Intact crowding and temporal masking in dyslexia.

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Created 11/11/2015
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Abstract:

Phonological deficits in dyslexia are well documented. However, there is an ongoing discussion about whether visual deficits limit the reading skills of people with dyslexia. Here, we investigated visual crowding and backward masking. We presented a Vernier (i.e., two vertical bars slightly offset to the left or right) and asked observers to indicate the offset direction. Vernier stimuli are visually similar to letters and are strongly affected by crowding, even in the fovea. To increase task difficulty, Verniers are often followed by a mask (i.e., backward masking). We measured Vernier offset discrimination thresholds for the basic Vernier task, under crowding, and under backward masking, in students with dyslexia (n = 19) and age and intelligence matched students (n = 27). We found no group differences in any of these conditions. Controls with fast visual processing (good backward masking performance), were faster readers. By contrast, no such correlation was found among the students with dyslexia, suggesting that backward masking does not limit their reading efficiency. These findings indicate that neither elevated crowding nor elevated backward masking pose a bottleneck to reading skills of people with dyslexia.

Journal:
Journal of vision

Volume:
15

Issue:
14

Pagination:
13

Date Published:
2015 Oct 1

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