



Full length article

## Socio-cognitive influences on the domain-specificity of prosocial behavior in the second year



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### ABSTRACT

The main aim of this study was to explain the domain-specificity of early prosocial behavior in different domains (i.e., helping, comforting, and cooperation) by simultaneously assessing specific socio-cognitive factors (i.e., self-other-differentiation and joint attentional skills) that were hypothesized to be differentially related to the three domains of prosocial behavior. Based on a longitudinal study design, observational and parental report data were collected when toddlers ( $N = 42$ ) from German urban middle-class families were 15 and 18 months of age. At 15 months, regression analyses indicated differential relationships between socio-cognitive development and prosocial behavior (i.e., joint attentional skills were positively related with helping and, as hypothesized, both joint attentional skills and self-other differentiation were positively related with cooperation). Furthermore, self-other differentiation at 15 months predicted increases in coordination between 15 and 18 months. Finally, between 15 and 18 months, parental reports of socio-cognitive measures increased significantly while behavioral measures of both socio-cognitive concepts and prosocial behavior were stable across time. In sum, these results support the theoretical assumption of domain-specific socio-cognitive influences that constitute differential development of prosocial behavior. Implications of the results for theory and future studies are discussed from different perspectives with a focus on an interference interpretation calling for the integration of socialization approaches to the study of prosocial development.

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## 1. Introduction

### 1.1. The emergence of prosocial behavior in the second year

Broadly, prosocial behavior can be defined as behavior that is responsive to others' needs and intended to benefit another (Eisenberg, Fabes, & Spinrad, 2006). As a rich body of empirical evidence demonstrates, prosocial behavior emerges around 12 months and increases in frequency and flexibility during the second year in different domains: toddlers start comforting others in distress (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992), they help others reach a goal, either instrumentally or cooperatively (Warneken, Chen, & Tomasello, 2006; Warneken & Tomasello, 2007) and they start sharing resources

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(Rheingold, Hay, & West, 1976). In the current study, we focus on three domains of prosocial behavior that require only little effort and do not involve direct material costs (cf. Warneken & Tomasello, 2009): helping another by handing over an object, comforting someone in distress, and coordination during cooperation, i.e., children's motivation and skill to coordinate their actions to reach a goal with the partner after seeing him fail individually.

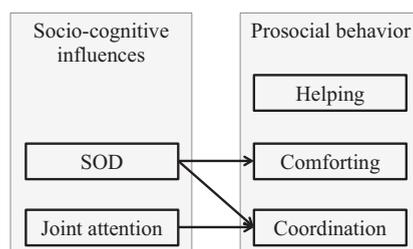
### 1.2. Specific socio-cognitive influences on the different domains of prosocial behavior

More recently, researchers have acknowledged the domain-specific nature of prosocial behavior either by demonstrating that helping and sharing were uncorrelated at 18 and 24 months (Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011) or by showing that helping, comforting, and costly comforting (i.e., giving away one's personal favorite toy), followed different developmental trajectories across the second year (Svetlova, Nichols, & Brownell, 2010). Consequently, the field has moved toward empirically differentiating between different domains of prosocial behavior (see also Paulus & Moore, 2012). The exact mechanism(s) underlying the domain-specific nature of prosocial development during toddlerhood is currently the subject of much debate (e.g., Hay & Cook, 2007). Some authors argue that different domains are based on and require different socio-cognitive capacities (Dunfield et al., 2011; Svetlova et al., 2010). According to these researchers, helping someone instrumentally is the least demanding domain of prosocial behavior because toddlers only have to infer the goal-directedness of the activity that they observe, which they normally begin to do around six to nine months (Woodward, 1998). This argument applies especially to out-of-reach tasks, in which the experimenter unsuccessfully grasps for an object. Comforting others who are in distress, i.e., emotion-related prosocial behavior, on the other hand, is more complex and relies on the presupposition that toddlers can infer and understand the other person's subjective mental state, i.e., their negative emotional state (Dunfield et al., 2011; Svetlova et al., 2010). Empirical support for this assumption comes from studies that have shown that comforting is related to self-other-differentiation as assessed by mirror self-recognition (Bischof-Köhler, 1991; Kärtner, Keller, & Chaudhary, 2010; Zahn-Waxler et al., 1992). Thus, self-other differentiation indexes toddlers' specific competence to differentiate between own and others' psychological states that depend on secondary representation as, e.g., emotions and desires (see Perner, 1991). Therefore, self-other-differentiation in the second year should be correlated with comforting, but not helping. In consequence, the development of self-other differentiation might be one of the factors that contribute to domain-specific development.

With regard to cooperative behavior there is wide consensus that toddlers not only have to differentiate between themselves and others but that they also need to coordinate their own intentions with those of others in order to cooperate successfully (Brownell, 1986; Tomasello, Carpenter, Call, Behne, & Moll, 2005; Warneken et al., 2006). In support of this assumption, Brownell and colleagues could show that toddlers' degree of coordination during cooperation with a peer was positively correlated with self-other-differentiation as assessed by language about self and others (Brownell, Ramani, & Zerwas, 2006) and during an elicited pretense procedure (Brownell & Carriger, 1990).

Another specific aspect of socio-cognitive development that seems essential for successful cooperation is toddlers' social-communicative competence (Tomasello et al., 2005). Coordinating complementary roles and timing activity to coincide with that of the partner presupposes advanced joint attentional skills and, more specifically, toddlers' capacity to respond to and to direct others' attention by gestural communication. In support of this assumption, Brownell et al. (2006) demonstrated that toddlers that were more advanced in sharing an adult's attentional focus (e.g., following and sharing adults' referential points and gazes) were better at coordinating their behavior with a peer during a cooperation-task.

Based on these findings, we hypothesize that the distinctness of different types of prosocial behavior is constituted by domain-specific socio-cognitive influences. More specifically, we hypothesize that both advanced joint attentional skills and self-other differentiation are specific abilities that contribute to the domain-specificity of prosocial behavior in that these concepts are differentially related to helping, comforting, and cooperation. Both self-other differentiation and joint attentional skills are required for toddlers' capacity to cooperate, i.e., to coordinate their behavior with an adult in reaching a goal. As Fig. 1 illustrates, this double requirement sets cooperation apart from both comforting (which only requires self-other differentiation) and helping (which neither requires advanced joint attentional skills nor self-other differentiation).



**Fig. 1.** Hypothesized socio-cognitive influences on the different domains of prosocial behavior.

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