

PART I

THEORETICAL FOUNDATIONS



# 1 Introduction

The rapid internationalization of business and industry, together with a sustained immigration influx, has resulted in an unprecedented interest in enhancing second language (L2) learning. In seeking better approaches to second language teaching, as well as L2 subject-matter instruction, applied linguistics has witnessed major advances in both theory and practice. As a consequence, research on L2 reading, a recognized area of applied linguistics, also has made impressive gains in quality and quantity.

As the title *Insights into Second Language Reading* implies, this book's intent is not a simple review but an effort to establish a foundation for expanding current L2 reading research within well-defined frameworks, and to establish a research base that can facilitate productive innovations in second language reading instruction. These objectives have been approached through a series of analyses: synthesizing ongoing issues in first language (L1) reading literature; examining possible implications of L1 research for conceptualizing L2 reading competence and its acquisition; exploring means of incorporating established L1 research paradigms in empirical examinations of L2 reading; and identifying troublesome gaps in L2 reading research. Because, by definition, learning to read a second language involves two or more languages, the analyses are cross-linguistic, exploring both L1 and L2 characteristics as possible sources of individual differences in L2 reading development.

Although the book is not designed as a classroom teaching manual, basic principles for translating research into practice, and pedagogical implications of research findings, are included. Descriptions of L2 reading processes are incorporated under the assumption that a clear understanding of the multiple complexities inherent in L2 reading development will enable language teachers to identify the range of difficulties L2 learners are likely to encounter in learning to read in a new language, discriminate potential sources of learning difficulties more precisely, and restructure instruction in beneficial ways. Conceivably, a



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broader pathways to reading mastery in a new language will also be useful in tailoring pedagogical strategies to accommodate the varying needs of individual learners.

### Basic concepts and constructs

Although studies on L2 reading have expanded considerably, only recently has serious attention been given to the mechanisms governing knowledge increase and performance effectiveness. The newer theoretical ground, moreover, has evolved largely from implications derived from L1 studies. Although this was a logical point of departure, "borrowed" research paradigms do not seem capable of capturing the unique attributes of L2 reading. Because L1 and L2 reading differ fundamentally, when L1 precepts are extrapolated without due regard for the requirements stemming from these differences, conceptual oversights may occur, and subsequent applications to practice could be weakened.

Logic suggests that in-depth analyses of the complexities associated with L2 reading should help determine where its theories must depart from accepted L1 constructs and – even more critically – pinpoint new research objectives. Both L2 learning and reading are complex, multidimensional constructs, and their respective research literature reflects a broad base of interdisciplinary perspectives. It should be noted, however, that in this book, the primary orientation is psycholinguistic. This is in no way meant to diminish the merits of other perspectives; rather, it is simply a matter of focus. To illustrate the psycholinguistic frame of reference in the analyses, the main concepts and constructs are briefly defined.

### The nature of reading competence

Reading competence is perhaps the most fundamental construct in reading research. The term *competence* is used inclusively throughout the book in reference to linguistic knowledge, processing skills, and cognitive abilities. Reading competence and reading ability, moreover, are used interchangeably. Conceptualized in several different ways, diverse definitions exist, but all stem from the same basic assumption that successful comprehension emerges from the integrative interaction of derived text information and preexisting reader knowledge. Put simply, comprehension occurs when the reader extracts and integrates various information from the text and combines it with what is already known. Each of these operations is generally used to define reading competence, although from different perspectives.



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The cognitive view, as an illustration, posits that reader–text interaction can be subdivided into three processing clusters. First, in *decoding*, linguistic information is extracted directly from print. Next, in *text-information building*, extracted ideas are integrated to uncover text meanings. Finally, in *situation-model construction*, the amalgamated text information is synthesized with prior knowledge (e.g., Carpenter, Miyake, & Just, 1994; Kintsch, 1998; Miller, 1988; Perfetti, 1994). Thus, in this view, reading success is governed by three competency groups: visual information extraction, incremental information integration, and text-meaning and prior-knowledge consolidation. Traditionally, reading research has pursued individual competencies within each cluster, giving little attention to their functional, as well as developmental, interconnections.

