

The Relationship between L1 Reading, L2 Linguistic Knowledge, and L2 Reading: A Critical Review

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1. Introduction

This paper examines research into the relationship between L1 reading, L2 linguistic knowledge (L2 proficiency), and L2 reading in terms of the theoretical assumptions and research methodologies involved.¹ Since 1984, when Alderson asked, "Is second language reading a language problem or a reading problem," a growing body of empirical evidence has been accumulated to answer this question. This research question represents two related issues: (a) the relative importance of L1 reading and L2 linguistic knowledge in L2 reading, and (b) the interlingual transfer of L1 reading knowledge to L2 reading.

In the acquisition of second language reading skills, L2 learners do not begin from zero, but draw upon knowledge and skills already acquired in L1 reading. In this regard, Jolly (1978, quoted in Alderson, 1984, p. 2) pointed out that "reading in a foreign language requires 'the transference of old skills, not the learning of new ones'." This, however, does not mean that at the onset of SLA, adolescent and adult L2 learners have already acquired a complete set of knowledge and skills in L1 reading. L2 reading involves (a) knowledge and skills for processing L2 linguistic properties, i.e., orthographic, phonological, lexical, syntactic, and discursal knowledge, which are specific to L2, and also (b) general cognitive processes and skills, such as predicting, making inferences, and retrieving relevant background knowledge, which are assumed to operate universally across languages.² The former type of knowledge and skills need to be learned in SLA, while most of the latter type of knowledge has been already developed in L1 reading. Summarizing this point, Carrell (1991) proposed the formula "L2 reading = L1 reading + L2 language proficiency" (p. 161). Speculations about the interaction of these two types of knowledge base in L2 reading have led researchers to formulate various hypotheses, among which the Linguistic

Threshold Hypothesis and the Linguistic Interdependence Hypothesis represent two major driving forces in L2 reading research.

2. The Linguistic Threshold Hypothesis and the Linguistic Interdependence Hypothesis

Bernhardt & Kamil (1995) point out that research on the L1 and L2 reading relationship has been guided, explicitly or implicitly, by the Linguistic Threshold Hypothesis and the Linguistic Interdependence Hypothesis, both of which were originally proposed by Cummins (1979, 1980) in his works on bilingual development. The Linguistic Threshold Hypothesis (LTH) in L2 reading research holds that “poor reading in a foreign language is due to inadequate knowledge of the target language” or “due to reading strategies in the first language not being employed in the foreign language, due to inadequate knowledge of the foreign language” (Alderson, 1984, p. 4). The Linguistic Interdependence Hypothesis (LIH), in contrast, states that “[p]oor reading in a foreign language is due to poor reading ability in the first language” (ibid.). According to LIH, “when a language operation such as reading and writing has been acquired in a language, the same operation is not ‘reacquired’ in a second” (Bernhardt & Kamil, 1995, p. 17). Table 1 summarizes the commonly-believed characteristics of LTH and LIH in L2 reading:

Table 1. Commonly-believed characteristics of LTH and LIH

	LTH	LIH
related hypotheses	short-circuit hypothesis language ceiling hypothesis	reading universal hypothesis common underlying proficiency
the nature of L2 reading	a language problem	a reading problem
the major determinant of L2 reading	L2 linguistic knowledge	L2 reading ability
L1 reading transfer	possible after a threshold	possible from the beginning
views on general cognitive reading processes	universal	universal

Although these two hypotheses have been used as guiding principles in L2 reading research, we need to stop here and ask whether LTH and LIH are actually competing hypotheses. This is important, because, as in other fields, we often establish false dichotomies for simplifying discussions that typically result in fruitless discussions and research. Indeed, a close examination of these two hypotheses reveals that they are not necessarily opposing (Bernhardt & Kamil, 1995, p. 32), for example in terms of the importance of L1 reading knowledge. Nor are they well-articulated in important respects, such as the theoretical necessity of positing a linguistic threshold level; as a consequence, key terms are interpreted and used differently by different researchers (see Section 4 below). In addition, most of this line of research to date has conflated two issues which

are certainly related but which should be clearly separated at the theoretical level: (a) the relative importance of L1 reading ability and L2 linguistic knowledge in L2 reading (i.e., the relative importance issue), and (b) the transferability of skills acquired in L1 reading to L2 reading (i.e., the transfer issue). While the former issue may be most appropriately investigated by the multiple regression approach, which most studies have taken, the latter issue requires the factorial design approach in which target L1 reading processes and the corresponding L2 reading processes are systematically compared. These two issues are examined separately below.

