



Contents lists available at ScienceDirect

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp



Copying skills in relation to word reading and writing in Chinese children with and without dyslexia

Catherine McBride-Chang^{a,*}, Kevin K.H. Chung^b, Xiuhong Tong^a

^aDepartment of Psychology, Chinese University of Hong Kong, Shatin, NT, Hong Kong

^bDepartment of Special Education and Counseling, Hong Kong Institute of Education, Tai Po, NT, Hong Kong

ARTICLE INFO

Article history:

Received 24 February 2011

Revised 26 April 2011

Keywords:

Visual skills

Morphological awareness

Orthographic processing

Rapid automatized naming

Dictation

Calligraphy

ABSTRACT

Because Chinese character learning typically relies heavily on rote character copying, we tested independent copying skill in third- and fourth-grade Chinese children with and without dyslexia. In total, 21 Chinese third and fourth graders with dyslexia and 33 without dyslexia (matched on age, nonverbal IQ, and mother's education level) were given tasks of copying unfamiliar print in Vietnamese, Korean, and Hebrew as well as tests of word reading and writing, morphological awareness, rapid automatized naming (RAN), and orthographic processing. All three copying tasks distinguished dyslexic children from nondyslexic children with moderate effect sizes (.67–.80). Zero-order correlations of the three copying tasks with dictation and reading ranged from .37 to .58. With age, Raven's, group status, RAN, morphological awareness, and orthographic measures statistically controlled, the copying tasks uniquely explained 6% and 3% variance in word reading and dictation, respectively. Results suggest that copying skill itself may be useful in understanding the development and impairment of literacy skills in Chinese.

© 2011 Elsevier Inc. All rights reserved.

A unique feature of learning Chinese is the emphasis on copying each character over and over again in order to master it (Chan, Ho, Tsang, Lee, & Chung, 2006; Tan, Spinks, Eden, Perfetti, & Siok, 2005; Wu, Li, & Anderson, 1999). Researchers often highlight the fact that learning to read Chinese requires relatively broad multifaceted skills (e.g., Chung, Ho, Chan, Tsang, & Lee, in press). The identification of those skills that are particularly salient for Chinese reading acquisition is an ongoing process. Copying skill itself may be one important component (Tan et al., 2005).

* Corresponding author. Fax: +852 2609 6651.

E-mail address: cmcbride@psy.cuhk.edu.hk (C. McBride-Chang).

At the same time, however, although [Tan and colleagues \(2005\)](#) showed that skills in copying Chinese pseudocharacters and line drawings were uniquely associated with reading Chinese in children, even with phonological processing skills statistically controlled, such associations are strongly influenced by previous experience. [Vellutino \(1979, 1987\)](#) eloquently argued this point for English: Poor readers by definition have less experience with print. Therefore, the overall performances of children with dyslexia on any tasks making use of familiar print, including familiar figures, may be impaired due to a lack of experience. Thus, although [Tan and colleagues \(2005\)](#) tested writing of pseudocharacters, these characters were composed of radicals, the primary components of characters, which were likely familiar to the children. Line drawings also tend to be composed of geometric shapes that are well known to children (e.g., [Vellutino, 1979](#)).

Importantly, [Vellutino \(1979, 1987\)](#) was not focused on copying per se in his own research; rather, he was focused on the extent to which English-speaking dyslexic children might have a visual processing problem. He clearly demonstrated, through a series of studies on unfamiliar stimuli including Hebrew print, that these children did not differ from children without dyslexia on visual memory for unfamiliar figures. At the same time, however, the children with dyslexia in his samples consistently showed difficulties with recall of familiar graphological stimuli such as words and Roman letters. Collectively, these findings suggest that English-speaking children with dyslexia may have difficulties with visual–verbal association learning but not with visual processing itself.

Broader evidence for causal associations of pure visual skills, apart from writing, to Chinese literacy is controversial. Some researchers have found such an association (e.g., [Lee, Stigler, & Stevenson, 1986](#); [Siok & Fletcher, 2001](#)), whereas others have not (e.g., [Hu & Catts, 1998](#); [Huang & Hanley, 1997](#)); those who find the strongest evidence for this association tend not to have statistically controlled for other variables. Importantly, as has been found previously in alphabetic readers (e.g., [Vellutino, 1979](#)), compared with those without dyslexia, Chinese children with dyslexia tend to have difficulties with visual–verbal, but not visual–visual, paired associate learning (e.g., [Li, Shu, McBride-Chang, Liu, & Xue, 2009](#)). Collectively, such findings underscore the importance of phonological and/or broader linguistic skills for reading difficulties in Chinese (e.g., [Lei et al., 2011](#); [McBride-Chang et al., 2011](#)), as for English ([Vellutino, Fletcher, Snowling, & Scanlon, 2004](#)).

Nevertheless, the fact remains that the element of calligraphy is unique for Chinese learning (e.g., [Tan et al., 2005](#)). For example, repetition of Chinese character writing is the most dominant approach to fostering children's literacy development across Chinese societies (e.g., [Wu et al., 1999](#)). Moreover, younger Chinese children with lower and higher overall literacy skills tend to differ in their delayed copying (i.e., writing from memory recalled characters presented previously) more strongly for unfamiliar characters as opposed to familiar characters, whereas older Chinese children of different literacy ability levels do not (e.g., [Pak et al., 2005](#)). This finding may suggest that early copying skills may develop more slowly in those children with weaker, as opposed to stronger, Chinese literacy skills overall.

One study explicitly focused on the association of Chinese word reading to writing in dyslexic children ([Chan et al., 2006](#)) and found that this correlation was .50 among all dyslexic children sampled ($N = 1235$). However, with orthographic knowledge, phonological memory, and rapid automatized memory statistically controlled, this association was reduced to .42 and similar reductions were found within each individual age group sampled ([Chan et al., 2006](#)). The authors interpreted this finding as highlighting the commonalities of orthographic knowledge, phonological memory, and rapid automatized naming (RAN) with both word reading and writing in Chinese. In addition, however, the relative strength of this partial correlation may also underscore the fact that word reading and word writing skills in Chinese share as of yet unidentified additional constructs relevant for understanding reading development and impairment in Chinese.

Copying skill may be one such link, although only a few studies have examined this issue explicitly in Chinese children. One study demonstrated that Chinese children tend to make a variety of stroke-writing errors when writing even familiar characters despite having been taught adequately and verbally reporting using a consistent approach to stroke order in writing ([Law, Ki, Chung, Ko, & Lam, 1998](#)). In addition, perhaps not surprisingly, laborious copying of Chinese text in children is associated with difficulties in a variety of visual processing skills ([Tseng & Chow, 2000](#)), particularly fine motor function abilities, including drawing lines, making dots, placing coins, sorting cards, and copying geometric forms, in addition to visual–sequential memory.

Download English Version:

<https://daneshyari.com/en/article/918412>

Download Persian Version:

<https://daneshyari.com/article/918412>

[Daneshyari.com](https://daneshyari.com)