Pervasive effect of phonological deficits on spoken word recognition: behavioral and EGG evidence from dyslexic and normal readers

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Research on dyslexia typically shows deficits in phonological processing. However, this conclusion is obtained mainly from metaphonological tasks. Very few studies have focused on what happens in more elementary spoken word recognition tasks. Here, we compared the performance and brain activity of normal readers (NR) and adults with dyslexia (DYS) while they performed a simple auditory lexical decision task. Both populations showed a significant lexicality effect at the behavioral level. However, DYS were slower than NR for both words and pseudowords, suggesting some difficulties in processing spoken language. Moreover, ERP findings showed that the distinction between words and pseudowords occurred earlier in NR than in DYS, with NR showing a larger negativity to words than to pseudowords between 260-530ms and the reverse pattern from 530ms onwards. In DYS, the earliest ERP correlates of lexicality effect occurred only around 450ms. The finding suggests that the deficits in phonological processing in DYS might not be restricted to metaphonolocal abilities but could also be observed in more elementary spoken word recognition tasks.