3. The Relative Contributions of L1 Reading and L2 Knowledge to L2 Reading

Six studies on the effects of L2 linguistic knowledge and L1 reading ability on L2 reading were reviewed, and the results are summarized in Table 2. All these studies adopted multiple regression approaches, with L2 proficiency (L2P) and L1 reading (L1R) as the independent variables for explaining the dependent variable of L2 reading (L2R).³ Generalizations may be difficult because these studies differed with respect to the measures of L1R and L2R (comprehension questions, cloze, recall), the measures of L2P (course level, grammar test, vocabulary test, processing efficiency measures), and the proficiency levels of the subjects involved. Nevertheless, several notable patterns have emerged from the findings. First, in most of the studies, L2P is a substantially more powerful predictor of L2R than L1R; in other words, L2R is mainly a language problem rather than a reading problem, although this generalization may not apply to advanced L2 learners and reading tasks of little cognitive complexity (e.g., scanning) (see the discussions below). Second, several studies (Carrell, 1991; Bossers, 1991; Brisbois, 1995) have shown that the relative contributions of L2P and L1R change in accordance with the development of L2P; i.e., as L2P increases, so does the contribution of L1R to L2R, and the relative importance of L2P and L1R is reversed.⁴ This is graphically illustrated in Figure 1:

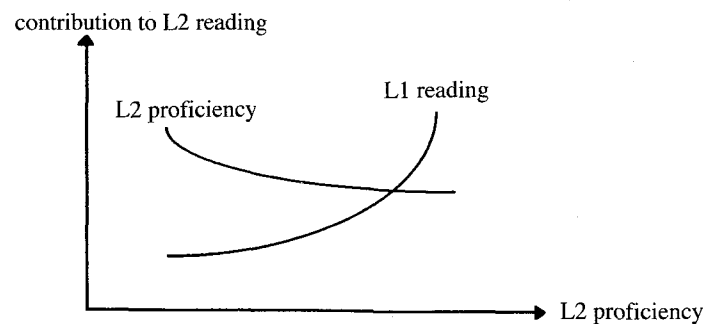


Figure 1. The contributions of L2 proficiency and L1 reading to L2 reading at varying L2 proficiency levels

Table 2. A summary of research findings on the relative contributions of L1 reading and L2 linguistic proficiency to L2 reading

Study	Subjects	L1 reading	L2 proficiency	L2 reading	Results
Carrell (1991)	1) 45 Spanish learners of English (higher-level) 2) 75 English learners of Spanish (lower-level)	comprehension Qs	course level	comprehension Qs	Subjects 1: L1R** > L2P* (a total of 35%) Subjects 2: L2P** > L1R* (a total of 53%) Subjects 1+2: L2P** > L1R** (a total of 40%)
Bosser (1991)	50 Turkish readers of Dutch i) 15 higher-level learners ii) 35 lower-level learners	comprehension Qs	grammar and vocabulary test	comprehension Qs	Total: L2P** > L1R** (a total of 73%) High: L1R* > L2P (a total of 34%) Low: L2P** > L1R (a total of 46%)
Yamashita (1993)	36 Japanese learners of English	1) cloze test 2) summary MC cloze 3) 1) + 2)	sentence verification#	1) cloze test 2) summary MC cloze 3) 1) + 2)	<u>L2R=cloze</u> L1R** (cloze) (27%) > L2P** (13%) L2P** (26%) > L1R (summary cloze) L2P** > L1R** (cloze+summary cloze) (26%) (17%) <u>L2R=summary MC cloze</u> L2P** (22%) > L1R (any measure) <u>L2R=cloze+summary MC cloze</u> L2P** (32%) > L1R (any measure) (0-10%)
Brisbois (1995)	131 American readers of French i) 43 higher-level learners ii) 88 lower-level learners	1) comprehension Qs 2) recall	1) grammar (MC and cloze) 2) vocabulary (definition and translation)	1) comprehension Qs 2) recall	<u>L2R=comprehension Qs</u> High: L1R=L2P (vocabulary+grammar) (7.5%) (6.7%) Low: L2P (vocabulary)** > L1R* (10.1%) (5.7%) <u>L2R=recall</u> High: L1R** > L2P (vocabulary)** (20.5%) (7.6%) Low: L1R** > L2P (vocabulary)** (11.1%) (9.3%)

