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Does developmental Dyslexia Originate in Visuo-Attention Deficit? Evidence from Visual Recognition Tasks of Multi-Symbol Strings

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Abstract

A controversy has recently developed regarding the hypothesis that developmental dyslexia is caused by a visual attention deficit. To examine this hypothesis, independent of phonological abilities, researchers tested the ability of dyslexic participants to recognize strings of unfamiliar visual symbols. Employing this test, findings were rather equivocal: dyslexic participants exhibited poor performance in some studies but normal performance in others. The present study explored four methodological differences revealed between the two sets of studies that might underlie their conflicting results. Specifically, in two experiments we examined whether the visuo-attantion deficit is (a) specific to recognition of multi-symbol strings as wholes rather than of individual symbols within strings, (b) specific to symbols' position within arrays rather than to symbols' identity, or revealed only under a higher attention load due to (c) low-discriminable symbols, and/or (d) symbols' short exposure. Furthermore, in this study we examined whether pure dyslexic participants who do not suffer from attention disorder exhibit a visou-attention deficit. The presence of attention disorder was neither evaluated nor ruled-out in previous studies, although comorbidity of dyslexia and attention disorder is common and the ability to sustain attention for a long time plays a major rule in the visual recognition task. Findings did not reveal any differences between the performance of dyslexic and control participants on eight versions of the visual recognition task. These findings suggest that pure dyslexic individuals do not suffer from a visou-attention deficit.