EFL reading comprehension, and EFL proficiency. The authors found that the readers' general EFL proficiency correlated with their reading comprehension ability at .50 ($p < .01$) and that their metacognitive knowledge correlated with their reading comprehension ability at .42 ($p < .01$), indicating a positive correlation between metacognitive knowledge and reading comprehension proficiency. Their study also revealed that good readers displayed more monitoring ability than

poor readers during their on-going reading processes. For example, good readers tended to monitor their reading processes all the time to compensate for words that had not been previously decoded. They also appeared to be more sensitive to inconsistencies in the text than poor readers and responded to them appropriately. The authors concluded that English language proficiency and metacognitive awareness affect reading comprehension ability in Chinese college EFL readers. Also, readers' metacognition has an impact on both EFL proficiency and EFL reading performance. When discussing the relationship between vocabulary and metacognitive knowledge in the L2 context, Schoonen, Hulstijn, and Bossers (1998) asserted that vocabulary knowledge has a greater influence on L2 reading than on L1 reading. This is especially the case at the lower level of processing. However, when L2 readers reach higher proficiency levels, metacognitive knowledge begins to play a greater role in comprehension.

A reasonable conclusion is that good L2 readers, apart from a sound L2 language base, need a high degree of metacognitive awareness to make their comprehension processing more efficient and effective.

A Profile of Good Readers

The above discussion indicates that many good reader characteristics are common to both L1 and L2 readers. Although L1 and L2 reading have differences, which Grabe and Stoller (2002) have convincingly identified, the fact that many more characteristics are shared than not between the two types of good readers is reasonable: Good L2 readers seem to make every effort to approximate the linguistic proficiency and repertoire of skills and strategies found in good L1 readers. A profile of good readers based on the interpretation of the previous literature on three dimensions is presented in Table 1.

When proposing a profile of good readers, I acknowledge the similarity of characteristics between good L1 and L2 readers. However, I argue that the demands placed on them to reach the goal of being good readers are different. To begin with, a good L2 reader must have a sound target language base that often takes much more time and effort to form than it does for L1 readers. In other words, L2 readers need to cross the so-called language threshold to be able to develop and apply cognitive and metacognitive strategies in the L2 reading context. At this point, they will also be able to take advantage of being conceptually well-developed adults and make full use of the cognitive and metacognitive strategies already acquired in their L1 to compensate for the possible deficiencies in their L2 and to achieve maximum comprehension in their reading. This view is consonant with Berhnhardt's (2005) *compensatory model* of L2 reading, in which knowledge sources assist other sources that are deficient or non-existent (cf. the *interactive compensatory model* of reading proposed by Stanovich, 1980).

Commenting on the differences between L1 and L2 reading, Grabe and Stoller (2002, p. 63) outlined 14 broad differences, which they placed into three categories: (a) linguistic and processing differences, (b) individual and experiential differences, and (c) social, cultural, and institutional differences. However, if one major variable seems to have influence over other variables in distinguishing L1 readers from L2 readers, and if that in turn determines to some degree characteristics of good versus poor L2 readers, then that variable is the tension between

the L2 readers' target language proficiency and their general knowledge or conceptual maturation. In L1 readers, language proficiency and knowledge maturation develop naturally and concurrently, whereas in L2 readers, the target language proficiency lags far behind their knowledge or conceptual maturation, and the gap between the two could be immense. This tension will inevitably make a huge impact on overall L2 reading ability development, giving rise to problems or characteristics that make it different from L1 reading.