Note. L2P=L2 linguistic proficiency; L1R=L1 reading; L2R=L2 reading; MC=multiple-choice; High=higher-level learners; Low=lower-level learners; *=a significant predictor of L2 reading at $p < .05$; **=a significant predictor of L2 reading at $p < .01$; #=Other processing efficiency measures (e.g., letter matching) were also included, but most of them turned out not to be a significant predictor of L2 reading comprehension; Reported R^2 for each predictor variable is shown in parentheses.

Table 2. (continued)

Study	Subjects	L1 reading	L2 proficiency	L2 reading	Results
Bernhardt & Kamilish (1995)	187 American readers of Spanish	comprehension Qs (several tests) + reading rate score	course levels	comprehension Qs	L2P** (30-38%) > L1R** (10-16%)
Taillefer (1996)	53 French readers of English i) 28 higher-level learners ii) 25 lower-level learners	1) comprehension Qs 2) scanning test	TOEFL grammar & vocabulary sections + cloze test	1) comprehension Qs 2) scanning test	L2R = comprehension Qs Total: L2P** (35%) > L1R (less than 1%) High: L2P* (19%) > L1R (1%) Low: L2P (9%) = L1R (3%) L2R = scanning Total: L1R** (11%) > L2P (4%) High: L1R** (42%) > L2P (1%) Low: L2P (8%) = L1R (less than 1%)

Note. L2P = L2 linguistic proficiency; L1R = L1 reading; L2R = L2 reading; High = higher-level learners; Low = lower-level learners; * = a significant predictor of L2 reading at $p < .05$; ** = a significant predictor of L2 reading at $p < .01$; Reported R^2 for each predictor variable is shown in parentheses.

It is not clear, however, that this increased contribution of L1R to L2R can be interpreted as a reflection of an increase in L1 reading skill transfer.

Third, the relative importance of L1R and L2P to L2R varies depending on how L2R is assessed (e.g., comprehension questions, recall) (Yamashita, 1993; Brisbois, 1995) and also on the type of L2 reading task (e.g., main idea comprehension, scanning) (Taillefer, 1996). Taillefer (1996), for example, showed that in the task of scanning a text in L2, the corresponding L1 scanning ability was by far more influential than L2P, while the relative importance of the two predictor variables was reversed in the task of L2 main idea comprehension. These results indicate that different reading tasks are influenced differently by L2P, although what specific factors determine such interaction has yet to be identified. Fourth, the "L2 reading = L1 reading + L1 linguistic proficiency" equation is an incomplete one, in the sense that large portions of L2 reading variance cannot be accounted for either by L1R or L2P. In most of the studies, the two factors together explain less than 50% of the total L2 reading variance. Additional predictor variables need to be identified and their contribution should be examined. In sum, the general picture emerging from the studies in Table 1 is that in the typical L2 reading task of main idea comprehension, L2 linguistic knowledge is a major determinant of L2 reading, with L1 reading gradually coming into play as an important factor

as L2 learners develop L2 linguistic competence.

