



## Review article

# Narratives of children with high-functioning autism spectrum disorder: A meta-analysis



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## ABSTRACT

**Background:** The aim of this meta-analysis was to analyze the narrative performance of children and adolescents with high-functioning Autism Spectrum Disorders (ASD) in terms of microstructure, macrostructure and internal state language.

**Method:** A systematic literature search yielded 24 studies that met the predetermined inclusion criteria. Effect sizes for each study were calculated for eight variables and analyzed using a random effects model. Intellectual ability, age and type of narrative were considered as potential moderators.

**Results:** Results revealed that the children with ASD performed significantly worse than their peers on all the variables considered.

**Conclusions:** Findings are discussed taking into account the main explanatory psychological autism theories. Implications for intervention and orientations for future research are suggested.

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## What this paper adds?

- This is the first meta-analysis about narrative abilities in children with ASD/HFA (Autism Spectrum Disorders/High Functioning Autism).
- The results revealed that individuals with ASD/HFA showed deficits in all narrative domains (macrostructure, microstructure, and internal state language) compared to controls.
- Findings did not differ in subgroups based on age and narrative type, but for internal state language, differences were greater in magnitude in the high verbal IQ group.
- Narrative, a way of thinking, communicating and sharing reality, is a key deficit in ASD, and it can be related to main explanatory theories about this neurodevelopmental disorder.
- The results highlight the importance of designing effective interventions to address the challenges experienced by individuals with ASD/HFA related to narrative competence.

## 1. Introduction

Narration is a way of thinking, communicating and sharing reality, a cognitive scheme in which we adjust and reconstruct our experiences in order to better understand them (Bruner, 1991). Narratives commonly describe a series of actions and events that unfold over time, often according to causal principles and with a goal that is to be achieved (Trabasso & Rodkin, 1994). They play a significant role in different developmental areas such as school performance (Petersen, 2011) and reading comprehension (Griffin, Hemphill, Camp, & Wolf 2004). Besides, conversational narratives are one of the main ways of sharing experiences among children, supporting the continuous development of emotional attachment and social relationships (von Klitzing, Stadelmann, & Perren, 2007). In addition, adult-scaffolded narratives contribute to children's memories about their own experiences (Fivush, Habermas, Waters, & Zaman, 2011). People who have well-constructed narratives may be better able to assimilate new experiences into their sense of self with relative ease. Furthermore, creating a story about a conflicting or stressful event is fundamental to being able to incorporate it into one's self-representation (van der Kolk & Fisler, 1995).

In recent decades there has been a considerable increase in studies on narrative competence in Autism Spectrum Disorders (ASD), a neurodevelopmental disorder characterized by persistent impairments in social communication and interaction, and restricted and repetitive behavior. From the first description by Leo Kanner (1943), the conceptualization of ASD has experienced a series of changes related to both its characterization and its name: from Pervasive Developmental Disorder (DSM-IV-TR, APA, 2000) to Autism Spectrum Disorder, the terminology used in the current DSM-5 (APA, 2013). In this nosological evolution process, one constant feature of the ASD diagnosis has been the presence of social communication difficulties. For this reason, the study of the narrative skill becomes especially relevant, and it can also be used to demonstrate the main explanatory theories of ASD, even though it seems evident that autism cannot be understood based on only one deficit (Happé & Ronald, 2008).

First, Theory of Mind (ToM) deficit proposes that people with ASD experience difficulties in the capacity to infer mental states in themselves and others (Baron-Cohen, Leslie, & Frith, 1985) and in the ability to empathize (Baron-Cohen, 2010), which obviously affects communication and social interaction. Therefore, it seems logical to imagine that people with ASD would have challenges in identifying psychological states – thoughts, feelings, motivations – in the characters of a story, and in adapting the narration according to the knowledge shared with their audience. In this regard, Tager-Flusberg and Sullivan (1995) confirmed an association between narrative performance of children with ASD and their performance on ToM tasks. Moreover, when asked comprehension questions, they were less accurate in labeling emotions and gave fewer appropriate causal explanations. Similar results were obtained in Capps, Losh and Thurber's (2000) study, in which children with ASD were less likely to include emotion descriptions within a causal frame, and a correlation between narrative ability and ToM was established.

Second, difficulties in executive functioning – planning, working memory, inhibitory control, flexibility – have been considered one of the fundamental causes of the cognitive alterations found in ASD (Ozonoff, Pennington, & Rogers, 1991). Undoubtedly, good organizational skills and the ability to focus one's attention are necessary in order to express the temporal and causal sequence of the events being narrated (Ygual, Roselló, & Miranda, 2010). Furthermore, a good narration is characterized by having a coherent overall structure, which can be especially difficult for people with ASD, who, according to the Weak Coherence Account (Happé & Frith 2006), have a natural bias toward focusing on the local properties of information and exhibit difficulties in integrating these local features into meaningful representations. More recently, an aspect of WCA has been emphasized, the ability to use context in sense making. According to this proposal, people with ASD would present a lack of contextual sensitivity or "context blindness", which would hinder the use of context in the interpretation of meaning (Vermeulen, 2015).

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