Table 1. *A profile of good readers*

Dimensions	Characteristics
Language knowledge and processing ability	• Automatic and rapid word recognition (e.g., Booth et al., 1999; Just & Carpenter, 1987; Nassaji, 2003; Perfetti,1985; Pressley, 1998) • Automatic syntactic parsing and semantic proposition formation (e.g., Chen, 1998; Fraser, 2004; Liu & Bever, 2002; Lu, 1999) • Reasonable size of vocabulary ranging from 10,000 to 100,000 (e.g., Alderson, 2000; Barnett, 1986; Carver, 1993; Grabe & Stoller, 2002) • Awareness of text type and discourse organization (e.g., Beck et al., 1991; Brantmeier, 2004; Carrell, 1992; Commander & Stanwyck, 1997)
Cognitive ability	• Good store of cognitive strategies (e.g., Block, 1986; Carrell, 1985, 1992; Grabe, 1999) • Ready access to variety of purposeful strategies (Hopkins & Mackay, 1997; Long et al., 1996; Yang & Zhang, 2002) • Higher and proficient use of strategies (Anderson, 1991; Grabe & Stoller, 2002; Haenggi & Perfetti, 1992; Reynolds et al., 1990) • Effective use of prior knowledge (e.g., Bernhardt, 1991; Chen & Groves, 1995; Haenggi & Perfetti, 1992) • Supportive use of mother tongue in L2 (e.g., Kern, 1994; Upton & Lee-Thompson, 2001)
Metacognitive strategic competence	• Good knowledge of cognition (e.g., Carrell et al., 1998; Gregory, 1994) • Competence in monitoring comprehension process (e.g., Karen & Evans, 1993; Yang & Zhang, 2002) • Competence in evaluating and regulating strategy use to achieve maximum comprehension (e.g., Gregory, 1994; Karen & Evans, 1993; Long & Chong, 2001)

New Research Directions in L2 Reading in China

Before research and pedagogical implications are drawn from the previous discussion, L2 reading research reported in the past 10 years in five relevant scholarly journals in China will be reviewed. Journals that are specifically devoted to reading research are still lacking, and the five journals examined consist of four journals in foreign language teaching and research and one in educational psychology. According to the nature of the work completed, the papers fall roughly into three categories: theoretical explorations, empirical investigations, and literature reviews. The number of published papers of these three types is shown in Table 2. The topics explored in those papers are described in Table 3.

Table 2. *Number of papers in L2 reading research published in five journals in China (January 1997–June 2007)*

Journals	Theoretical explorations	Empirical studies	Literature reviews	Total
Foreign Language Teaching and Research	0	11	2	13
Modern Foreign Languages	2	10	0	12
Foreign Language World	18	22	6	46
Studies in Foreign Languages	7	4	0	11
Psychological Science	3	80	8	91
Subtotal	30	127	16	173

Table 3. *Topics explored in L2 reading research in five journals in China (January 1997–June 2007)*

Topics explored	Number of published papers
Word-level issues in reading development	20
Discourse organization and text comprehension	32
Transfer of reading ability from L1 to L2	6
Reading development and instructional routines	43
Strategies, metacognition, and text comprehension	41
Extensive reading and motivation	15
Social and cultural context influences on reading	16
Total	173

Although the information in the above two tables is derived from a sample of five journals, it reflects the status quo of L2 reading research in the country and thus suggests new research directions that are worthy of exploration in the Chinese L2 context. The total number of studies carried out on L2 reading research is relatively small, considering the span of 10 years. Nevertheless, 127 (about 73%) of the 173 papers reported on empirical studies, which is an encouraging sign. Thirty papers (about 17%) are devoted to theoretical explorations. Theorizing is certainly important for disciplinary development. However, quite a number of papers in this category are devoted to sharing personal and anecdotal experiences rather than dealing with theoretical issues. As for the research topic explored, an imbalance and lack of research is clear in certain areas. Although the research issues range widely, four general areas seem particularly worth exploring in the present L2 reading research in China: (a) word-level issues in L2 reading development, (b) exposure to print in L2 reading development, (c) training of a strategic reader, and (d) the relationship between instruction and testing.

