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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 38(0)

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Publication Date

2016

Peer reviewed

Developmental deficit in autobiographical episodic memory: Evidence from Williams syndrome

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Abstract: Williams syndrome (WS) is a genetic developmental disorder characterized by severe spatial impairments and structural and functional abnormalities in the hippocampus (Meyer-Lindenberg et al., 2006). Although the spatial deficit is well-documented, we know little about other deficits that would be predicted by the hippocampal abnormalities. Here, we examine episodic memory (i.e. memory for personally experienced events in a spatio-temporal context, Tulving, 1983), asking people with WS to recount past personal events. We use an interview method developed for patients (Levine et al., 2002) and typically developing children (Willoughby et al., 2012). People with WS recounted significantly fewer episodic details than age-matched controls. Importantly however, they offered just as many semantic details (reflecting general world knowledge), indicating that global factors (e.g., verbal skill or IQ) cannot account for these results. Our work identifies a specific cognitive deficit in WS and further highlights the critical involvement of the hippocampus in episodic memory.