



ORIGINAL ARTICLE

Theory of Mind Deficit Is Associated with Pretend Play Performance, but Not Playfulness, in Children with Autism Spectrum Disorder



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Summary *Objective/Background:* This study aimed to examine the relationships of theory of mind (ToM) to both pretend play and playfulness in children with autism spectrum disorder (ASD).

Methods: Twenty children with ASD aged between 3 years and 7.11 years were assessed with the ToM test, and then placed in a free play condition and a pretend play condition to assess pretend play and playfulness with the Child-Initiated Pretend Play Assessment and Test of Playfulness, respectively. In addition, the children's symptom severities of ASD and verbal abilities were also assessed with the Childhood Autism Rating Scale (CARS) and Receptive and Expressive Vocabulary Test—second edition, respectively.

Results: The results of the regression analysis confirmed that ToM significantly predicted pretend play variables, namely, Number of Object Substitutions ($R^2 = .158$, $p = .002$) and

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Number of Imitated Actions ($R^2 = .175, p = .001$), but not playfulness. The CARS score was a significant predictor of the Percentage of Elaborate Pretend Play Actions of pretend play ($R^2 = .075, p = .034$), as well as the internal control ($R^2 = .125, p = .006$) and framing ($R^2 = .071, p = .039$) variables of playfulness.

Conclusion: The findings support the idea that children with ASD who have better ToM might be able to develop better pretend play, but not better playfulness, which might be more strongly related to their autistic severity.

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Introduction

Autism spectrum disorder (ASD) is a lifelong neuro-developmental disorder. Children with ASD have the core symptoms of impaired socialisation and communication, and they exhibit restricted, repetitive, and stereotyped behaviours or interests (American Psychiatric Association, 2000), which lead to poor physical, psychological, and social outcomes (Billstedt, Gillberg, & Gillberg, 2011; Eaves & Ho, 2008; Howlin, Goode, Hutton, & Rutter, 2004). These symptoms also result in poor adaptive functioning (Kanne et al., 2011) and cause difficulties in play (American Psychiatric Association, 2013; Dominguez, Ziviani, & Rodger, 2006; Mastrangelo, 2009; Rutherford, Young, Hepburn, & Rogers, 2007).

Play, the main occupation of children (Parham & Fazio, 2008), both reflects and improves the development of their physical, cognitive, and social skills (Rubin, Fein, & Vandenberg, 1983). Play is the dynamic interaction between the individual child and the child's immediate environment, and it is influenced by sociocultural factors (Cooper, 2000; Sutton-Smith, 1980). The two essential manifestations of play are external performance and internal experience. The former is observable performance, which unfolds in play activities; the latter is playfulness, which is the key to determining whether an activity belongs to play or not (Bundy, 1993; Neumann, 1971; Parham & Fazio, 2008). Therefore, it is important to view play as a whole construct involving both external performance and internal experience.

Pretend play is a form of external performance and is defined as play composed of both conventional imaginative play and symbolic play (Stagnitti & Unsworth, 2000). Conventional imaginative play is preliminary pretend play. It refers to perceiving objects (or conventional toys) as real or small copies of things, and using them in a functionally proper way outside of the typical context (Baron-Cohen, 1987; Lewis, Boucher, & Astell, 1992; Stagnitti & Unsworth, 2000). Examples are pretending to feed a doll using a toy spoon, using an empty cup to pretend to drink, or rolling a toy car on the floor and making engine noises. Symbolic play is sophisticated pretend play. It refers to using objects (or unstructured toys) as something else, attributing properties, or pretending an absent object is present (Baron-Cohen, 1987; Lewis et al., 1992; McCune-Nicolich, 1981; Stagnitti & Unsworth, 2000). Examples are

using a banana as a telephone, pretending a piece of cloth is wet, or making an imagined cup with the hands and pretending to drink. Therefore, pretend play provides an opportunity for children to practice events occurring in their daily lives or social worlds. Through engagement in pretend play, children learn the differences between reality and imagination. Moreover, pretend play reflects and facilitates the development of emotions, language, cognition, social skills, social awareness, and perspective-taking ability (Baron-Cohen, 1997; Lillard et al., 2013; Rubin et al., 1983; Vygotsky, 1976; Westby, 1991).

Pretend play deficit appears to be a clinical feature of children with ASD (Rutherford et al., 2007) and has long been a focus of the study of child development. Previous studies have found that children with ASD are unable to understand the pretend actions in play. Wing, Gould, Yeates, and Brierty (1977) conducted the first research that directly examined pretend play in children with ASD and children with intellectual disability and found that the majority of children with no observable pretend play or those with stereotyped, copying pretend play behaviours were children with autistic disorder. Several studies have also found that pretend play is apparently less frequent in children with ASD, and that their play behaviours lack symbolism, creativity, and complexity (Desha, Ziviani, & Rodger, 2003; Donnelly & Bovee, 2003; Riguet, Taylor, Benaroya, & Klein, 1981; Rutherford & Rogers, 2003; Sigman et al., 1999; Wulff, 1985). Rutherford et al. (2007) conducted a longitudinal study that measured children's pretend play in a free play condition and a structured condition with external instructions. Their results showed that children with ASD found it significantly more difficult than typically developing children to perform pretend play in both conditions and that spontaneous pretend play was more impaired. Furthermore, in addition to difficulties in performing pretend play, children with ASD have impaired comprehension of pretend play as well (Bigham, 2010). In summary, research has shown that children with ASD are unable to understand the pretend actions in play. Children with ASD have decreased frequency and complexity when performing pretend play, and the difficulties can present spontaneously or appear with external facilitations.

In addition to the external performance of play, playfulness is the internal experience and the quality of play (Barnett, 1990; Parham & Fazio, 2008). There are four dimensions of playfulness: internal control, freedom to

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