foot identifies and explores influences on changes in external language. In particular, he demonstrates how speakers use their internal language or grammars to affect external languages (chapter 6, "The Use and Variations of Grammars"). We come to a better understanding about how changes in word order in language affect the process of language acquisition. He also illustrates the various interactions between coexisting grammars in social contexts. Numerous examples of these specific principles help bring greater clarity to the language change process.

As the rather inductive logic of this book unfolds, moving from internal to external, local to global influences, chapter 7, "The Eruption of New Grammars," presents the manner in which major, sweeping shifts in language occur. Abrupt changes in language, known as creolization, happen under unusual circumstances. This generic term and process, creolization, is often viewed through egocentric and ethnocentric perspectives to explain its emergence and existence.

Regardless of the "what" and "how" of creole, its emergence happens when cultures collide or when catastrophic or at least unusual events occur in society. Lightfoot seizes the existence of creole to gain a unique glimpse into the dynamics of how new languages emerge. He smartly identifies the process of this rather amplified version of new language acquisition.

The foundation for these swift and sweeping changes again resides with children. These flag bearers of new language and the enduring adults rely on some basic neurological and biological principles. We tend to most notice in our environment that which stands out as different. By this token, children and adults most notice novel stimuli.

We understand that children acquire language to some extent by what is called cue-based learning. Children scan their environment for linguistic cues that fit the current context, select from a sort of global language menu, and notice novel cues. On a practical level, language survives when it serves and fits a context. But new language is acquired in part through the process of recognizing novel stimulation. Recognition coupled with practicality allows new languages to emerge and survive, at least for a time. Lightfoot illuminates the winding path that is new language.

The conclusion and manifesto make up the final chapter, "A New Historical Linguistics." Here Lightfoot aptly presents effective methods for studying languages of the past, present, and potential future. By finding the common threads of language structure between languages and over time, we can trace how internal and external languages interact in a dance that leads to new languages over and over in this perpetual evolution. The study requires the use of theories of grammatical structure, grammatical variation, and language acquisition and the variables that influence these factors.

In this book, David Lightfoot presents a thoughtful and thorough analysis of how new languages develop. Technically precise with these complex matters, he presents countless case examples, diagrams, and illustrations to assist in convincing the reader that his theory about new language is accurate. His beliefs are fresh, thought provoking, and well grounded.

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EXPLAINING READING ACQUISITION AND DEVELOPMENTAL DYSLEXIA IN ALPHABETIC SYSTEMS

Reading Acquisition and Developmental Dyslexia

By Liliane Sprenger-Charolles, Pascale Colé, and Willy Serniclaes. Psychology Press, 2006. 247 pp. Hardcover, $53.95.

This book provides a tentative framework to account for reading acquisition and developmental dyslexia in alphabetic systems. Instead of contrasting languages that have fundamentally different writing systems (e.g., alphabetic vs. logographic families), essentially it compares orthographies based on similar principles. A relevant contribution of this book is that it reviews the literature on reading acquisition and developmental dyslexia, and the book discusses studies carried out not only in English but also in other languages. Therefore, the authors provide a complete description of the core differences between English orthography and that of other languages, particularly French, German, and Spanish, while highlighting the features of these languages that might influence how they are read and acquired. This attempt is well justified, given the authors' conclusion that reading research has been limited by its near restriction to English-speaking subjects, despite the aim of generalizing to all writing systems.

The book provides an excellent overview of research on reading acquisition and developmental

dyslexia. In chapter 1 the authors establish the need to take into account what is known about skilled reading. They examine studies on skilled readers, particularly studies that have been designed to analyze the relationship between written-word identification and reading comprehension. These studies show that written-word identification is largely autonomous and therefore that one of the major objectives in learning to read should be to acquire highly automatic reading reflexes. This is a critical process and explains why many children experience difficulties when they are learning to read. The reading problems of children called "poor readers" or "dyslexics" stem primarily from difficulty with identifying written words. Subjects with reading disabilities rely too heavily on context to identify written words because they do not yet process written words automatically.

