The enigma of dyslexic musicians.

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Abstract:

Musicians are known to have exceptional sensitivity to sounds, whereas poor phonological representations (or access to these representations) are considered a main characteristic of dyslexic individuals. Though these two characteristics refer to different abilities that are related to non-verbal and verbal skills respectively, the recent literature suggests that they are tightly related. However, there are informal reports of dyslexic musicians. To better understand this enigma, two groups of musicians were recruited, with and without a history of reading difficulties. The pattern of reading difficulties found among musicians was similar to that reported for non-musician dyslexics, though its magnitude was less severe. In contrast to non-musician dyslexics, their performance in pitch and interval discrimination, synchronous tapping and speech perception tasks, did not differ from the performance of their musician peers, and was superior to that of the general population. However, the auditory working memory scores of dyslexic musicians were consistently poor, including memory for rhythm, melody and speech sounds. Moreover, these abilities were inter-correlated, and highly correlated with their reading accuracy. These results point to a discrepancy between their perceptual and working memory skills rather than between sensitivity to speech and non-speech sounds. The results further suggest that in spite of intensive musical training, auditory working memory remains a bottleneck to the reading accuracy of dyslexic musicians.

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