1. Word-Level Issues in L2 Reading Development

The review of previous studies and the analysis of the tension between the L2 readers' target language proficiency and their conceptual maturation have repeatedly indicated the utmost importance of L2 readers' target language proficiency. However, studies on these topics are seriously lacking (only 11% of the papers have dealt with these issues). Studies on L2 readers' lexical access, syntactic parsing, and the effect of automaticity training are therefore urgently needed. Another important area of research is readers' vocabulary development. According to the newly issued *National English Curriculum Standards for General Education* (Ministry of Education, 2001), the vocabulary requirement for high school graduates has risen from about 2,000 to 3,300 words. [2] In the current national college entrance examination in English (of which the reading comprehension section makes up 40% of the total score), however, the required

English vocabulary is about 2,000 words, which is specified in accordance with the old "National English Syllabus." Testing the reading ability of a conceptually well-developed high-school graduate with texts of about 2,000 word coverage certainly seems out of place. In the Chinese EFL context, poor readers are often accused of being word-bound, and as a training strategy, they are encouraged to guess from the context to aid comprehension. As is discussed elsewhere in this paper, this is somewhat misleading. Poor readers are word-bound not because they lack top-down skills, but instead because they lack sufficient large vocabularies and lack automaticity in word recognition skills. All these issues need empirical investigation so as to inform policy-making and pedagogy.

2. Exposure to Print in L2 Reading Development

Related to the first topic are the studies on the amount of exposure to print and the roles of extensive reading in L2 reading development. These issues are important to L2 reading settings. From the standpoint of second language acquisition, reading provides a readily available and most important input of the language for learners in a context like China, where the environmental support is poor (Pang, Zhou, & Fu, 2002). As for the difficulty level of reading materials, Laufer (1989) proposed a 95% coverage of known words for fluent reading. I have observed that Chinese EFL readers read few but difficult materials in terms of known vocabulary coverage (a quick glance at some EFL course books and the popular English learning newspaper *21st Century* will soon validate this claim of a high incidence of new words in reading materials).[3] L2 readers should be encouraged to read extensively, and appropriate materials should be selected according to their language proficiency and interest (Brantmeier, 2006). The *whens* and *hows* constitute good research topics.

3. Training of a Strategic Reader

Although some cognitive and metacognitive strategies are common to all good readers, some strategies are unique to good Chinese L2 readers such as the use of the L1 in L2 reading. What role does the use of the L1 play in L2 reading development? In pedagogical terms, what can be done in the training of a strategic reader? Some major English reading course books used in China often have strategy training parts; however, they are mostly used without the support of empirical research. Research effort directed to these topics would certainly be useful.

4. Relationship Between Instruction and Testing

The current prevailing practice of using the multiple choice format to test reading comprehension in both test and instructional settings reinforces conformity at the cost of variability of understanding a text. If multiple choice is useful in testing a reader's *text model* (i.e., a close representation of text information), whether it is capable of testing a reader's *situation model* (i.e., a reader's interpretation of text information) is doubtful. Extensive use of the multiple choice format especially in teaching and learning severely hinders the development of critical and creative thinking in readers, destroying learners' interest in reading in the long run. From a research perspective, topics in this area will clarify confusion between instruction and testing, generating insights for better practices in reading instruction.

Conclusion

The review of previous research on reading comprehension and the subsequent profile of good readers presented in this paper may offer a new perspective for our understanding of reading in a second language. In the Chinese EFL context, reading provides rich and abundant samples of L2 input, which is needed to improve learners' overall language proficiency. From a utilitarian point of view, reading is just what Chinese EFL learners need most both in their academic studies and in their future work. China, reputed to have the biggest population learning English as a foreign language in the world, offers a wide range of issues in L2 reading to be explored. The four areas identified in this paper may provide a stimulus for Chinese scholars and others to carry out research that will not only help China to catch up with international research development but also help to explore theories applicable to EFL reading.

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Notes

1. Perceptual attention and conceptual attention are two qualitatively different types of attention. Perceptual attention is used to accurately decode words whereas conceptual attention is used to get meaning from the text.