Regarding the second point, why is it that L1 reading is not a significant predictor of L2 reading in some cases (Bossers, 1991; Yamashita, 1993; Taillefer, 1996)? The standard interpretation may be that the subjects in these studies have not reached a threshold level beyond which L1 reading knowledge can transfer. However, it seems too simplistic to equate a significant L1/L2 reading correlation with L1 to L2 reading transfer alone, to assume that a lack of correlation indicates no transfer, or to view higher correlations simply as the result of increased transfer. Some type of transfer should occur from the very beginning, whether or not it is reflected in a significant correlation in global reading measures. It is highly unlikely, for example, that no relevant background knowledge retrieval of any kind occurs until L2 readers reach a certain threshold level. In addition, the lack of significant correlation can be interpreted as an index of a different phenomenon; i.e., the constructs of L2 reading tests are different from those of L1 reading tests, and items in L2 reading tests are not suitable for detecting L1 reading transfer. For example, L2 reading tests may typically consist of factual main idea questions, whereas L1 reading tests may be comprised of more cognitively demanding inferential questions.

Although this line of study, in which a multiple regression approach is adopted, is primarily designed to examine the relative importance of L2 knowledge and L1 reading in L2 reading, it typically makes further claims about L1 reading transfer (or lack thereof) and the existence of the linguistic threshold. Those claims based solely on correlation data, however, are seriously limited in revealing the nature of the transfer, since they only look at global L1 and L2 reading performance without specifying what constitutes reading competence, and, consequently, transfer of specific reading processes or skills are not examined.⁵ The fact that L1 reading comes into play as a significant predictor of L2 reading can be taken only as indirect evidence for such transfer. When discussing the issue of interlingual reading transfer, instead of relying on global correlations, we need to decompose reading into more tractable subcomponents, such as the generation of bridging inferences, and compare the target processes in corresponding L1 and L2 reading situations. The discussion now turns to this transfer issue in the next section.

4. The Transfer Issue

In order to avoid unnecessary confusion, it is necessary to remember that research into cross-linguistic reading transfer focuses on the *positive* transfer of universal non-linguistic cognitive processes across languages, in contrast to the majority of language transfer research which has revolved around the *negative* transfer of linguistic knowledge (see Odlin (1989) for a review of language transfer). The most widely-known and oft-quoted view on L1 reading transfer is the short-circuit hypothesis (Clarke, 1980, p. 206):

... limited control over the language “short-circuits” the good [L1] reader’s

system, causing him/her to revert to poor reader strategies when confronted with a difficult or confusing task in the second language. This suggests that it may be inaccurate to speak of “good readers” and “poor readers.” Perhaps there are not “good readers” and “poor readers” but merely “good” and “poor” reading behaviors which characterize most readers at different times; when one is confronted with difficult reading (whether because of complex language or unfamiliar content) one is likely to revert to poor reading behaviors.

A careful reading of this quotation reveals that the short-circuit hypothesis can be interpreted in two ways: (a) limited L2 linguistic competence constrains the transfer of effective reading strategies acquired in L1 reading to L2 reading, and (b) most readers, regardless of their L2 proficiency or even the languages in which they read, cannot employ effective reading strategies for difficult texts. Although (a) and (b) may stem from the same causes, examinations of the two phenomena require different research designs, and only the (a) interpretation relates to the transfer issue.

The short-circuit hypothesis is not well-articulated in terms of what constitutes “good reading strategies” (i.e., acquired in L1). It was originally derived from analyses of L1 and L2 readers’ strategies in cloze tests and their miscues in oral reading. “Good reader strategies” in the original study, therefore, were confined to (a) the use of semantic rather than syntactic cues in answering cloze tests, and (b) the production of semantically acceptable miscues in oral reading (indicating the good readers’ focus on meanings within the text). The short-circuit hypothesis, however, has been referred to as a guiding hypothesis with a much broader scope of applicability, and attempts to make it empirically testable require that we first identify potentially effective reading strategies. The following examples illustrate some of these strategies (e.g., processing of coherence relations, making bridging inferences, and retrieving relevant background knowledge):

- (1) *He did not come to the party yesterday. He was sick in bed all day.*
- (2) *The spy quickly threw his report in the fire. The ashes floated up the chimney.⁶*
- (3) *Everybody uses a computer these days, so I decided to buy a Macintosh.*

The transfer issue raises the following questions: In reading the message in (1), is it possible that one can process the coherence relation of EFFECT-CAUSE between the two sentences in L1 while the same person fails to do so in L2? In reading the message in (2), is a bridging inference, i.e., “the report burned to ashes,” made in L1 reading, but made less frequently, or not at all, in L2 reading context? In (3), in the same way, is it possible that those reading in L1 retrieve relevant background knowledge (e.g., the Macintosh refers to a computer) while the same people reading the same message in L2 fail to do so? The short-circuit hypothesis is concerned with whether these strategies are constrained by L2 linguistic proficiency.

