



Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Cognition 91 (2004) 43–75

COGNITION

www.elsevier.com/locate/COGNIT

Cognitive profiling and preliminary subtyping in Chinese developmental dyslexia

Connie Suk-Han Ho^{a,*}, David Wai-Ock Chan^b, Suk-Han Lee^c,
Suk-Man Tsang^c, Vivian Hui Luan^a

^a*The University of Hong Kong, Hong Kong*

^b*The Chinese University of Hong Kong, Hong Kong*

^c*Hong Kong SAR Government, Hong Kong*

Received 19 June 2002; revised 21 February 2003; accepted 31 July 2003

Abstract

The present study examined the cognitive profile and subtypes of developmental dyslexia in a nonalphabetic script, Chinese. One hundred and forty-seven Chinese primary school children with developmental dyslexia were tested on a number of literacy and cognitive tasks. The results showed that rapid naming deficit and orthographic deficit were the two most dominant types of cognitive deficits in Chinese developmental dyslexia, and that rapid naming and orthographic processing had significant unique contributions to literacy performance. Seven subtypes of dyslexia – global deficit, orthographic deficit, phonological memory deficit, mild difficulty, and three other subtypes with rapid-naming-related deficits – were identified using scores of the cognitive tasks as classification measures in cluster analyses. These subtypes were validated with a behaviour checklist and three literacy measures. The authors suggested that orthographic and rapid naming deficits in Chinese dyslexic children might pose an interrelated problem in developing orthographic knowledge and representation. Therefore, orthographic-related difficulties may be the crux of the problem in Chinese developmental dyslexia.

© 2003 Elsevier B.V. All rights reserved.

Keywords: Chinese; Cognitive profile; Developmental dyslexia; Subtyping

* Corresponding author. Department of Psychology, University of Hong Kong, Pokfulam Road, Hong Kong, Hong Kong. Tel.: +852-2241-5652; fax: +852-2858-3518.

E-mail address: shhoc@hkucc.hku.hk (C.S.-H. Ho).

1. Introduction

Developmental dyslexia or specific reading disability has long been investigated in English-speaking communities. Early belief was that it was only a problem for western people. Although early observations or surveys (e.g. Kline, 1977; Kuo, 1978; Makita, 1968, 1974) have reported very low incidence of developmental dyslexia among Asian populations (e.g. Chinese, Japanese and Korean), we know nowadays that Asian children also have specific difficulties in reading (e.g. Hirose & Hatta, 1988; Stevenson, Stigler, Lucker, Hsu, & Kitamura, 1982). Current research attention in the field no longer focuses on whether dyslexia is a problem in nonalphabetic language communities, but on whether there are different manifestations of dyslexia in different languages (e.g. Miles, 2000). Given the distinctive visual, orthographic and phonological features of Chinese as compared with alphabetic languages, the aim of the present study is to examine the cognitive profile and subtypes of developmental dyslexia in a nonalphabetic language, Chinese. Although the Chinese population is the largest in the world, we know very little about the characteristics of dyslexia in the Chinese language. The findings of the present study will shed some light on this.

1.1. Cognitive deficits in dyslexic readers of alphabetic languages

Research findings generally show that the main difficulty of alphabetic dyslexic readers, especially English-speaking ones, lies in phonological processing (e.g. Bradley & Bryant, 1978; Hulme & Snowling, 1992; Olson, Rack, & Forsberg, 1990; Shankweiler, Liberman, Mark, Fowler, & Fischer, 1979). These dyslexic children normally perform poorly in phoneme segmentation and nonword reading. Researchers believe that it is the abstract grapheme–phoneme association required in learning alphabetic languages that makes English difficult to learn while other nonalphabetic languages, like Chinese and Japanese, may rely on learning a less abstract level of grapheme–syllable or grapheme–morpheme association. However, Gleitman (1985) has suggested that Chinese characters are easy to start acquiring but hard to finish acquiring because Chinese children need to memorize a lot more grapheme–sound mappings than alphabetic readers.

Apart from phonological difficulties as the core deficit in developmental dyslexia, researchers have found that some dyslexic children also have difficulties in rapid naming and orthographic processing. Studies have shown that dyslexic readers are impaired in the rapid recognition and retrieval of visually presented linguistic materials (e.g. Ackerman & Dykman, 1993; Badian, 1995; Bowers & Wolf, 1993; Denckla & Rudel, 1976a,b). The naming-speed deficit may be an indication of the disruption of the automatic processes involved in the extraction and induction of orthographic patterns. This is supported by Bowers, Sunseth, and Golden's (1999) findings that more accurate but slower readers have less knowledge of orthographic patterns.

Orthographic deficit has been a neglected factor in dyslexia research. The use of orthographic information (e.g. frequency of letter sequences) alters the unit of perception by enabling the reader to move from processing individual letters to letter sequences. Recent research findings show that orthographic deficit is also one of the causes of reading failures with some children. For instance, Hultquist (1997) reported that the dyslexic

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات