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Letter to the Editor

EARLY MEMORY AND AUTISM

Dear Editor:

Recently a number of individuals with HFA/AS have come to our attention that possess a very early (1 year of age) autobiographical memory.

In normal development, autobiographical memory emerges in early childhood (3–4 years of age) and in general adults remember episodes from around 6–8 years of age. Main contributors to the development of autobiographical memory are intact memory systems, language, comprehension of narrative, temporal understanding and above all self and other understanding (see Nelson & Fivush, 2004 for a review). Basically, autobiographical memory develops through social interaction and maturation of cognitive processes.

Research has shown that individuals with autism/AS have impaired recall for personally experienced events (e.g. Millward, Powell, Messer & Jordan, 2000; Bowler, Gardiner, & Grice, 2000). What could be the explanation for these very precocious early memory abilities we are reporting?

We speculate that in some people with HFA/AS the neurological processes underlying the cognitive aspects of autobiographical memory are extremely well developed, as evidenced by excellent semantic memory and very early language development, in contrast to the social aspects of memory which are deviant or delayed.

Furthermore, it is possible that altered patterns of connectivity in autism, specifically underconnectivity as evidenced by a recent MRI study (Just, Cherkassky, Keller, & Minshew 2004) contribute to the retrieval of very early memories, an ability that may constitute a savant talent. Savant skills are strongly associated with exceptional memory and Heaton and Wallace (2004) in their review of savants conclude that exceptional memory might itself be a savant skill as proposed by Mottron, Belleville, Stip and Morasse (1998).

The weak central coherence theory (Happé, 1999) suggests that individuals with autism have a strong and pervasive local processing bias which could also be beneficial in the establishment of these outstanding early memories. Likewise, Heaton, Hermelin and Pring (1998) and Hermelin (2001) argue that featural processing as predicted by the weak central coherence is beneficial to savants very early in life as it enables the establishment of early memory traces on which a multitude of information can be based.

In common with various savant theories we suggest that exceptional autobiographical memories in HFA/AS indicate advanced information processing abilities in this population.

REFERENCES

Bowler, D. M., Gardiner, J. M., & Grice, S. J. (2000). Episodic memory and remembering in adults with Asperger syndrome. *Journal of Autism and Developmental Disorders*, *30*, 295–304.
Happé, F. (1999). Autism: Cognitive deficit or cognitive style? *Trends in Cognitive Science*, *3*, 216–222.
Heaton, P., & Wallace, G. L. (2004). Annotation: the savant syndrome. *Journal of Child Psychology and Psychiatry*, *45*(5), 899–911.
Heaton, P., Hermelin, B., & Pring, L. (1998). Autism and pitch processing: A precursor for savant musical ability. *Music Perception*, *15*, 291–305.
Hermelin, B. (2001). *Bright splinters of the mind: A personal story of research with autistic savants*. London: Kingsley.
Just, M. A., Cherkassky, V. L., Keller, T. A., & Minshew, N. J. (2004). Cortical activation and synchronization during sentence comprehension in high-functioning autism: evidence of underconnectivity. *Brain*, *127*(8), 1811–1821.
Millward, C., Powell, S., Messer, D., & Jordan, R. (2000). Recall for Self and Other in Autism: Children's memory for events experienced by themselves and their peers. *Journal of Autism and Developmental Disorders*, *30*(1), 15–28.
Nelson, K., & Fivush, R. (2004). The Emergence of Autobiographical Memory: A Social Cultural Developmental theory. *Psychological Review*, *111*(2), 486–511.
Mottron, L., Belleville, S., Stip, E., & Morasse, K. (1998). Atypical memory performance in an autistic savant. *Memory*, *6*, 593–607.

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