From a developmental perspective, Gough and his associates (Gough & Tunmer, 1986; Hoover & Gough, 1990) suggest a different way of defining reading competence. Their contention is that, although learning to read entails the mastery of two basic operations – decoding and comprehension – they do not develop in parallel. Both reading and listening share similar processing requirements, and children amass comprehension skills in the course of oral language development. By the time they begin to read, therefore, their listening comprehension ability, in most instances, is already well developed. In principle, children should be able to transfer their oral comprehension ability to reading, but in actuality, they cannot do so until they attain sufficient decoding efficiency. However, decoding, unlike comprehension, does not evolve as a corollary of speech, thus requiring substantial print-information processing experience. Lacking decoding competence, children have insufficient information to construct text meaning. And, in the absence of automaticity, the attention required for decoding substantially detracts from what otherwise would be available for comprehension. Thus, decoding creates a threshold for exploiting the comprehension competence children bring to their reading acquisition processes.

Reasoning from a functional perspective, Carver (1990, 1997, 2000) proposes yet another way of conceptualizing reading competence. He believes the purposes for which texts are read determine the manner in which their information is processed. He describes five reading "gears," serving disparate purposes, on a continuum of cognitive complexity. Consider, for example, three goals in text reading: locating lexical information (scanning), detecting main ideas (basic comprehension), and acquiring new concepts (learning). Cognitively, reading for lexical information is the least challenging, involving simple lexical access. Reading for basic comprehension is somewhat more taxing



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because it necessitates, beyond lexical access, syntactic analysis for information integration. Acquiring new concepts in learning, is the most demanding of the three. According to Carver, processing requirements increase as the "reading gear" shifts upward – and, as a consequence of greater task complexity, the reading rate decreases. Hence, he concludes that indices of comprehension success vary in accordance with reading purposes. In the less demanding, lower reading gears (scanning and skimming), competence implies speedy information extraction. In the higher gears, however, accurate and complete text understanding is more important than speed. The clear implication is that why, and how, texts are read must be considered in determining reading competence.

To sum up, then, reading competence can be defined from multiple perspectives. The cognitive view, reflecting the interactive nature of reading, emphasizes three operations as the critical core of competence: decoding, text-meaning construction, and assimilation with prior knowledge. The developmental perspective, in contrast, highlights sequential mastery of two operations – decoding and comprehension – and their functional interdependence. The reading gear theory, moreover, suggests a third factor, reading purpose, to be incorporated in defining the core construct.

In exploring L2 reading development, these diverse perspectives also need to be incorporated. Clarifying the construct's multilayered complexities is essential for two reasons. Because L2 literacy learning commences at various ages and under diverse circumstances, we can reasonably assume that considerable variances exist in prior literacy-learning experience. Without a reliable basis for determining what has been mastered in L1, empirical examination of its influence on L2 reading behaviors is not possible. In addition, the manner and rate of L2 reading development also are likely to differ among learners because L2 reading instruction begins at different points in their L2 development. Hence, without a precise construct definition, L2 reading competence cannot be differentiated from L2 linguistic proficiency. Lacking a fine-tuned description of the progressive stages of L2 reading acquisition, tracing developmental changes at a given point in time is also prohibitive.

# Defining L2 readers

The term *L2 reading* covers a broad span, and its use is excessively general, often overlooking important differentiation, which has strong impacts on how learning to read proceeds in a second language. For example, there are several distinct *L2* reader populations, including



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preschool children without prior literacy experience, school-aged children with disparate L1 literacy experience, adult learners literate in their L1, and adult learners nonliterate in their L1. L2 linguistic knowledge is a common variable in each of these groups, but the developmental profiles may deviate in three critical dimensions: L1 literacy, cognitive maturity, and conceptual sophistication. Each of these categories interacts with contextual variations relating to where, how, and why L2 literacy is being pursued. For example, the learning experience of six-year-old native Chinese-speaking children, acquiring reading skills in English as a second language in an American public school, is strikingly different from that of native English-speaking students taking an elementary Chinese course, to fulfill a foreign language requirement, in an American university.

Logically, an essential first step in gaining a clear understanding of L2 reading development is to determine the particular learning characteristics of the specific group involved. Similarly, in considering research implications for L2 reading instruction, it is equally imperative to clarify the nature of the target L2 readers. In the interest of clarity, it is important to note that in the subsequent chapters, "L2 readers" generally refers to cognitively mature individuals already literate in their respective first languages learning to read a second language. Other L2 reader cohorts are described separately wherever pertinent.

