

The Motivational Foundations of Prosocial Behavior From A Developmental Perspective—Evolutionary Roots and Key Psychological Mechanisms: Introduction to the Special Section

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Prosocial behavior is versatile, multifaceted, and complex. This special section seeks to advance coherent, integrative understanding of prosocial development by addressing this topic through the prism of motivations. This conceptual Introduction presents key ideas that provide a framework for thinking about motivation for prosocial behavior and its development. It outlines the evolutionary roots of prosocial behavior, underscoring the interdependent roles of nature and nurture. This is followed by a discussion of several key psychological mechanisms reflecting different motivations for prosocial action (empathy for a distressed other, concern about another's goal, desire to act in accordance with internalized prosocial norms, and guilt). We discuss the critical components of each motivation and highlight pertinent contributions of the special section articles.

Developmental researchers have been drawn to the study of prosocial behavior for decades—a research interest which has increased exponentially over the past half century (see Figure 1). Defined often as “voluntary behavior intended to benefit another” (e.g., Eisenberg, Fabes, & Spinrad, 2006), prosocial behavior has likely elicited this degree of research attention for at least three reasons. First, humans view prosociality as vitally important. Schwartz and Bardi (2001), for example, found striking consensus across samples from 63 nations regarding the primary importance attributed to values reflecting prosociality (e.g., benevolence). Second, prosocial behavior can appear counterintuitive from an evolutionary standpoint; its evolutionary origins have therefore attracted considerable attention, and this has stimulated the developmental literature as well. We address this issue later in this Introduction.

A third reason prosocial behavior has been captivating researchers is its complexity. The definition provided above may appear simple, but this is

misleading. Actions undertaken in order to benefit another are incredibly versatile: They include a diverse set of behaviors (as individuals can do good deeds for others in a multitude of ways, and in a variety of different circumstances), and these behaviors may also be enacted toward various targets. Moreover, these different prosocial behaviors can involve different cognitive, regulatory, and socialization processes, and therefore also have different developmental trajectories. Thus, prosocial behavior is a complex, multifaceted construct (Mayseless, 2016; Padilla-Walker & Carlo, 2014; Thompson & Newton, 2013). This means that studying it in different ways often produces different answers—not necessarily because the findings of studies are inconsistent but rather because scientists have concentrated on different pieces of the puzzle. For a full understanding of prosocial behavior and its development, then, an integration of many different lines of work will be necessary.

Given the many forms of prosociality, a question that has attracted much interest is whether different prosocial behaviors cluster together to form a dispositional core, or conversely—are they distinct and

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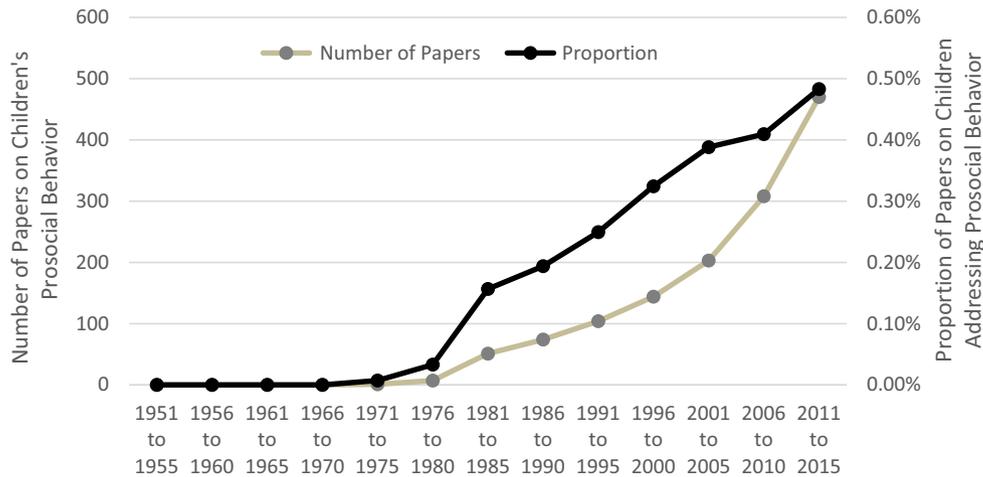