The acquisition of these highly automatic reading reflexes could be influenced by the linguistic environment. In order to evaluate this assumption, the authors examine the psycholinguistic literature, reviewing cross-linguistic studies to assess which features are general across languages and which depend on the individual characteristics of each language. They also examine longitudinal studies to assess developmental trends. Chapter 2 provides a survey of normal reading acquisition in different alphabetic writing systems. To understand the problems facing beginning readers when they have to identify written words, it is necessary to determine precisely what is involved in reading acquisition in alphabetic systems compared with other writing systems. For this analysis, the authors adopt the schematic description developed by Ziegler and Goswami (2005): the availability, consistency, and size of units (or granularity) that connect the orthographic form of a word to its phonological form. Based on this framework, the book's main assumption is that the procedures used in learning to read depend on the efficiency of the sublexical reading route (general principle), which in turn depends on the degree to which the writing system represents the spoken language it encodes (language specific). On the other hand, the transparency of the writing system has been suggested as a major variable affecting the difficulty of learning to read (e.g., Ziegler & Goswami, 2005). So, for instance, differences have been observed between Anglophone and non-Anglophone beginning readers because the dissociation between the sublexical and lexical procedures is greater for English-speaking children than for children who speak other languages. The authors synthesize other differences found in cross-linguistic studies but fail to give a more complete review of studies conducted in orthographies more regular than English or French: "The nature of the units used by children in reading depends on their importance and their consistency in the language, that is, due to inconsistencies of grapheme–phoneme correspondences beginning English readers make greater use of rhyme units" (p. 68).

Therefore, awareness of onsets and rhymes may be necessary for English children to read words but not for children who are learning in a shallow orthography (e.g., Spanish). Consequently, the review of studies involving shallow orthographies is very valuable for examining the effects of subsyllabic (intrasyllabic) units on lexical decision performance in normally achieving readers and those with reading disabilities. In fact, the authors recognize that, given that most studies have focused on letter sound versus rhyme units, it would be worthwhile to thoroughly examine the role of other units such as the syllable and the morpheme. These units are assumed to be conditioned both by their weight and consistency in the language and by the child's reading level. Jiménez, Álvarez, Estévez, and Hernández-Valle (2000) found that neither normally achieving Spanish readers nor children with reading disabilities seem to use mappings that involve intrasyllabic units in lexical access, relying more on the phonemic level: "Syllable-based processing seems to play a more important role in languages where syllable boundaries are clear as they are in French and Spanish" (p. 69).

Regarding this point, valuable studies have been conducted in Spanish, because Spanish is even more orthographically regular than French. It has been empirically demonstrated that syllables are computed during the processing of Spanish printed words in adults. In addition, the studies provide evidence that syllable effects are independent of the presence or absence of bigram troughs or letter clusters. This means that a syllable would then be a mentally represented unit, participating in visual word recognition that activates lexical units (Carreiras, García-Albea, & Sebastián-Gallés, 1996). One piece of evidence for the existence of syllabic processing in Spanish children has come from studies that manipulated the positional syllable frequency (i.e., the number of times that a syllable appears in a particular position in a word). For instance, Jiménez, Guzmán, and Artiles (1997) analyzed the effects of positional syllable frequency on visual word recognition in the context of learning to read. Reliable effects of positional syllable frequency were found in both reaction times

and latency responses and also in the misreading of pseudowords. Also, the role of the syllable unit in visual word recognition has been studied in Spanish children with reading disabilities who received computer-assisted instruction (Jiménez et al., 2007).

The studies reviewed in this book about how children use morphological units provide interesting findings. Children rely on morphological chunks to read, and this occurs regardless of the orthographic transparency of the language. However, until an advanced school grade, the processing of such units continues to be influenced by phonological factors. Nevertheless, the authors recognize that this topic of research has been addressed in only a small number of studies, most of which involved English-speaking children and none of which were cross-linguistic. Therefore, they conclude that further research is clearly needed in this domain.

> Whatever the opacity of the orthography, it has nonetheless been shown that early reliance on phonology-based reading procedures constitutes a bootstrapping mechanism for future reading acquisition. In addition, among the prereading abilities linked to reading acquisition, phonemic awareness has been shown to be the best predictor of future reading level, and evidence for the unique contribution of syllabic awareness and rhyme awareness is very limited, even in English. (p. 69)

However, many of the studies reviewed in this section, although they examined many different languages, did not analyze the relative importance of the complexity of syllable structure and task differences in assessing the link between phonological awareness skills and reading. For instance, Stahl and Murray (1994) found that the ability to manipulate onsets and rimes within syllables is more strongly related to reading once an adequate level of letter recognition has been achieved. Therefore, they suggested that knowledge of letter names may provide children with a foundation for learning to manipulate onsets and rimes and that this ability seems to help children with word recognition. However, Jiménez and Venegas (2004) found that knowledge of the names of Spanish letters in illiterate adults does not appear to be particularly relevant in learning to manipulate onset and rimes and that this ability does not contribute greatly to word recognition. They concluded that awareness of onsets and rimes may be necessary for English children to read words but not for Spanish adults.