“Effective” reading strategies vary from those that are highly complex, like prediction generation, visualization, and inference, to those that are rather simple, such as skimming, scanning, and even using illustrations and titles as clues, and it is possible that only some of these processes or strategies may be subject to the short-circuit hypothesis. Indeed, Taillefer (1996) demonstrated that L1 readers with good scanning ability, regardless of their level of L2 proficiency, performed well on an L2 scanning task, indicating that there is no L2 competence constraint on the transfer of scanning skills. Similarly, it is highly unlikely, for example, that low L2 competence shortcircuits in any way the strategy of using illustrations as clues. The research question, therefore, is not simply whether a “short-circuit” phenomenon is observed but what reading skills and their transfer are constrained by a limited target language competence.

A related notion in the discussion of transferability is “the threshold level.” In the field of bilingualism research, Cummins (1979) contends that “the threshold hypothesis assumes that those aspects of bilingualism which might positively influence cognitive growth are unlikely to come into effect until the child has attained a certain minimum or threshold level of competence in a second language” (p. 229).⁷ In L2 reading literature, the threshold is referred to as the minimum level of L2 proficiency permitting the transfer of L1 reading skills.⁸ Alderson (1984), for example, holds that “some threshold does ... appear to be necessary before other abilities, like one’s first-language reading ability, can be brought to bear upon the task of reading in a foreign language” (p. 19). Bossers (1991) makes a parallel claim that “direct transfer of L1 reading skills occurs only when a certain amount of L2 knowledge has been acquired” (p. 57). L2 reading research has presupposed the existence of the threshold and attempted to reveal its nature and to locate its exact position (e.g., Laufer & Sim, 1985), but is the threshold a theoretically useful notion in developing a model of L1 reading transfer?

Interlingual reading transfer can be roughly conceptualized in the three ways in Figure 2. In each of the three graphs in Figure 2, the horizontal x -axis and the vertical y -axis represent L2 linguistic proficiency and the degree of L1 reading transfer respectively.