Figure 1. Increase in research on children's prosocial behavior from 1950 to 2015. The figure presents the total number of articles on children (between 0 and 12 years) that mention "prosocial behavior" in their abstract (gray line) as well as the percentage of such articles out of all psychology articles published on this age group (black line), in 5-year intervals. Articles were located through the PsycInfo database, selecting for age group = childhood (birth to 12 years), and using various spellings of the term "prosocial behavior."

differentiated, even unrelated to one another? Perhaps not surprisingly (given the complexity noted above), the answer appears to be "both." Thus, there is evidence in the developmental literature of both differentiation between distinct forms of prosociality (e.g., Dunfield & Kuhlmeier, 2013; Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011; Paulus, Kühn-Popp, Licata, Sodian, & Meinhardt, 2013; see also Carlo, 2006) and evidence for a degree of convergence between different forms of prosociality (e.g., Eisenberg et al., 1999; Knafo-Noam, Uzevsky, Israel, Davidov, & Zahn-waxler, 2015; Mayseless, 2016; Newton, Thompson, & Goodman, 2016). Moreover, whether different forms of prosocial behavior converge or diverge also depends on the features of the methodology being employed to measure those behaviors (Thompson & Newton, 2013). What is clear, however, is that prosocial behavior cannot be reduced to a simple, global construct without losing vital information in the process. A comprehensive account of prosociality thus needs to take into account the specificity of different forms of prosociality as well as how they may partly converge across development.

In this special section, we propose that a key approach in order to advance a coherent, integrative understanding of prosocial development is to address this topic through the prism of *motivations*. Individuals may act prosocially for diverse reasons (e.g., because they feel empathy or guilt, in expectation of reciprocation, in order to self-enhance, because of the values they have internalized, their habits, etc.). This plurality of motivations leads to,

and can explain, much of the diversity in prosocial responding noted above. Motivations may also change across development, driving change in prosocial behavior. Addressing the motivations underlying prosocial acts is therefore absolutely critical for our understanding of the very meaning of these behaviors and their development (Eisenberg, Spinrad, & Knafo-Noam, 2015). Deciphering these motivations can be challenging, however, and requires carefully designed studies (Eisenberg, VanSchyndel, & Spinrad, 2016; Hepach, Vaish, & Tomasello, 2013). This special section thus aims to advance a focus on motivations in the study of prosocial development.

The current special section consists of a collection of 10 empirical articles and one theoretical article (in addition to this Introduction) that shed light on the development of different motivations for prosocial action and their predictors, outcomes, and mechanisms. Many of the studies utilize innovative methodologies, examine relevant cultural and socialization processes, and/or involve longitudinal samples. The samples span a wide range of ages and cultural backgrounds. Finally, some of the studies focus on developmental age differences, whereas others examine individual differences. Together, this special section highlights the importance of focusing on the motivational foundations of prosocial behavior from a developmental perspective in order to advance understanding of this important, highly valued set of human behaviors.

The goal of this Introduction is to present key concepts and ideas that provide a framework for

thinking about motivation for prosocial behavior. Motivations can be examined from an ultimate perspective (why have these tendencies evolved?) or from a proximate perspective (what are the psychological mechanisms propelling individuals to act prosocially in different situations?; de Waal, 2008). Both points of view are important for understanding prosocial development and can inform one another. We thus begin with a consideration of the evolutionary roots of acting prosocially. Then, we define and discuss the features of several key psychological mechanisms reflecting different motivations for prosocial action. Throughout, we also note how relevant special section contributions shed new light on pertinent questions.