Chapter 3 focuses on the manifestations of developmental dyslexia, and the authors review both cross-linguistic and longitudinal data to assess the stability of dyslexic performance patterns across languages and over time as reading skills develop. In addition, they examine the results of diverse studies (groups studies, single case studies, and multiple case studies) conducted in various languages to evaluate the reliability and prevalence of dyslexic performance patterns. I think that the chapter is examining an important topic, which is the nature of the variation in dyslexic subtypes as a function of depth of orthography and the use of accuracy and speed measures. In the case of multiple-case studies conducted in languages with a deep orthography, the classification has been based on comparisons with both chronological age and reading level controls, and the efficiency of the lexical and sublexical reading routes has been assessed using the clearest indicators of the use of either high-frequency irregular words or pseudowords. However, not all studies included the standard measure of lexical processing (i.e., irregular word reading) because it is impossible to find enough irregular words in some languages. For instance, Spanish is even more orthographically regular than French. In fact, research generally supports the hypothesis that English has a higher incidence of phonological dyslexia than surface dyslexia, but we found the opposite pattern when we reviewed studies conducted in orthographies less opaque than English (e.g., Spanish: Jiménez, Rodríguez, & Ramírez, 2009; Swedish: Wolff, 2009). Because grapheme–phoneme correspondences are more regular in Spanish than in English or French, Spanish-speaking dyslexics may use the sublexical reading route more easily than English- or French-speaking dyslexics.

On the other hand, a consistent finding, according the book, has been the predominance of the mixed profile (deficits in both pseudoword and real word reading) in developmental dyslexia. Traditionally, developmental dyslexia cases have been interpreted within the functional cognitive architecture assumed by the dual-route theory, according to which there is a phonological dyslexia, involving impaired phonological skills and fairly well-preserved orthographic skills, and a surface dyslexia, characterized by impaired orthographic skills and fairly well-preserved phonological skills. In addition to the dual-route model, other alternative explanations for the predominance of a mixed profile in developmental dyslexia have been proposed, such as Share's self-teaching hypothesis, in which a core phonological deficit would be expected to cause massive delays in acquiring rapid

and automatic recognition of the orthographic form of printed words. Also, connectionist models may explain individual differences in dyslexia (e.g., the dual route, another cascaded model of visual word recognition and reading aloud; the parallel distributed processing model; and the connectionist dual process model). From this connectionist framework, Harm and Seidenberg (1999) show that the major phenomena of the dyslexic subtype literature can be predicted by a connectionist simulation of learning to read with varying degrees of damage to phonological representations. Of present relevance is that the connectionist model predicts that more severe phonological impairments should lead to the mixed profile, milder phonological deficits could lead to a pure phonological profile, and the combination of mild phonological deficits and lack of reading opportunity, or overall lack of cognitive resources, among other factors, could lead to the surface profile.

Finally, we would like to conclude this section by pointing out that in studies using accuracy-based measures of subtypes, the subjects have been selected on the basis of accuracy-based reading scores. But there is a pool of subjects who might have met rate-based but not accuracy-based criteria for inclusion in a dyslexia study. We do not know what kinds of cognitive and reading profiles rate-disabled children would show because they are typically not included in subtype studies in English. Until these children are tested, it may be premature to argue that there are differences in the incidence of various subtypes across orthographies. The difference might be due to the accuracy versus rate criterion of selecting subjects rather than differences in orthography, although both could clearly be a factor. Consequently, this issue is open to debate, and it is exemplified by observations made by Share (2008): "It remains to be seen to what extent the classic dual-route distinction between phonological and surface dyslexia, a purely accuracy-based dichotomy, relates to accuracy/speed differences, particularly in the case of more conventional (i.e. consistent) orthographies" (p. 592).