2. The *National English Curriculum Standards for General Education* (from primary to senior high schools) was formally implemented in 2005. It stipulates that English instruction begins from the third grade of primary school (generally pupils aged 9). It has nine levels or bands, with the ninth band on the top (vocabulary requirement: 4,500 words). Band 9 is for schools with an emphasis on English learning like foreign language schools. The vocabulary size for graduates from ordinary high schools is set at the Band 8 level with 3,300 words. The previous vocabulary size was 1,940 words, as specified in the national English syllabus before the new English curriculum standard was issued.

3. *21st Century* is a popular national English newspaper in China, its target audience being students and others who are learning English as a foreign language.

References

Alderson, J. C. (2000). *Assessing reading.* New York: Cambridge University Press.

Alderson, J. C., & Urquhart, A. H. (1985). The effect of students' academic discipline on their performance on ESP reading tests. *Language Testing*, *2*, 192–204.

Anderson, N. J. (1991). Individual differences in strategy use in second language reading and testing. *The Modern Language Journal*, *75*, 460–472.

Barnett, M. A. (1986). Syntactic and lexical/semantic skill in foreign language reading: Importance and interaction. *The Modern Language Journal*, *70*, 343–349.

Barry, S., & Lazarte, A. A. (1998). Evidence for mental models: How do prior knowledge, syntactic complexity, and reading topic affect inference generation in a recall task for nonnative readers of Spanish? *The Modern Language Journal*, *82*, 176–193.

Beck, I., McKeown, M., Sinatra, G., & Loxterman, J. (1991). Revising social studies text from a text-processing perspective: Evidence of improved comprehensibility. *Reading Research Quarterly*, *26*, 251–276.

Bernhardt, E. B. (1991). *Reading development in a second language.* Norwood, NJ: Ablex.

Bernhardt, E. B. (2005). Progress and procrastination in second language reading. *Annual Review of Applied Linguistics*, *25*, 133–150.

Block, E. L. (1986). The comprehension strategies of second language readers. *TESOL Quarterly*, *20*, 463–494.

Block, E. L. (1992). See how they read: Comprehension monitoring of L1 and L2 readers. *TESOL Quarterly*, *26*, 319–343.

Booth, J. R., Perfetti, C. A., & MacWhinney, B. (1999). Quick, automatic, and general activation of orthographic and phonological representations in young readers. *Developmental Psychology*, *35*, 3–19.

Brantmeier, C. (2004). Building a comprehensive theory of adult foreign language reading: A variety of variables and research methods. *Southern Journal of Linguistics*, *27*, 1–7.

Brantmeier, C. (2006). Toward a multicomponent model of interest and L2 reading: Sources of interest, perceived situational interest, and comprehension. *Reading in a Foreign Language*, *18*, 89–115.

Brown, R., Pressley, M., Van Meter, P., & Schuder, T. (1996). A quasi-experimental validation of transactional strategy instruction with low-achieving second-grade students. *Journal of Educational Psychology*, *88*, 18–37.

Carrell, P. L. (1985). Facilitating ESL reading by teaching text structure. *TESOL Quarterly*, *19*, 727–752.

Carrell, P. L. (1987). Content and formal schemata in ESL reading. *TESOL Quarterly*, *21*, 461–481.

Carrell, P. L. (1992). Awareness of text structure: Effects on recall. *Language Learning*, *42*, 1–20.

Carrell, P. L., Gajdusek, L., & Wise, T. (1998). Metacognition and EFL/ESL reading. *Instructional Science*, *26*, 97–112.

Carver, R. (1992). Reading rate: Theory, research, and practical implications. *Journal of Reading*, *36*, 84–95.

Carver, R. (1993). Merging the simple view of reading with rauding theory. *Journal of Reading Behavior*, *25*, 439–55.

Chen, H. (1998). Yingyu shuiping dui Zhongguo Yingyu xuexizhe lijie Yingyu jufa qiyi de

zhiyue zuoyong [Constraints of English proficiency on understanding English ambiguous sentences in Chinese EFL learners]. *Modern Foreign Languages*, *2*, 1–16.

