Journal of Experimental Child Psychology 120 (2014) 73–86

Contents lists available at ScienceDirect

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp

How do preschoolers' sharing behaviors relate to their theory of mind understanding?

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ARTICLE INFO

Article history:
Received 22 March 2013
Revised 14 November 2013
Available online 31 December 2013

Keywords:
Preschoolers
Sharing behavior
Theory of mind understanding
Scaffolding
Diverse beliefs
Knowledge access

ABSTRACT

This study aimed to explore the development of resource sharing in preschoolers and its relationship with children's theory of mind (ToM) understanding. A total of 74 2- to 4-year-old Chinese children participated in three tasks with toys that could be shared with a puppet (animated by a female experimenter). In each sharing task, the puppet communicated her desire for children's items with a series of progressively more explicit cues. Results showed that 2- and 3-year-olds relied on more explicit communicative cues to share resources with others, whereas 4-year-olds shared more spontaneously. In addition, children's ToM understanding was positively correlated with their sharing behavior independent of their age. Specifically, children who had acquired the ability to understand that people could have different beliefs about the same thing and that people were ignorant if they had not seen the fact shared more spontaneously and shared more items with their playmate than children who had not acquired these two abilities. Findings suggest that preschoolers' sharing behavior is enhanced by their ToM understanding and explicit communicative cues provided by the playmate.

Introduction

Sharing is defined as a social interaction in which "the individual holder of a thing grants to another the partial use, enjoyment, or possession of a thing, though it may merely imply the mutual use, enjoyment, or possession" (Merriam–Webster, 1969, p. 1082). Sharing seems to have its roots

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http://dx.doi.org/10.1016/j.jecp.2013.11.007

very early in human life, with studies indicating that infants as young as 8 months showed spontaneous offering of resources to parents (e.g., Hay, 1979; Hay & Murray, 1982; Rheingold, Hay, & West, 1976). Although it emerges early, it appears to be a unique challenge for young children. Sharing is infrequent unless it is requested by a potential recipient (Birch & Billman, 1986; Brownell, Iesue, Nichols, & Svetlova, 2013; Brownell, Svetlova, & Nichols, 2009; Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011; Hay, Castle, Davies, Demetriou, & Stimson, 1999; Levitt, Weber, Clark, & McDonnell, 1985). Even during preschool years, spontaneous sharing of valued resources remains difficult for children, and it occurs much less frequently compared with other cooperative activities such as empathy-related responding, helping, and instrumental collaboration (Eisenberg, 2005; Grusec, 1991; Warneken & Tomasello, 2007). Children younger than 5 years tend to behave selfishly, sharing very little with others while keeping the majority of the resources for themselves (e.g., Benenson, Pascoe, & Radmore, 2007; Birch & Billman, 1986; Blake & Rand, 2010; Fehr, Bernhard, & Rockenbach, 2008; Rochat et al., 2009; Shaw & Olson, 2012; Thompson, Barresi, & Moore, 1997). As they approach school years, children are more willing to share resources with others (Benenson et al., 2007; Fehr et al., 2008; Gummerum, Hanoch, Keller, Parsons, & Hummel, 2010; Rochat et al., 2009; Thompson et al., 1997). In fact, by around 7 years of age, children of Western middle-class families share half of their resources with peers (Blake & McAuliffe, 2011; Fehr et al., 2008). Even more impressive, children in societies that promote traditional collective values, such as China, start sharing resources spontaneously and equally with peers by around 5 years of age (Rao & Stewart, 1999; Rochat et al., 2009).

Numerous studies have been conducted on developmental changes in children's sharing behavior, yet we know little about the underlying mechanisms of sharing. Current theories have proposed various underlying processes such as the basic affiliative and imitative tendencies toward people (Grusec, 2006; Hay & Cook, 2007; Rheingold, 1982), the ability to differentiate one's own and others' internal states (e.g., Moore, 2007), the sympathetic ability to relate one's own emotions and feelings to others (e.g., Eisenberg, 2007; Zahn-Waxler & Radke-Yarrow, 1990), the understanding of ownership (Brownell, Iesue, et al., 2013), and an innate biological predisposition for empathy and altruism in infants (Tomasello, 2008; Warneken & Tomasello, 2009; Zahn-Waxler, Robinson, & Emde, 1992). These different theoretical perspectives emphasize social–cognitive and motivational components of early prosocial responding at different levels. Yet they agree, to different extents, that the origin of humans' altruistic prosocial behavior is in compassion—that is, understanding and caring about others' needs or emotions (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981)—in combination with universal norms of reciprocity and fairness (e.g., Fehr & Fischbacher, 2004; Lane, Wellman, Olson, LaBounty, & Kerr, 2010; Singer & Steinbeis, 2009).

This understanding of others' needs and emotions may be manifested in theory of mind (ToM) understanding, that is, attributing mental states such as desires, intentions, beliefs, and needs to oneself and others (e.g., Premack & Woodruff, 1978). Sharing increases dramatically in preschoolers (e.g., Benenson et al., 2007; Blake & Rand, 2010; Fehr et al., 2008; Rochat et al., 2009) at the same time that ToM understanding is also undergoing significant developmental change (e.g., Wellman, Fang, Liu, Zhu, & Liu, 2006; Wellman & Liu, 2004). With the development of the ability to monitor and understand each other's intentions, desires, beliefs, emotions, and other mental states, one may become progressively better at taking others' perspectives into account and regulating one's activities in concert with others' activities; hence, one may grow to be more concerned with others' welfare (Fehr et al., 2008; Tomasello & Carpenter, 2007). The main goal of the current study was to test this hypothesis by investigating how children's ToM understanding associates with their sharing behavior.

Previous studies have shown that preschoolers' scores on ToM tasks negatively predict subsequent aggressive or disruptive behavior for boys and positively predict prosocial behavior for girls after controlling for age (Walker, 2005). In addition, more advanced ToM understanding related to more fair offers in the Ultimatum Game (Takagishi, Kameshima, Schug, Koizumi, & Yamagishi, 2010). In the Ultimatum Game, a participant is given a monetary endowment and is asked to make a decision regarding how to divide the endowment between himself or herself and a responder. If the responder accepts the offer, each one will receive the payment according to the proposer's offer; if the responder rejects