### Differentiating L1 and L2 reading

Once a target L2 reader population has been defined, differences between L1 and L2 reading can be determined. In the focal group used for this volume – literate adult L2 learners – three major distinctions separate the two. Unlike beginning L1 readers, L2 learners can draw on their prior literacy experience, which potentially provides substantial facilitation. In addition, beginning L1 readers, through oral communication, have already established a basic linguistic foundation by the time formal literacy training commences. In contrast, L2 reading instruction, more often than not, begins before sufficient L2 linguistic knowledge has been acquired. Hence, the initial focus in literacy training necessarily differs. Whereas L1 instruction emphasizes decoding to enable children to link print with oral vocabulary, L2 instruction focuses on linguistic foundation building. Further, as indicated earlier, L1 reading assumes that information processing occurs in a single language, whereas L2 reading necessitates dual-language involvement – another factor separating L1 and L2 reading.

In view of these distinctions, it is obvious that L2 research must go beyond the standard array of variables essential in L1 reading and



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emphasize the specific constituents that define L2 reading competence. In particular, serious attention should be given to the special conditions associated with the preceding three factors – prior literacy experience, limited linguistic sophistication, and dual-language involvement because collectively they form a base from which to further probe L2 reading issues. Research agendas, as an illustration, can be generated simply by converting well-established L1 reading suppositions into questions incorporating L2 points of view. For example, one of the fundamental premises underlying contemporary reading theories is that text understanding results from the integrative interaction of textual information and preexisting reader knowledge. Inasmuch as L2 readers have prior literacy experience, the premise can be turned into a question: In what ways does L1 reading experience affect integrative interaction in L2 reading? An additional question could be derived from the same premise, based on another L2-specific factor, limited linguistic sophistication: What are the impacts of L2 proficiency on integrative interaction during reading comprehension? With respect to dual-language involvement, a third question might be, What are the minimal L1 and L2 competency requirements necessary for integrative interaction to occur during L2 reading? Strategies of this sort are, in essence, simply a matter of utilizing what we know about L1 reading to elucidate what we do not know about L2 reading.

In view of the complexities inherent in reading competence, numerous research questions could be formulated by evaluating the validity of L1 reading principles on L2 issues – from L2 vantage points. In short, L1 reading research has yielded a number of significant insights. A clearer understanding of L2 reading, however, cannot be attained by simply extrapolating L1 percepts – both conceptual and methodological – without due regard for the dominant factors characterizing L2 reading.

# Principal approaches

# The benefits of cross-linguistic analyses

Potential variations in L2 processing behaviors – stemming from L1 properties – also should be central in L2 reading research. The importance is manifested in the growing interest in cross-linguistic variances in language acquisition and processing. Child-language studies demonstrate that children are sensitized to the particular features of their native languages relatively early. Such linguistic conditioning



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not only channels subsequent language development but also molds the cognitive procedures accommodating its structural and functional peculiarities. Experimental studies with skilled readers have repeatedly shown that information-processing procedures at various processing levels – word recognition, sentence parsing, and discourse processing – systematically differ across languages (e.g., Katz & Frost, 1992; Mazuka & Itoh, 1995; Saito, Masuda, & Kawakami, 1999; Taft & Zhu, 1995; Vaid, 1995).

Curiously, cross-linguistic variance, despite its centrality, has attracted relatively little attention among L2 reading researchers, although interest is mounting. The neglect may have been attributable, in part, to the heavy reliance on L1 theories, without essential allowances for important L1–L2 distinctions. L1 research concerns are restricted to monolingual processing, and consequent cross-linguistic issues are beyond its scope. Given that two or more bodies of linguistic knowledge - together with their corresponding processing skills are involved in L2 reading, it is doubtful whether a comprehensive understanding of its anatomy can be achieved through investigations of its monolingual perspectives alone. Ideally, L2 research should address learners' L1 and L2 processing experiences in tandem, examining their probable interplay as well as subsequent conjoint impacts on L2 reading development. The central assumption underlying the crosslinguistic approach is that L1 experience embeds habits of mind, instilling specific processing mechanisms, which frequently kick in during L2 reading. Diversity in L1 experience, therefore, can induce qualitative procedural differences, whereas variances in L2 experience may yield quantitative efficiency differences. As a consequence, inferences about L2 reading competence - based solely on either qualitative or quantitative performance differences – often are inadequate and misleading. Cross-linguistic analyses can illuminate the subtle ways in which L1 and L2 experiences meld and interface during L2 reading development. Presumably, the resulting insights derived from such bifocal analyses may explain competency differences among L2 readers with substantially greater precision.

