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Early Development of Prosocial Behavior: Current Perspectives

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It is now clear that prosocial behavior of many different sorts appears in the second year of life, possibly earlier for some forms. In a growing number of studies, infants between 12 and 24 months of age have been shown to help, comfort, share, and cooperate with others. The mystery is how such young children can generate these relatively complex, other-oriented behaviors and what could account for their emergence in this period. The papers in this special issue represent some of the most recent and innovative work on questions about the early development of prosocial behavior and potential contributors to its manifestations in infancy.

Early developments

Until recently, research on early-emerging prosocial behavior focused largely on empathic responsiveness to others' distress. A number of scholars have shown that children respond to others' distress in the first year of life (e.g., Geangu, Benga, Stahl, & Striano, 2010; Roth-Hanania, Davidov, & Zahn-Waxler, 2011) and that infants' experiences with parents are linked to the development of empathic concern and empathy-related prosocial responses in the second year (e.g., Knafo, Zahn-Waxler, Van Hulle, Robinson, & Rhee, 2008; Kochanska, Forman, & Coy, 1999; Spinrad & Stifter, 2006; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). A handful of early studies similarly showed that toddlers share, help, and cooperate with others, especially in everyday contexts buttressed with affective and behavioral support from parents (e.g., Dunn & Munn, 1986; Hay, 1979; Rheingold, 1982; Rheingold, Hay, & West, 1976; Ross & Lollis, 1987).

More recent research has focused on normative patterns of helping, comforting, sharing, and cooperating in toddlers, and the conditions under which prosocial responding occurs. We now know that children spontaneously share information with adults by 12 months of age (Liszkowski, Carpenter, & Tomasello, 2008) and spontaneously share food and toys by 18 – 24 months (Brownell, Svetlova, & Nichols, 2009, in press; Hay, Caplan, Castle, & Stimson, 1991; Vaish, Carpenter, & Tomasello, 2009); that they help adults instrumentally by assisting in goal-directed efforts by 14 – 18 months (Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011; Over & Carpenter, 2009; Warneken & Tomasello, 2006) and help

empathically by assisting with emotion-related problems by 30 months (Svetlova, Nichols, & Brownell, 2010); that they cooperate with adults on novel tasks by 18 months (Warneken, Chen, & Tomasello, 2006) and with peers by 24 months (Brownell, Ramani, & Zerwas, 2006). Research has also demonstrated that neither adults' directives to two-year-olds to help others, nor praise and reinforcement, enhance young children's instrumental helping, at least in the moment (Warneken & Tomasello, in press), consistent with the idea that by the end of the second year children have become autonomously prosocial (Brownell et al., in press).

However, toddlers are not indiscriminately prosocial. Twenty-one to 24-month-old children are aware of and use information about a partner's need as well as friendliness, helpfulness, and trustworthiness to decide whether to help or not (Dunfield & Kuhlmeier, 2010; Vaish et al., 2009), although they are not yet able to use another's emotion-based preference cues to make decisions about how to help (Hobbs & Warneken, 2012). Interestingly, despite their ready prosociality, toddlers who demonstrate one form of prosocial behavior such as helping may or may not be similarly prosocial when it comes to another form such as sharing or comforting (Dunfield et al., 2011).

This rapidly expanding research suggests that the second year is a period when prosocial responding truly blossoms. Toddlers are becoming able to infer and assess others' needs, desires, and emotional states from increasingly abstract information, and they are increasingly motivated to intervene in others' unfortunate circumstances to help them achieve what they wish and to alleviate their negative internal states. At the same time, there are both individual differences in young children's propensity toward prosociality and clear constraints on their motivation and ability to engage in prosocial action.

The papers in the current issue expand on this foundational body of work in several ways. They highlight a diverse array of new methods and bring them to bear on core questions about the nature and development of prosociality in the first two years of life, from what motivates such young children to help others; to the understanding and expectations that underlie prosocial behavior; to the role of social experience in both understanding and generating prosocial responses.

Explanations

How can prosociality so early in life be explained? One possibility is that infants possess specialized cognitive and/or social capacities that ground prosocial responding. These could include innate conceptual representations of others' psychological states that create intuitions about, evaluations of, and expectations for prosocial behavior (Hamlin, 2012; Hamlin, Wynn, & Bloom, 2007; Premack, 2007; Wynn, 2008). Or infants could possess unique motivations to share attention, perception, emotion, and information with others that, when combined with growth in social understanding, naturally generate other-oriented prosocial behavior (Tomasello, Carpenter, Call, Behne, & Moll, 2005; Warneken & Tomasello, 2009). The second possibility is that prosocial behavior emerges out of infants' shared activities and relationships with others (Brownell, 2011; Carpendale & Lewis, 2004; Dunn, 2006, 2008; Nelson, 2007; Rheingold, 1982). Infant participation in everyday cooperative exchanges may allow adults to scaffold, support, and encourage nascent forms of prosocial responding,

conditioned on the infant's current emotional maturity, social understanding, and interactive skills. Thus, infants' social experiences in affiliative and affectively rich social and communicative interactions with parents and others, which are themselves prosocial, engage the emotions, cognitions, and behavior critical to prosocial responding, gradually giving rise to the infant's own prosocial behavior.

Although these alternative explanations are often pitted against each other, they need not be altogether mutually exclusive. That is, socialization must have something to build on, and at the same time, whatever is prepared must be coaxed into expression through particular experiences during development. Such processes are sometimes referred to as experience-expectant (Greenough et al., 1987), wherein normative development relies on specific normative environments, in this case social, emotional, and communicative experiences and relationships.