Chen, H-C., & Graves, M. F. (1995). Effects of previewing and providing background knowledge on Taiwanese college students' comprehension of American short stories. *TESOL Quarterly*, *29*, 663–686.

Cohen, A. (1998). *Strategies in learning and using a second language.* London: Longman.

Commander, N. E., & Stanwyck, D. J. (1997). Illusion of knowing in adult readers: Effects of reading skill and passage length. *Contemporary Educational Psychology*, *22*, 39–52.

Evans, E. E. (1988). "Advanced" ESL reading: Language competence revisited. *System*, *16*, 337–346.

Flavell, J. H. (1978). Metacognitive development. In J. M. Scandura & C. J. Brainerd (Eds.), *Structural/Process theories of complex human behavior* (pp. 213–245). The Netherlands: Sijthoff and Noordhoff.

Fraser, C. A. (2004). Reading fluency in a second language. *The Canadian Modern Language Journal*, *61*, 135–160.

Goodman, K. S. (1967). Reading: A psycholinguistic guessing game. *Journal of the Reading Specialist*, *6*, 126–35.

Grabe, W. (1999). Developments in reading research and their implications for computer-adaptive reading assessment. In M. Chalhoub-Deville (Ed.), *Issues in computer-adaptive testing of reading proficiency* (pp. 11–48). Cambridge, UK: Cambridge University Press.

Grabe, W., & Stoller, F. L. (2002). *Teaching and researching reading.* London: Longman.

Gregory, S. (1994). The effect of metacognitive knowledge on local and global monitoring. *Contemporary Educational Psychology*, *19*, 143–154.

Haenggi, D., & Perfetti, C. A. (1992). Individual differences in reprocessing of text. *Journal of Educational Psychology*, *84*, 182–192.

Hammadou, J. (1991). Interrelationships among prior knowledge, inference, and language proficiency in foreign language reading. *The Modern Language Journal*, *75*, 27–38.

Hazenburg, S., & Hulstijn, J. H. (1996). Defining a minimal receptive second language vocabulary for non-native university students: An empirical investigation. *Applied Linguistics*, *17*, 145–163.

Hopkins, N. M., & Mackay, R. (1997). Good and bad readers: A look at the high and low achievers in an ESP Canadian studies reading and writing course. *The Canadian Modern Language Review*, *53*, 473–490.

Hosenfeld, C. (1977). A preliminary investigation of the reading strategies of successful and non-successful second language learners. *System*, *5*, 110–123.

Hosenfeld, C. (1984). Case studies of ninth grade readers. In J. C. Alderson & A. H. Urquhart (Eds.), *Reading in a foreign language* (pp. 231–240). London: Longman.

Just, M. A., & Carpenter, P. A. (1987). *The psychology of reading and language comprehension.* Boston, Mass.: Allyn & Bacon.

Karen, Z., & Evans, C. N. (1993). Rereading to understand: The role of text coherence and reader proficiency. *Contemporary Educational Psychology*, *18*, 442–454.

Kern, R. G. (1994). The role of mental translation in second language reading. *Studies in Second Language Acquisition*, *16*, 441–461.

Laufer, B. (1989). What percentage of text-lexis is essential for comprehension? In C. Lauren & M. Nordman (Eds.), *Special language: From humans thinking to thinking machines*, (pp. 316–323). Philadelphia, PA: Multilingual Matters.

Liu, Z., & Bever, T. G. (2002). Jufa fenxi zai waiyu yueduzhong de zuoyong [An experimental study of the function of syntactic analysis in reading comprehension]. *Foreign Language Teaching and Research*, *34*, 219–224.

Long, D. L., Seely, M. R., Oppy, B. J., & Golding, J. M. (1996). The role of inferential processing in reading ability. In B. K. Britton & A. C. Graesser (Eds.), *Models of understanding text* (pp. 189–214). Hillsdale, NJ: Erlbaum.