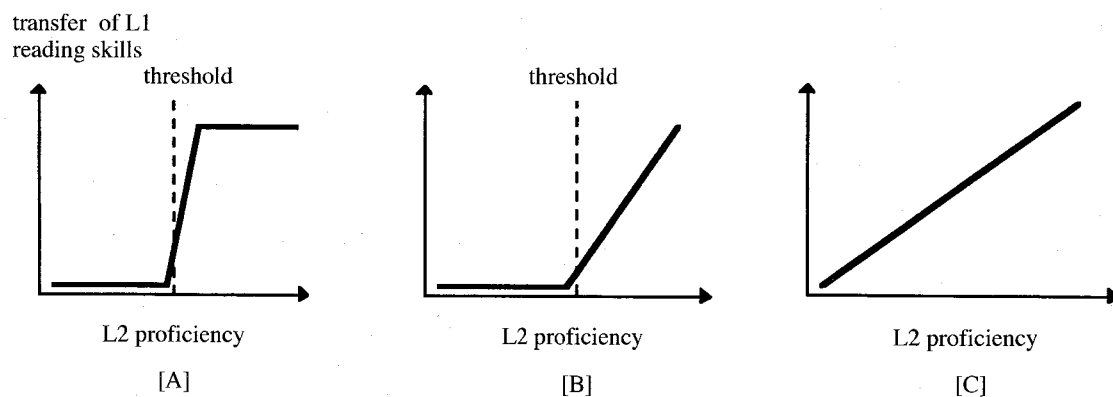


Figure 2. Three types of conceptualization of L1 reading transfer

The case [A] shows that L2 readers suddenly become able to employ L1 reading knowledge and skills when their proficiency reaches a certain threshold level. In [B], the threshold represents the line at which substantial L1 reading transfer begins to increase. The notion of the threshold level, however, is not compatible with [C] in which cross-linguistic reading transfer gradually increases in accordance with the development of L2 linguistic knowledge and its processing efficiency. If transfer gradually increases, as in [C], any attempt to identify the exact location of the threshold level is destined to result in a failure. In fact, there is no reason *a priori* to posit the language threshold as a theoretical construct; another more likely possibility is that constraints on L1 reading skill transfer are gradually removed by L2 readers' acquisition of L2 linguistic competence, as in [C]. This, of course, is an empirical question, but the default hypothesis should be that there is no threshold for L1 reading transfer, and this should be rejected only when relevant data compel us to posit a threshold level of a certain kind. Research to date, however, has taken the opposite direction.

In contrast to these conceptual discussions, direct empirical investigations of L1 reading transfer to L2 reading and comparisons of specific cognitive processes in L1 and L2 reading are scarce. One notable exception is Davis & Bistodeau (1993), who employed a think-aloud procedure to compare L1 and L2 readers' use of "top-down" strategies (e.g., prediction, reference to antecedent information in the text), "bottom-up" strategies (e.g., comments on intrasentential features, restatement), and "metacognitive" strategies (e.g., comments on the subject's own behavior). Eight native readers of English and eight native readers of French both read texts in their L1 and L2. In the case of the former group of subjects, those reading in their L2 demonstrated more bottom-up strategies, especially individual word focus, and fewer top-down strategies and evaluative comments on text contents in particular than those reading in their L1. Davis & Bistodeau interpret these findings to indicate that low L2 linguistic proficiency resulted in much greater attention being given to L2-specific linguistic properties and fewer resources to universal top-down cognitive processes. The other group of subjects (i.e., the eight native readers of French), however, did not show any significant differences between L1 and L2 readings.

Along a similar line, Ikeno (1996) compared text structure prediction (i.e., expectations readers generate for the text organizational aspects of an upcoming text segment, such as "examples will be provided") across L1 and L2 reading. 99 subjects were first classified into advanced and less-advanced groups based on their cloze test scores, and the subjects in each group were randomly assigned either to an L1 or an L2 reading condition in turn. The results indicated that the advanced L2 learners showed better text structure prediction performance than the less-advanced L2 learners, although, interestingly, their performance did not differ in the corresponding L1 reading condition. These results suggest that L2 learners having equivalent L1 prediction abilities may perform differently on measures involving L2 text structure prediction, and their different L2 prediction performance depends on how proficient they are in L2. These results are also in line with the hypothesis

that transfer of L1 reading ability gradually increases along with the development of L2 linguistic competence.

Since the majority of the previous studies have relied on global L1 and L2 reading correlations, cross-linguistic transfer of a specific reading skill is a subject for future investigations. How should a study be designed to examine reading transfer across languages at a certain acquisition point? I argue that a between-subjects design will probably guarantee higher internal validity than a within-subjects design, and oppose Alderson (1984) who claims that the investigation of this issue requires L1 and L2 reading performance data of *the same subjects*. A within-subjects design, certainly, can control reader variables, but since it requires that different texts be used in L1 and in L2 reading, this may lead to a confounding of text variables. Consequently, the interpretation of any differences between L1 and L2 reading performance, if observed, is necessarily ambiguous, since the differences may be attributed either to the languages in which the subjects read (L1, L2) or differences between the target texts. A between-subjects design, in contrast, can reduce potential confounds of text variables by using equivalent L1 and L2 texts (the L1 original and its L2 translation, or vice versa). The problem associated with a possible failure to control important reader variables in a between-subjects design should be minimized by random assignment of subjects into L1 and L2 reading conditions.

