

What contributes to the frequency-modulated syllable effect in reading in French dyslexic children?

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Abstract: We report the results of tasks that measured whether the syllable is a frequency-modulated prelexical and segmental unit available in French dyslexic children. Thirty-three French dyslexic children were compared to 66 chronological age-matched and reading-level-matched controls. We designed a visual syllable detection task (Exp. 1), a visual masked priming paradigm (Exp. 2), and a revisited illusory conjunction paradigm (Exp. 3). Our results showed that dyslexic children exhibited robust frequency-modulated syllable effects; high-frequency syllables had facilitatory effects (syllable-based processing), while low-frequency syllables had inhibitory effects (letter-by-letter processing) whether the tasks did or did not tap the processes of lexical access. Furthermore, in a feasible task (Exp. 1), dyslexics' performance was drastically higher than in tasks with cognitive or temporal constraints (Exp. 2 and 3), suggesting impaired phonological procedures. We propose that dyslexic children do not systematically have obvious degraded phonological representations but rather compensated phonological representations with degraded access to them.