The Evolutionary Roots of Prosocial Behavior

As explained below, the evolution of prosociality has implicated both genetic and environmental processes. Moreover, both influences continue to play interdependent roles in the ontogeny of prosocial behavior. Thus, although evolution has created a biological preparedness in humans to act prosocially, this innate potential would not come to light without suitable rearing experiences (Brownell, 2013; Dahl, 2015). Whether and to what extent children's genotypic capacities and propensities to behave prosocially become expressed in their behavioral phenotypes is therefore dependent on their life experiences. Notably, humans have also evolved to be socialized—with a protracted period of dependence on caregivers during which the individual acquires the social group's ways of thinking and doing things through a set of socialization processes (Bugental, 2000; Grusec & Davidov, 2010). Thus, both nature and nurture are essential in the development of prosociality, and both are considered in this Introduction.

Why, then, have humans evolved to act prosocially—to voluntarily do things that benefit others? This is a conundrum, given that helping others can bear some costs for the self: spending time, material goods, or energy on others leaves fewer such resources for one's own needs. Various theoretical accounts have therefore been proposed to explain how doing things for the benefit of others can increase the individual's own reproductive fitness (for reviews, see Eisenberg et al., 2006; Mayseless, 2016). The most flexible and comprehensive explanation appears to be the one focusing on the important role of *interdependence* in human phylogeny (Roberts, 2005; Silk & House, 2016; Tomasello,

2014). Doing things for the benefit of another can be beneficial for one's own reproductive fitness if individuals are interdependent and thus have a stake in the other's welfare (Roberts, 2005; Tomasello, 2014).

A genetic relation (kinship) or a reciprocal arrangement can be seen as specific examples of interdependence between individuals, but numerous other instances of interdependence also occur in group life (Roberts, 2005). For example, whenever the contribution of more than one individual is needed in order to obtain a desired goal, the individuals are dependent on one another in terms of their ability to reach that goal. Once there is interdependence, one's own reproductive fitness is indirectly (or directly) promoted by the reproductive fitness of others in the group. Therefore, doing things to promote the welfare of the others (i.e., acting prosocially) confers some benefits for the helper's own reproductive fitness (even in the absence of direct reciprocation); and in many cases, these benefits can outweigh the costs that the act of helping incurs for the self (Roberts, 2005).

Indeed, interdependence most likely played a prominent role in the everyday life of our early human ancestors (and it still does for humans today), much more so than for other great apes (Silk & House, 2016; Tomasello, 2014). As humans began to rely on more complex subsistence techniques (e.g., hunting), they needed to collaborate in order to achieve their goals. This also required the sharing of knowledge (e.g., of how to obtain and process foods), including by teaching this valuable know-how to others and to the younger generations, which also promoted the honing of valuable subsistence techniques. Cooperation was also needed in order to withstand harsh conditions and fend off threats. In addition, the skills and expertise required for specific subsistence tasks likely facilitated division of labor between group members, increasing their economic interdependence on one another (e.g., different group members specializing in different foraging tasks, and sharing or exchanging the fruits of their labor; Silk & House, 2016). Moreover, to ensure that children were born healthy and grew up to maturity under these ecological conditions, mothers had to rely on other group members to help provide for and take care of offspring. This process, known as collaborative breeding, illustrates the proverb "it takes a village to raise a child," underlining once again the importance of interdependence within the group (Hrdy, 2005; Silk & House, 2016). Moreover, this process played out developmentally. As infants and young

children themselves experienced the caring ministrations of their parents and other caregivers, they observed prosocial models and formulated expectations for their own behavior toward others (Mikulincer & Shaver, 2005; Hastings, Miller, Kahle, & Zahn-Waxler, 2014). Children were also given opportunities to contribute to the family and group's subsistence from an early age (e.g., participate in routine chores, help care for young siblings; Warneken, 2015), with experiences of being successfully prosocial serving to reinforce the motivation.

Overall, then, early humans (both adults and children) collaborated and relied on one another in a multitude of ways, and doing so was crucial to the survival and prosperity of our species. In this context, genetically based prosocial tendencies and motivations, which facilitated such cooperation, provided distinct reproductive fitness advantages and were thus more likely to be transmitted to future generations. Observation of prosocial models, receipt of prosocial actions, and occasions to act prosocially within the home and community provided children with the experiences needed to express their genotypic potential and establish enduring patterns of prosocial behavior. In addition, prosocial tendencies were also promoted by social selection processes, with those individuals who developed stronger tendencies to act prosocially also becoming more likely to be selected as mates (sexual selection) and as collaborators or social partners more broadly (e.g., Goetz, Keltner, & Simon-Thomas, 2010; Tomasello, 2014).

