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Extending the compensatory model of second language reading

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Abstract

Bernhardt (2005) proposed a compensatory model of second language reading. This model predicted that 50% of second language (L2) reading scores are attributed to second language knowledge and first-language (L1) reading ability. In this model, these two factors compensate for deficiencies in each other. Although this model explains a significant portion of L2 reading, much remains unknown. In particular, the compensatory model does not specify the relative contributions of strategic knowledge or background knowledge in L2 reading. Consulting the extant L2 reading literature, this paper proposes a model of second language reading, extending the compensatory model of second language reading. The proposed model predicts the shifting contributions to L2 reading of L2 language knowledge, L1 reading ability, strategic knowledge, and background knowledge. The paper concludes by offering a framework to investigate the explanatory power of the proposed model.
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1. Introduction

Views of second language reading have changed over the past thirty years. Until the late 1970s, second language (L2) reading was regarded solely as a language-based, bottom-up process, with comprehension resulting from successful letter, word, and sentence decoding. Then, riding momentum from first-language (L1) reading research that explained how a reader's knowledge influences lower-level processing (e.g., Goodman, 1968), psycholinguistic notions of reading took hold in L2 settings (e.g., Coady, 1979). With the collapse of purely one-way explanations of reading and the creation of new models in L1 research (e.g., Rumelhart, 1977), interactive concepts, which describe reading as a combination of simultaneous bottom-up and top-down processing, entered the L2 landscape (Carrell et al., 1988).

Bernhardt (1991, 2000, 2005) applied interactive concepts to create formal models of second language reading. The most recent version, the compensatory model of second language reading (henceforth, CM), reflects Stanovich's (1980) concept of compensatory processing, where deficiencies in any knowledge source can be overcome by relying on other knowledge sources (e.g., readers applying contextual knowledge to aid poor word recognition skills). The

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CM utilized this compensatory notion to reflect a body of L2 reading literature showing that L2 language knowledge (e.g., grammar and vocabulary) and L1 reading ability (e.g., knowledge of text structure) play critical roles in second language reading. This model predicts that 50% of L2 reading scores are explained by these two factors.

Although the CM (Bernhardt, 2005) accounts for half of the variance in L2 reading, much remains unknown. Bernhardt listed reading comprehension strategies and background knowledge as potential sources to account for the unexplained variance in the model, and recent research suggests that these two components account for substantial variance in L2 reading. Synthesizing literature surrounding L2 language knowledge, L1 reading ability, reading comprehension strategies, and background knowledge this paper proposes to extend the CM by illustrating and predicting how these components contribute to second language reading at two different stages in L2 development.

In positing the model, this paper consists of four sections. First, the L2 compensatory model (Bernhardt, 2005) is reviewed, along with recent literature examining the roles of L2 language knowledge and L1 reading ability. Then, the strategic knowledge and background knowledge components in the proposed model are presented. The third section presents the model. The final section offers suggestions on ways to research the model.

2. Relevant literature

2.1. The second language compensatory model

The L2 compensatory model (Bernhardt, 2005) is a product of a long held theoretical debate. For decades, scholars discussed issues related to the possible contributions of L1 reading ability to L2 reading. L1 reading ability includes among other variables, knowledge of the letter-to-sound mappings, how texts are structured, how words and sentences are organized, and beliefs about the purposes of reading (Bernhardt, 2005: 140). L2 language knowledge includes vocabulary and grammar knowledge, impact of cognates, the linguistic distance between L1 and L2, among other factors. Two hypotheses dealing with these factors were proposed in the late 1970s. The first, the Linguistic Inter-dependence Hypothesis (Cummins, 1979), predicted that strong readers in L1 will be strong readers in L2. In this view, readers successfully apply to L2 texts the skills and strategies developed during first-language literacy experiences. The second, the Short-Circuit hypothesis (Clarke, 1980), stated that before readers can make use of their L1 abilities, they must first acquire a certain amount of L2 proficiency. Without meeting a threshold of target language knowledge, L2 readers will not be able to utilize a repertoire of L1 strategies. A number of studies attempted to address these hypotheses in the late 1980s and throughout the 1990s (e.g., Bernhardt and Kamil, 1995; Bossers, 1991; Brisbois, 1995; Carrell, 1991; Hacquebord, 1989). Summarizing the findings from this line of inquiry, Bernhardt (2005) wrote:

> Considering that cognate and noncognate languages were studied; both children and adults were considered; and different measurement schemas employed; the studies produced remarkably consistent findings: They all estimated the contribution of first-language reading to second language reading to be between 14% and 21% and the contribution of language knowledge to second language reading performance to be around 30%. (p. 137)

Bernhardt (2005) pooled these findings to form cornerstone components for the L2 compensatory model (CM). The model is composed of three components—L1 literacy (i.e., L1 reading ability), L2 language knowledge, and unexplained variance—that are plotted over an *x*-axis of *developing proficiency* and a *y*-axis of *comprehension*. Two components of the CM, L2 language knowledge and L1 reading ability, predict 50% of second language reading comprehension. Among this explained portion, 30% results from L2 language knowledge and up to 20% is due to first-language reading abilities, based on the compensatory notion developed by Stanovich (1980). In this way, the CM represents L2 reading as a "juggling or switching process in cognition" (Bernhardt, 2005, p. 140), whereby, for example, a reader's L1 reading ability can compensate for L2 language knowledge deficiencies.

The CM informs L2 reading in that it brings to the forefront critical components—L2 language knowledge and L1 reading ability—and places them within a framework of compensatory processing. The idea of readers consulting multiple knowledge sources in the act of comprehension is a concept that continues to be explored and refined in L1 reading (e.g., Pressley and Afflerbach, 1995; Walczyk et al., 2007) and offers an important theoretical perspective for second language reading because of the various difficulties L2 readers experience. For example, the literature is rife with accounts of second language readers having slower reading rates in L2 than in L1 (e.g., Chen and Donin, 1997), lacking appropriate cultural schemata (e.g., Droop and Verhoeven, 1998), and scoring lower on L2 reading