Long, D. L., & Chong, J. L. (2001). Comprehension skill and global coherence: A paradoxical picture of poor comprehenders' abilities. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *27*, 1424–1429.

Lu, S. (1999). *An investigation into EFL reading processes: Reading effectiveness, inference construction, metacognitive strategy.* Unpublished MA dissertation, Zhejiang University, China.

Meyer, B. J. F., & Rice, G. E. (1982). The interaction of reader strategies and the organization of text. *Text*, *2*, 155–92.

Meyer, B. J. F., & Rice, G. E. (1984). The structure of text. In P. D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (pp. 319–352). New York: Longman.

Ministry of Education. (2001). *Yingyu kecheng biaozhun* [National English curriculum standards for general education]. Beijing: Beijing Normal University Press.

Nassaji, H. (2003). Higher-level and lower-level text processing skills in advanced ESL reading comprehension. *The Modern Language Journal*, *87*, 261–276.

Pang, J., Zhou, X., & Fu, Z. (2002). English for international trade: China enters the WTO. *World Englishes*, *21*, 201–216.

Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research*, (Vol. 2, pp. 609–640). Mahwah, NJ: Lawrence Erlbaum Associates.

Parry, K. (1991). Building a vocabulary through academic reading. *TESOL Quarterly*, *25*, 629–653.

Perfetti, C. (1985). *Reading ability.* New York: Oxford University Press.

Pichette, F., Segalowitz, N., & Connors, K. (2004). Impact of maintaining L1 reading skills on L2 reading skill development in adults: Evidence from speakers of Serbo-Croatian learning French. *The Modern Language Journal*, *87*, 391–403.

Pressley, M. (1998). *Reading instruction that really works.* New York: Guilford Press.

Rayner, K. (1997). Understanding eye movements in reading. *Scientific Studies of Reading*, *1*, 317–339.

Reynolds, R. E., Shepard, C., Lapan, R., Cynthia K., & Goetz, E. T. (1990). Differences in the use of selective attention by more successful and less successful tenth-grade readers. *Journal of Educational Psychology*, *82*, 749–759.

Schoonen, R., Hulstijn, J., & Bossers, B. (1998). Metacognitive and language-specific knowledge in native and foreign language reading comprehension: An empirical study among Dutch students in grades 6, 8 and 10. *Language Learning*, *48*, 71–106.

Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System*, *29*, 431–449.

Smith, F. (1973). *Psycholinguistics and reading.* New York: Holt, Rinehart & Winston.

Spires, H. A., & Donley, J. D. (1998). Prior knowledge activation: Inducing engagement with informational texts. *Journal of Educational Psychology*, *90*, 249–260.

Stanovich, K. E. (1980). Towards an interactive-compensatory model of individual differences in the acquisition of literacy. *Reading Research Quarterly*, *16*, 32–71.
Stanovich, K. E. (2000). *Progress in understanding reading: Scientific foundations and new frontiers.* New York: Guilford Press.
Upton, T. A., & Lee-Thompson, L. (2001). The role of the first language in second language reading. *Studies in Second Language Acquisition*, *23*, 469–495.
West, R. F., Stanovich, K., & Cunningham, A. (1995). Compensatory progresses in reading. In R. Dixon & L. Backman (Eds.), *Compensating for psychological deficits and declines: Managing losses and promoting gain* (pp. 275–296). Hillsdale, NJ: Erlbaum.
Yang, X., & Zhang, W. (2002). Yuanrenzhi yu Zhongguo daxuesheng Yingyu yuedu lijie xiangguan yanjiu [The correlation between metacognition and EFL reading comprehension of Chinese college students]. *Foreign Language Teaching and Research*, *34*, 213–218.
Zvetina, M. (1987). From research to pedagogy: What do L2 reading studies suggest? *Foreign Language Annals*, *20*, 233–238.

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