



ELSEVIER

Contents lists available at ScienceDirect

Research in Autism Spectrum Disorders

Journal homepage: <http://ees.elsevier.com/RASD/default.asp>

Social and non-social deficits in children with high-functioning autism and their cooperative behaviors

Jing Li^a, Liqi Zhu^{a,*}, Jing Liu^b, Xue Li^b^a Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing, China^b Institute of Mental Health, Peking University, Key Laboratory for Mental Health, Ministry of Health, Beijing, China

ARTICLE INFO

Article history:

Received 28 May 2014

Received in revised form 26 August 2014

Accepted 29 August 2014

Keywords:

High-functioning autism (HFA)

Cooperation

Theory of mind (ToM)

Executive function

Central coherence

ABSTRACT

The persistent deficits in social communication and social interactions of individuals with high-functioning autism (HFA) may impair their cooperative behaviors. This study investigated the relationship between social and non-social deficits in children with HFA and the cooperative behaviors of such children. Theory of mind (ToM), executive function, and central coherence of children with HFA and typically developing (TD) children, aged 6–12 years, were investigated, and the effects of these social and non-social deficits on children's cooperativeness were examined. The classical prisoner's dilemma game (PDG) and cooperative implemental tasks were used to assess children's cooperativeness. ToM was measured using a series of classical false belief tasks and the face test. The Wisconsin Card Sorting Task (WCST) and the Embedded Figures Test (EFT) were administered to assess executive function and central coherence, respectively. The results showed that there was no significant difference in cooperation in PDG between HFA and TD children, while cooperation in children with HFA in the interruption period of the implemental tasks was significantly lower than that of TD children. Children with HFA had social deficits and had more poorly developed ToM than TD children, and executive function in children with HFA was poorer than that in TD children. Different types of deficits were predictive of HFA children's degree of cooperation on different tasks: the social perceptual component of ToM and executive function predicted children's cooperativeness in the PDG, and executive function predicted HFA children's cooperativeness during the interruption period of an implemental task. By contrast, central coherence did not predict either of the two types of cooperation. It might indicate that the two different types of cooperative tasks may require different mental abilities.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Autism spectrum disorders (ASDs) are characterized by abnormalities in social, communicative, cognitive development (Sigman, Spence, & Wang, 2006). Autism can occur at any point on the intelligence quotient (IQ) continuum, and IQ (Rutter, 1978) is an important index of clinical diagnosis for ASD. Although language delay is not necessary for clinical diagnosis for ASD, level of language function by age six (Szatmari, Bryson, Boyle, Streiner, & Duku, 2003) is also important for reference. Children with autism are classified as high functioning or low functioning depending on the absence or presence of

Abbreviations: HFA, high-functioning autism; TD, typically developing; PDG, prisoner's dilemma game; ToM, theory of mind.

* Corresponding author. Tel.: +86 01064836643.

E-mail address: zhulq@psych.ac.cn (L. Zhu).

<http://dx.doi.org/10.1016/j.rasd.2014.08.016>

1750-9467/© 2014 Elsevier Ltd. All rights reserved.

mental retardation, which is reflected in an IQ lower or higher than 70 (Sigman et al., 2006). High-functioning autism (HFA) refers to the condition of an ASD individual whose developmental age is near his or her chronological age or whose IQ is above or equal to 70 (Carpenter, Soorya, & Halpern, 2009).

Deficits in social functioning are the core characteristics of individuals with autism because longitudinal research has found that early impairment in social functioning can almost completely predict a subsequent diagnosis of autism (Dawson & Bernier, 2006). Individuals with autism typically exhibit deficits in imitation (Hobson & Hobson, 2008), joint attention (Baron-Cohen, 1989; Charman et al., 1997; Sullivan et al., 2007), and theory of mind (Baron-Cohen, 2000; Yoshida et al., 2010), while these social skills all closely relate with individual's social behavior, especially with cooperative behavior (Colombi et al., 2009; Paal & Bereukei, 2007). Cooperation, an important social behavior, might be impaired in children with autism due to deficits in social functioning. However, although children with autism are less likely to orient to social stimuli, they do not totally avoid social interaction; neither are they completely indifferent to social interaction (Dawson et al., 2004). Moreover, at least two different research groups find that children with autism can understand the intention of others' behavior (Aldridge, Stone, Sweeney, & Bower, 2000; Carpenter, Pennington, & Rogers, 2001). Meltzoff (1995) found that children with autism did not simply copy the precise observed actions, but performed the intended action. Tomasello, Carpenter, Call, Behne, and Moll (2005) found that some children with autism could understand basic intentional actions but not were able to predict shared intention. It implies that children with autism can also identify other people's simple mental state. In consideration of the inconsistent results about social functioning in children with autism and the relationship between social interaction and cooperation, it might be possible and helpful to examine cooperation in children with autism in order to provide meaningful enlightenment for early intervention, in consideration that cooperative social experiences can promote peer acceptance (Andrews & Krantz, 1982; Ladd, Price, & Hart, 1988).