Thus, two questions lie at the core of current efforts to explain the emergence of prosocial behavior in infancy, regardless of whether children come pre-endowed with prosocial understanding, expectations, and predispositions, or whether social experiences in infancy spawn prosocial behavior, or some combination. First, what is it that the naïve organism is endowed with: what, specifically, is evolutionarily prepared in the very young child? Second, how exactly do proximal mechanisms, including social experiences, contribute to the emergence and early development of prosociality?

The papers in the current issue speak to both questions, although with greater emphasis on the second. Hepach et al. (this issue) use converging evidence from three studies with children between 18 and 25 months of age to argue that emerging prosociality is motivated by intrinsic concern for others' well-being. This other-oriented concern is held to derive from “an early moral sense in which we care about those with whom we are interdependent,” suggesting that early prosocial motives may reside in basic social-affiliative processes. It could be argued that children are naturally endowed with this early moral sense (e.g., Warneken & Tomasello, 2009); however, by locating its roots in social-affiliative processes, the door is also left open to potential effects of social experiences. The other three empirical papers in this issue speak to these.

Sommerville et al. (this issue) does so indirectly, suggesting that changes in infants' expectations about fairness between 12 and 15 months, which are related to prosocial responding, are not consistent with explanations based solely on innate moral principles. Instead, experience must also be at work. The two other papers provide more detailed perspectives on how social experiences may generate early prosociality. Henderson and colleagues (this issue) build on methods used to study the role of experience in infants' understanding of goal-directed actions. They experimentally manipulated infants' social experiences, discovering that 10-month-olds who had active experience with collaborative exchanges were able to understand the shared goal of cooperating partners, whereas infants with only passive, observational experience and those with no experience did not. Brownell and colleagues (this issue) did not experimentally manipulate children's experiences; instead, they captured naturally occurring social exchanges between parents and their young children as they read books together. They found that parents who encouraged their 18- to

30-month old children to reflect on, label, and explain others' emotions had children who more eagerly helped and shared with someone else.

Methods

To gain traction on what develops, as well as when, how, and why, investigators must expand on the structured observations that are typically used to elicit prosocial responding and which have informed much of what we currently know. These have been highly productive, but for the field to continue moving forward they will need to be supplemented with new means for identifying prosocial attitudes, understanding, and motivation, and with methods for specifying core aspects of social experience that influence the emergence and development of prosociality.

To illustrate, a variety of behavioral tasks have been used to study instrumental and empathic helping; the findings suggest that instrumental helping emerges quite early, preceding empathic helping in development (Svetlova et al., 2010; Warneken & Tomasello, 2007). Scholars have explained this developmental pattern on conceptual grounds by suggesting that instrumental helping may rely primarily on understanding others' action-related goals and how they can be achieved, which is in place already in the first year of life; whereas empathic helping requires inferences about others' emotions and their causes, a later developing series of accomplishments. However, current behavioral tasks make it difficult to test this argument directly. If the two kinds of helping had different neural signatures, all other things being equal, this would be strongly suggestive of distinct underlying mechanisms. Neuroimaging methods have been used to examine correlates of empathic responding and prosocial helping in older children and adults (e.g., Decety, 2011; Singer, 2006), but no such studies have been published with very young children when prosocial responses are emergent. Very recently, however, Paulus and colleagues (in press) completed an ERP study showing that 18 – 24 month olds exhibit different cortical activation asymmetries for instrumental helping and empathic comforting. Greater left frontal activation was associated with empathic responding whereas greater right temporal activation was associated with instrumental helping, consistent with the hypothesis that action understanding may underlie instrumental helping in toddlers. Notably, this approach provides the first empirical evidence that these two forms of prosocial helping have distinct causes.

In the current issue, several other novel measurement approaches are highlighted that likewise begin to provide a fuller perspective on the representations, expectations, and motivations that serve early prosociality. Henderson et al. (this issue) and Sommerville et al. (this issue) capitalized on looking time measures, using habituation and violation of expectation procedures respectively. Although these methods have been widely used in the study of infant cognition, including social cognition, they have not previously been used to explore early prosociality. Henderson and her colleagues discovered that infants' understanding of shared goals in novel collaborative interactions between others emerges between 10 and 14 months of age, in concert with infants' own ability to engage in such interactions outside of caregiving and play routines. Sommerville and her colleagues discovered that egalitarian motives emerge between 12 and 15 months of age when infants

come to expect equal (fair) over unequal (unfair) outcomes as they watch someone distributing resources to others. Hepach and his colleagues (this issue) adapted an established psychophysiological measure to the study of prosociality. Using pupillometry for the first time with young children in a prosocial context, they found that toddlers' sympathetic arousal was activated by seeing another in need, in this case when another person dropped something out of reach that was necessary for his goal. More important, they discovered that children's arousal was reduced not only when the children themselves had the opportunity to provide help, but also when they witnessed someone else provide help. Because behavioral measures of prosociality can be interpreted in a variety of ways, this demonstration of toddlers' internal motivational state during a helping task is the first to show that toddlers do, indeed, possess a fundamental concern for others in need and that they are motivated to see another's needs resolved.

Continuing Issues

In the final paper, Thompson and Newton (this issue) elaborate a number of key issues that cut across the four empirical articles and they present important challenges for this emerging area of inquiry. These include the need to recognize the multidimensionality of prosocial behavior, further exploring the unique developmental patterns in different forms of prosociality. Current issues also include a variety of methodological concerns, from task demands to social context to child characteristics, which need to be considered in operationalizing and characterizing early prosocial motives and behavior. Particularly noted are the advantages in using multiple tasks and converging measures, which several of the papers illustrate well. Finally, Thompson & Newton remind us that prosocial behavior and the motivational and social-cognitive developments that give rise to it are fundamentally grounded in diverse social and emotional experiences which provide the basic building blocks for an emergent morality.

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