Although these issues are still open to debate and further research is welcome, the authors conclude in this book that a deficit of the sublexical reading procedure is the key characteristic of developmental dyslexia because this deficit is consistently found in group studies and is systematically observed in most dyslexic participants in single- and multiple-case studies. The origin of this phonological deficit in developmental dyslexia is also open to debate. In chapter 4 the authors examine the classic phonological explanation that ascribes dyslexics' reading deficit to a specific cognitive deficiency in phonological processing, primarily in phonemic awareness and phonological short-term memory. They also examine the current nonphonological explanations that assume dyslexics' phonological deficit is secondary to more basic sensorimotor impairment: a deficiency in either rapid auditory processing, the visual magnocellular pathway, or motor skills. The authors show why perceptual explanations of dyslexia should be based on alternative perceptual modes rather than on deficits, and they place the perceptual explanation in the framework of a three-stage model of speech perception. They argue that dyslexics' phonological deficits are secondary to more basic sensorimotor impairments. They conclude that the nonphonological explanations are weak, and they propose a new phonological explanation for dyslexia, based on a specific mode of speech perception.

The main results presented in the preceding chapters are summarized in chapter 5. It represents the authors' effort to synthesize the most notable results presented in the book. They conclude,

> Allophonic perception offers a new perspective in the study of dyslexia. Therefore, further research is necessary to gain a better understanding of the way dyslexics perceive speech, and especially how they segment the speech stream. While allophonic theory constitutes a first step in this direction, it still has to be articulated with other dimensions of language processing. (p. 172)

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A PRACTICAL AMALGAM OF THE COGNITIVE, EMOTIONAL, AND SOCIAL SUBSTANCE OF RISK

The Psychology of Risk

By Glynis M. Breakwell. Cambridge: Cambridge University Press, 2007. 335 pp. Cloth, $115; Paper, $45.

> At first glance, it seems strange that Glynis Breakwell and I have been asked to review each other's books. Our research has dealt with very different levels of analysis, from the general psychological, social, and cultural elements to the specific, neural underpinnings of choice. Yet, after reading her book, I appreciate how important her more general work is, and I realize how much we share interdisciplinary values. It is all too easy for us to live in the comfort of our disciplinary homes, merely rearranging the furniture at times when we find stubborn facts that do not quite fit. However, *The Psychology of Risk* calls for a new interior designer.

The Psychology of Risk provides a useful and detailed summary of a large body of research. It is a practical amalgam of cognitive idealism and sociocultural reality that fluently conveys the importance of diverse influences. Her book helps leads the reader from the door of the lab into the real world. It is an essential response to the unavoidable cries for more realistic solutions during emergencies, such as terrorist attacks and financial crises. Also, it is written by someone uniquely qualified to present such a broad and pertinent view. Glynis Breakwell is the vice chancellor of the University of Bath, a prolific researcher whose work has included leadership, identity processes, and military culture. In addition to her academic work, she has served as an advisor to multiple government agencies, including the Department of Health, the Department of Trade and Industry, and the Ministry of Defense.

Admittedly, it is not intended for those satisfied with skimming the surface. Its game plan is to provide a broad and highly inclusive review. The chapters deal with hazard perception, individual and group differences in risk perception, decision-making models, and emotional, social, and organizational influences. From a practical standpoint, it reviews literature on the communication of risk and the modification of risk attitudes. Although some readers might have difficulty with the book's introduction, which contains broader concepts and less familiar language, they will be rewarded for their reading efforts in subsequent sections, which are both practical and specific.

The book does not try to spectacularly fuse all the fields that have addressed risk. Acknowledging the impossible breadth of the topic, the author does not seek to provide a detailed review of past quantitative models of risky decision making. Nor does the author seek to provide a detailed summary of risk perception and risk taking at a highly specialized level (e.g., in the study of mental disorders). Nor does the book address the neuroscientific correlates of risk attitudes. Rather, the book usefully summarizes research at an intermediate level of detail, ranging from cognitive to affective to social and managerial aspects of decision making.

The author argues convincingly that examining only one aspect of risk, such as the cognitive elements of risk perception, is inadequate. Rather, one must consider the many links between beliefs, decisions, intentions, and purposive actions. Her discussion brought to mind for me the long-neglected distinctions in clinical diagnosis between risk perceptions and risk taking. Likewise, her multilevel view of risk brought to mind for me the importance of considering not only cognitive but also emotional, social, and