### Advantages of competency dissection

To recapitulate, reading involves continual extraction and incremental integration of text information. Successful comprehension, therefore, depends on both linguistic knowledge and the skills to utilize the knowledge for text-meaning construction. Theories of L2 reading, therefore, should elucidate the specific knowledge and processing skills



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that underlie successful comprehension in a given language. Linguistic knowledge and its corresponding processing skills do not, of necessity, develop concomitantly. As a result, it is important to treat knowledge and knowledge use as separate constructs, and to devise procedures for assessing them independently.

In L1 research, this distinction is widely recognized. For example, empirical evidence confirms that decoding efficiency varies considerably among beginning L1 readers who have attained normal oral language development (e.g., Perfetti, 1985; Stanovich, 1991). The findings make it plain that oral vocabulary knowledge does not automatically equate with an ability to recognize it in print. Although both are essential in efficient information processing, knowing something and knowing how to use it effectively are discrete capabilities. The implication of these competency distinctions is clear. Because processing inefficiency can be attributable to either a lack of relevant knowledge or underdeveloped usage skill, or both, without fine-tuned component analyses, it is difficult to determine the precise root of the problem. However, this differentiation has not been fully acknowledged in L2 reading research, resulting in the widespread but erroneous belief that processing skills improve automatically as a byproduct of increased linguistic knowledge.

L1 reading studies also suggest that two forms of linguistic knowledge – orthographic and phonological – independently influence English decoding efficiency (e.g., Barker, Torgesen, & Wagner, 1992; Stanovich, 2000; Stanovich & West, 1989). Inasmuch as the two do not develop concomitantly with other aspects of linguistic knowledge (e.g., Gough & Tunmer, 1986), we cannot simply assume that all beginning readers have acquired the requisite knowledge at the time they begin learning to read. Even if they have, there is no assurance that they will master the complementary skills to use the knowledge during decoding. The knowledge–skill distinction is particularly critical, because linguistic knowledge varies widely among L2 learners.

In sum, four major assumptions support the importance of competency dissection: Linguistic knowledge and language processing skills are related but distinct competencies; discrete aspects of linguistic knowledge contribute disparately to comprehension; linguistic knowledge is a necessary but insufficient condition for efficient text-information processing; and requisite linguistic knowledge, as well as its corresponding processing skills differs across languages. For these reasons, to the extent possible, a clear distinction has been made between linguistic knowledge and processing skills, in the subsequent analyses of L2 reading competence.



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### General organization

This volume's primary objectives are to establish a foundation for expanding current L2 reading research by reexamining accepted L1 reading concepts from L2 points of view and, in so doing, to uncover new research agendas particularly relevant to L2 reading development. To achieve these goals, the major component operations in reading were subjected to sequential analyses, including syntheses of existing L1 reading literature, summaries of L1 research implications, explorations of L1 and L2 research integration, and suggestions for future L2 research agendas. The theoretical underpinnings used in conceptualizing and analyzing L2 reading competence are described in Chapter 2. Thereafter, the content is organized, first, according to processing components, and second, by major research issues.

The six chapters in Part II examine the component competencies essential to reading comprehension, illustrating within each how text information is extracted, integrated, and understood. Chapter 3 deals with word recognition, explaining its function and procedure in the context of reading. Chapter 4 delineates the symbiotic relationship between vocabulary and reading comprehension, incorporating an indepth analysis of the nature and acquisition of word-meaning knowledge. Chapter 5 explores the parameters of intraword awareness and their relation to lexical learning and processing, explaining the facilitative benefits of such awareness in word-knowledge development through reading. Next, the processes involved in intrasentential information integration are described. Chapter 6 begins with an analysis of the linguistic sensitivity underlying sentence processing and then progresses to an examination of its relationship to performance variation. Research on discourse processing – how text is progressively reconstructed in the reader's mind – is summarized in Chapter 7. The chapter also deals with text coherence building and inference, as well as the contributions of background knowledge to text comprehension. Chapter 8 clarifies the impacts of text-structure variables on discourse processing by reviewing the distinct properties of narrative and expository texts.

In the interest of a balanced view, Part III presents a holistic portrayal of reading, emphasizing the interconnections of components described in the previous chapters. Chapter 9 focuses on individual differences in reading acquisition and performance. Using systematic comparisons of processing behaviors among good and poor readers, it considers the cognitive and linguistic requirements for proficient reading as well as their comparative effect on performance variations. Chapter 10 examines the nature of strategic reading, elaborating on