



Original Research Article

Episodic memory and self-awareness in Asperger Syndrome: Analysis of memory narratives



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ABSTRACT

Previous findings from researchers on individuals with Asperger Syndrome (AS) suggest peculiarities of autobiographical memory (AM). They have shown a personal episodic memory deficit in the absence of a personal semantic memory impairment. The primary aim of this study was to explore AM in individuals with AS, and more specifically to investigate the link between episodic memory, self-awareness, and autonoetic consciousness through language analysis. We asked fifteen adults with AS and fifteen age- and IQ-matched controls to recall autobiographical memories from three life periods. Recorded interviews were processed using Alceste software. We found that participants with AS recalled fewer and less-detailed episodic memories than did controls. A content analysis revealed that family-related vocabulary as well as possessive pronouns was significantly less frequent in AS interviews than in those of controls. In conclusion, our results support the hypothesis that a deficiency of episodic memory may be due to poor awareness of the self in social relationships. Reduced use of possessive pronouns may also indicate less self-investment in life experiences, which would in turn impact recall.

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1. Introduction

Autism spectrum disorders (ASD) are characterized by qualitative impairment of social interactions, verbal and non-verbal communication deficiencies, and restricted and repetitive interests (American Psychiatric Association, 2000). These three core diagnostic deficits cover a wide range of behaviors and cognitive profiles, as well as important individual variations. Asperger Syndrome (AS) is diagnosed in individuals at the higher-functioning end of the autism spectrum, with no speech delay during childhood and normal to higher level of intelligence (American Psychiatric Association, 2000). However, impairments in social, occupational, or other important areas of functioning lead to significant disturbances.

Over the last ten years, a large number of studies have investigated memory functions in individuals with AS and more specifically, autobiographical memory. Autobiographical memory includes personal information and memories specific to an individual, allowing subjects to build a feeling of personal identity and continuity over time (Piolino, Desgranges, & Eustache, 2000).

According to Bluck (2003) autobiographical memory serves three main functions: self-related (building a sense of self-over-time), directive (using past experiences to make decisions), and social (facilitating social interactions). For Neisser (1988), the social function of autobiographic memory is fundamental. Sharing memories facilitates social interactions and strengthens social bonds (Nelson, 1993). Autobiographical memory allows us to better understand and empathize with others (Cohen, 1998). Because our memories provide a database for social problem solving (Evans, Williams, O'Loughlin, & Howells, 1992; Goddard et al., 1996), deficient autobiographical memory can lead to social problem-solving difficulties, as found in individuals with Asperger Syndrome (Goddard, Howlin, Dritschel, & Patel, 2007). Social relationships can suffer when episodic memory is impaired, thus highlighting its importance in social bonding (Robinson & Swanson, 1990). Sharing detailed and emotional memories can create a deep bond between two people. This bond may not be as powerful if the narrative of the memory is solely descriptive and emotionless (Bluck, 2003).

Autobiographical memory can be subdivided into semantic memory, including information about one's past (e.g., friends' names and school address) and about oneself (e.g., tastes and personality traits), and episodic memory, which stores memories of experienced events located in time and space. Thus, semantic memory is associated with a feeling of noetic consciousness, i.e., "knowing" information about one's past, in the absence of any remembering. On the other hand, episodic memory relates to personally experienced events recollected with contextual details and their associated subjective feelings (Tulving, Schacter, McLachlan, & Moscovitch, 1988). Episodic memories encode information regarding where and when an event took place, and they are linked to aspects of emotional and sensory perception. According to Tulving et al. (1988), recollecting episodic memories involves traveling through mental time in order to re-experience the event through auto-noetic consciousness, i.e., the subjective feeling of "remembering". According to this hypothesis, phenomenological re-experiencing and the sense-of-self in time (past, present, and future) are two major aspects of episodic memory.

Preliminary findings have consistently shown impairment of episodic memory in AS, and more specifically, a decreased ability to recall personal memories and relive experiences (Bowler, Gardiner, & Grice, 2000; Crane & Goddard, 2008; Millward, Powell, Messer, & Jordan, 2000; Toichi & Kamio, 2003). Studies have revealed that impairment of episodic memory in AS was linked to diminished auto-noetic consciousness (Bowler et al., 2000; Tanweer, Rathbone, & Souchay, 2010; Zalla et al., 2010). Auto-noetic consciousness involves being aware of one's own state of mind and therefore involves self-awareness. Several studies have shown that individuals with AS have self-awareness difficulties, as revealed by the lack of a self-reference effect (Toichi et al., 2002) as well as poor insight (Tanweer et al., 2010), probably linked to weak self-monitoring (Zalla et al., 2010). Goddard et al. (2007), for example, showed that adults with AS retrieved fewer autobiographical memories, and the recall process took more time in AS adults than in controls. However, personal semantic memory seems to be spared in AS, with good results on cued recall (Tager-Flusberg, 1991) and on rote-memory tasks (Wing, 1981). Although individuals with AS do not have any information storage difficulties, they do exhibit an atypical process for memorizing semantic information: it is based more on sensory information than on conceptual relationships (Toichi & Kamio, 2003). A personal episodic memory deficit in AS, in the absence of a personal semantic deficit, suggests dissociation between these two components of autobiographical memory (Crane & Goddard, 2008). The episodic memory impairment may be due to the level of self-awareness at encoding time (Goddard et al., 2007).

In the light of these considerations, the aim of our study was to investigate self-awareness in AS individuals through two indicators: an episodic memory assessment (TEMPau task score) and linguistic markers of self-awareness in narratives. More specifically, we postulated that participants with AS, in narrating their memories, would use fewer words indicating self-awareness than control group participants would.

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