Positive L1 reading transfer is defined as a similarity between L1 and L2 reading performance, or, in more operational terms, as a lack of statistically significant difference between L1 and L2 readers' behaviors in the frequency of a target cognitive process (e.g., bridging inference) observed at a probe point. Additionally, in order to capture developmental trends by studies with a cross-sectional design, at least three types of data are needed: (a) L1 target process performance data (baseline), (b) data from advanced L2 learners reading in L2, and (c) data from less-advanced L2 learners reading in L2. Increase of positive L1 reading transfer is identified when advanced L2 learners show greater resemblance with the L1 baseline in their performance of a target process than do less-advanced L2 learners. In addition to this minimum requirement, it also needs to be ensured that the advanced and the less-advanced L2 learners do not differ in their performance of the target process in the L1 reading condition. This enables us to rule out the explanation that differences between the advanced and the less-advanced L2 learners, if observed, are simply due to their different L1 reading abilities.⁹ Needless to say, the interpretation of the results from cross-sectional design studies becomes necessarily correlational in nature, and this should be complemented by longitudinal studies in which chronological changes in L1 and L2 reading performance are carefully observed.

5. Explanations for the Possible Lack of L1 Reading Transfer to L2 Reading

Suppose that there are some kinds of constraints on the transfer of L1 reading skills

to L2 conditions. What then constitutes such constraints? One explanation is that L2 readers are simply stuck with difficult lexis and syntax and fail to understand the literal meanings of individual words and sentences. If they do not know the meaning of “ashes” in *The spy quickly threw his report in the fire, and the ashes floated up the chimney*, for example, naturally they cannot make the necessary bridging inference that “the report burned to ashes.” Similarly, relevant background concepts in the long-term memory may be less adequately activated in L2 reading than in L1 reading, because L2 learners do not know the L2 labels for those concepts. These cases illustrate the problem of relevant L2 knowledge deficiency, and it is expected that expansion of L2 linguistic knowledge will bring about more L1 reading transfer. This knowledge-deficiency explanation, however, may not be the whole picture.

L2 working memory capacity may provide another explanation for the possible lack of transfer; even when readers know all the relevant lexis and syntax, still their comprehension may be constrained by how efficiently they can retrieve and manipulate such linguistic knowledge. Working memory is currently conceptualized as a cognitive arena in which incoming information is processed and temporarily stored (e.g., Just & Carpenter, 1992). Given its limited capacity, working memory is subject to trade-offs between storage and processing functions and also between various cognitive operations competing for the processing workspace. If “lower-level” processes (e.g., word identification) take up much of the limited capacity of working memory resources, fewer resources remain for “higher-level” processes (e.g., prediction, inference). This suggests that improvement of L2 processing efficiency will permit the transfer of cognitive processes developed in L1 by freeing more working memory resources for these processes.

With regard to the relationship of L2 linguistic knowledge and its processing efficiency to universal higher-level cognitive processes, Carpenter et al. (1994, p. 1111) point out that “less efficient (or less well-developed) L2 component processes may rob other processes not just of good data (Perfetti, 1985) but also of cognitive resources available (Frederiksen, 1982).” The knowledge-deficiency explanation and the working memory (processing efficiency) explanation are mutually complementary, and the relative contribution of each (and still other factors yet to be identified) should be validated against relevant data.

6. Pedagogical Implications

The transferability issue has important implications for L2 reading pedagogy, especially in terms of comprehension strategy instruction. The recent literature on this theme (Carrell, 1988; O'Malley & Chamot 1990; Oxford, 1990) is full of pedagogical recommendations for the explicit teaching of comprehension strategies in L2 reading, but little attention has been paid to the fact that at least some strategies are already fully acquired in L1 reading. If reading skills transfer across languages in accordance with the im-

provement of L2 knowledge and its control, the focus of L2 reading instruction needs to be placed upon improving linguistic competence rather than on teaching comprehension strategies per se (Alderson, 1984, p. 4). Suppose that some effective reading strategies may not have been acquired in L1 reading, “one might most efficiently teach [these] reading strategies in the first language, and expect them to transfer automatically to the foreign language” (ibid., p. 5). The present pedagogical suggestions need to be reexamined with reference to future research findings on L1 reading transfer.