Cooperation is central to human life. It can be defined as a type of action or intention engaged in by an individual or a group of individuals acting together in order to pursue a shared goal, leading to a favorable result for both the individual (or group) and others (Argyle, 1991; Deutsch, 1977; Jewett, 1992). It also occurs when an individual incurs a cost (e.g., money, time, labor, and food) in order to benefit for another people (Henrich & Henrich, 2006). Thus, cooperation includes the following two situations: (1) cooperation toward objectives that an individual cannot accomplish by him- or herself, thus requiring interaction with others to achieve it. That is to say, "acting together" is the fundamental part of this kind of cooperation. (2) Cooperation in a situation where individual and collective interests are both conflicting and interdependent, such as cooperation in prisoner's dilemma game (PDG) (Henrich & Henrich, 2006). Both of the above two kinds of cooperation widely exist in our social life. In the first situation, cooperation is the only choice, and there is a shared goal that each person can achieve in the exchange, through acting together in some way; whereas in the second, "acting together" is not necessary required, while there is a dilemma.

So far, little research has examined cooperative behaviors in children with autism. Downs (2002) found that the cooperative behavior in the PDG of 5- to 9-year-old children with high-functioning autism is similar to that of normal developing children. In contrast, Sally and Hill (2006) found that although there is no significant difference in the average levels of cooperativeness of children with ASD and typically developing children in the PDG, players with autism experience difficulty when shifting strategies in some versions of the PDG. Children with high-functioning autism show less pro-social behavior than typically developing children (Bacon, Fein, Morris, Waterhouse, & Allen, 1998). Moreover, Liebal, Colombi, Rogers, Warneken, and Tomasello (2008) argue that when an adult partner stops an interaction, children with autism exert less effort to reengage and cooperate with a partner on tasks requiring two individuals to work together to achieve a common goal compared with children with developmental delays and typically developing children. Thus, cooperation in children with autism may differ, depending on the types of cooperative tasks in which they are asked to engage. One interesting question is what relationship might exist between the cooperativeness of children with autism and their social and non-social deficits.

Individuals with autism have core deficits in social communication and interaction, and demonstrate restricted and repetitive patterns of behavior, interest or activities (DSM-5). What psychological factors might affect these deficits exhibited by children with autism? Happé (2001) argued that current psychological theories of autism can be divided into two general views: (a) that autism consists mainly of social deficits; and (b) that autism consists mainly of non-social deficits. The former view hypothesizes that autism results from deficits in theory of mind (ToM), while the latter hypothesizes that autism is a disorder of the executive function and of weak central coherence (WCC). ToM, executive function, and cognitive style are used to explain symptoms and behaviors of individuals with autism. Hence, the relationships between these three cognitive skills and cooperation in children with autism deserve deep concern to understand cooperation in children with autism.

1.1. Deficits in ToM and relationship between ToM and cooperation

ToM is the ability to attribute mental states (beliefs, intents, desires, pretending, knowledge, etc.) to oneself and others and to understand that others have beliefs, desires, and intentions that are different from one's own (Premack & Woodruff, 1978). Individuals with autism experience difficulty in describing their feelings and their understanding of others' mental states, e.g., beliefs and intentions (Fitzgerald & Molyneux, 2004; Moran et al., 2011). Children with autism have difficulties both in production of deception by themselves and in understanding when they are deceived by others (Baron-Cohen, 2000; Yirmiya, Solomonica-Levi, & Shulman, 1996). Children with autism have difficulties in shifting their perspective to judge

Download English Version:

<https://daneshyari.com/en/article/10317115>

Download Persian Version:

<https://daneshyari.com/article/10317115>

[Daneshyari.com](https://daneshyari.com)