Reviewer’s report

Title: Word Processing differences between dyslexic and control children

Version: 1 Date: 20 July 2005

Reviewer: Gerd Schulte-Körne

Reviewer’s report:

General

The ms focus on the analyses of neurophysiological correlates of reading high, low frequency words and pseudowords as well. Group comparison of 20 control children and 55 dyslexic children reveals evidence for differences for low frequency words, but not for high frequency words or pseudowords. The authors stated that this study further confirms the phonological deficit hypothesis because the differences could mainly be explained by a deficit in dyslexic individuals to apply grapheme-phoneme correspondence rules.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Points that had to be considered:

Methods:

Measurement of handedness should be reported.
Diagnostic criteria of dyslexia: only teacher report? The authors apply reading and spelling tests thus it should be possible to diagnose dyslexia based on the standardised tests (also including the IQ) . Do the authors notice whether the individuals read the words correctly?

Discussion:
The authors did not find any differences between the groups for pseudowords. There are two points which should be reconsidered: First, they found differences between the group if they consider the behavioural data (they also refer in the Introduction to the paper of Castles and Coltheart study that found about 70% of the dyslexic readers had difficulties reading pseudowords; thus it is really unexpected to find no differences for pseudowords reading) . Second they did not find group differences between reading high frequency words and pseudowords. This is also unexpected since this means that neurophysiologic correlates of reading of these different kind of verbal material are quite similar between the groups who normally are characterized by a difference reading pseudowords and high frequency words. Pseudoword reading is very common task in order to investigate phonological awareness. As stated by the authors phonological awareness has been found to be the core deficit in dyslexia. Thus it might be helpful to analyse subgroups of the 55 dyslexic individuals that are characterized by phonological vs. non-phonological deficit.

If the graphophonological route is automatically activated in control individual they should also activate this route reading pseudowords because also for reading pseudowords this route is activated. And if dyslexic individuals do not activate this route than differences between the groups should be found also for pseudowords. Again I did not find the arguments convincing.
What do the authors mean with “our channel selection covered more cortical areas than the VWFA”? Why it is impossible to analyse VWFA with a 148 channel MEG?

For the frequency findings the authors argue that attention processes could be relevant to explain the group differences for LF words? But why should this attention impairment only selectively influence LF words and not also pseudowords or HF words?

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

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What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.