7. Conclusion: Reformulating Research Questions for Future Investigations

This paper has attempted to examine major theoretical assumptions and methodological issues in research into the L1 and L2 reading relationship. Previous studies on this theme have identified theoretically and pedagogically interesting notions, such as constraints on L1 reading transfer, the linguistic threshold, and interaction of L1 reading and L2 proficiency in L2 reading, and related empirical findings have been accumulated. This line of research, however, has been seriously limited in that it has failed to distinguish theoretically different issues, especially between the relative importance issue and the transfer issue. For the advancement of the field, therefore, research questions need to be reformulated. In what follows I propose a tentative list of alternative research questions (RQs) for future investigations.

RQ 1. Does a target reading behavior (e.g., bridging inference) differ depending on the language in which one reads (L1, L2)? (L1 vs. L2 → target reading behavior)

RQ 2. Does a target L2 reading behavior differ depending on the L2 linguistic proficiency level? (L2 linguistic proficiency level → target L2 reading behavior)

RQ 3. Does the amount of transfer of a target L1 reading behavior to L2 reading increase in accordance with the improvement of L2 linguistic knowledge? (L2 linguistic knowledge → transfer of a target L1 reading behavior to L2 reading)

RQ 4. Does the amount of cross-linguistic transfer of a target reading behavior increase as L2 working memory capacity (or L2 processing efficiency) increases? (L2 working memory → transfer of a target L1 reading behavior to L2 reading)

RQ 5. Is the transfer of reading strategy training observed across languages? (strategy instruction in L1 → the use of the target strategy in L2)

RQ 6. What is the relative importance of L2 linguistic knowledge and the corresponding L1 reading ability in explaining a target L2 reading behavior (e.g., answering inferential questions)?

Note that the first five research questions concern the transfer issue: RQ 1 and RQ 2 can be investigated in the same study for primarily providing descriptive data for interlingual reading transfer; RQ 3 and RQ 4 are included to provide explanations for such (non-) transfer; and RQ 5 examines the transfer of instructional intervention across languages. RQ 6 deals with the relative importance issue as applied to a specific cognitive process or skill. As discussed earlier, we need to study specific componential processes and skills of reading rather than global L1 and L2 reading performance, because global comparisons cannot reveal the transfer of each componential skill, and because the answers to the above reformulated research questions will probably vary from one skill and process to another.

Notes

- 1 In this article, L2 linguistic knowledge and L2 proficiency are used interchangeably.
- 2 These two types of skill correspond to “basic interpersonal communicative language skills” and “cognitive/academic language skills” in bilingualism research (Cummins, 1980).
- 3 Note that some statisticians (e.g., Zhang, 1992) exercise caution in using multiple regression even as a basis for judging the relative importance of predictor variables.
- 4 Positive L1 and L2 reading correlations have been observed in other studies which simply examined their relationship without considering L2 linguistic knowledge (e.g., Groebel, 1980; Carson et al., 1990; Wagner et al., 1989).
- 5 Compare this with the research on morpho-syntactic transfer in which researchers now never rely on global correlations between L1 and L2 grammar tests, but rather look at specific constructions (e.g., passive).
- 6 This example was taken from Singer & Ritchot (1996, p. 733).
- 7 Cummins (1979) points out that in bilingual development there are two thresholds: “The attainment of a lower threshold level of bilingual competence would be sufficient to avoid any negative cognitive effects; but the attainment of the second, higher, level of bilingual competence might be necessary to lead to accelerated cognitive growth” (p. 230).
- 8 In terms of statistical data analysis, the threshold level has been viewed in previous studies either as the point at which the correlation between L1 and L2 reading reaches a statistically significant point or as the point at which the relative importance of L1 reading and L2 linguistic proficiency is reversed. These operational definitions, however, do not adequately capture the level beyond which L1 reading transfer occurs.
- 9 If a significant difference is observed between the advanced and the less-advanced L2 learners in their performance in L1 reading, this factor needs to be treated as a covariate in comparing their L2 reading performance.

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