Finally, prosocial tendencies in humans were also promoted by cultural selection processes. In situations of competition or conflict between rival groups, those groups that had a stronger culture (social norms) of cooperation were more likely to succeed and prevail over less collaborative and united groups, resulting in the strengthening and spreading of prosocial norms (Chudek & Henrich, 2011; Silk & House, 2016). Group norms emphasizing cooperation and prosocial behavior even in the face of competing self-interests were maintained and strengthened by a collection of mechanisms, which are still relevant to this day. These include pressures for conformity (e.g., fear of social disapproval or social exclusion), internalized feelings preventing norm violations (shame) or encouraging reparation following norm violation (guilt), as well as a sense of pride and social identity derived from upholding these norms (e.g., Chudek & Henrich, 2011; Tomasello, 2014).

Overall, then, these genetic, familial, social relational, and cultural pressures combine to account

for the evolution of prosocial motivations and tendencies in humans, and their potential to be manifested from an early age. These motivations and tendencies form the bases for the proximate, psychological mechanisms, driving individuals to act prosocially in a variety of situations. We turn to discuss them next.

Motivations for Prosocial Behavior: Key Psychological Mechanisms

Because humans needed to collaborate in a variety of situations, it is not surprising that we have developed different psychological mechanisms that promote prosocial and cooperative behavior in different ways. A single mechanism would not have been flexible enough to facilitate all forms of cooperation that have been important to humans. For example, humans can feel compassion for a suffering other, can feel compelled to help another complete an unfulfilled goal, and can abide by social norms that benefit others in the community. All these motivational mechanisms reflect concern for others and can facilitate others' well-being, but in different ways. Notably, concern is focused on different elements in each case (the other's feelings of distress, what the other is trying to achieve, doing the right thing by others). In the remainder of this Introduction, we discuss each of these motivational mechanisms in turn. Specifically, we analyze the key components of each motivation—including cognitive, affective, and regulatory processes—and address issues pertaining to development and to socialization.

Notably, our discussion does not aim to encompass all forms of motivation for prosocial action but rather focuses on several key mechanisms that feature more prominently in the developmental literature in general, and in the contributions of this special section in particular. In their conceptual article in this special section, Eisenberg et al. covered a wider range of motives for prosocial behavior, mapping them along a continuum ranging from altruistic to egoistic. Their approach elucidates the value of studying motivations for prosocial action and outlines promising foci for future research.

Concern for a Distressed Other

Humans, like some other species, have a built-in capacity to have an instant embodied experience of what another is feeling (de Waal, 2008; Decety,

Bartal, Uzefovsky, & Knafo-Noam, 2016). This propensity for emotional resonance—known as *empathy*—facilitates communication and connection between people. This ability to feel what another is feeling, or share in the other's emotion, is rooted in the brain—observing another individual experiencing an emotion or sensation activates some of the same neural substrates that are operative when the self experiences that same emotion or sensation first hand; this partial overlap in neural circuits is thought to underlie our capacity for empathy (e.g., Decety, 2011).

Thus, when another person is in distress or need, empathy involves experiencing some level of arousal and discomfort, akin to what the other is feeling. If the observer can regulate this empathic arousal, and remains focused on the other, this leads to an other-focused emotional state—known in the literature as empathic concern, sympathy, or compassion (used here interchangeably, despite nuances; in everyday language, this is often simply referred to as “empathy”); and this emotional response is a powerful motivator of prosocial action aimed at reducing the other's suffering. In contrast, failure to regulate the arousal generated by seeing the other's predicament will result in a self-focused distress response (e.g., disturbance, anxiety; known as personal distress or empathic distress), which provides a much weaker motivation for prosocial action (Batson, 1991; Eisenberg et al., 2006).

Empathic concern can also be generated by top-down processes, for example, by hearing or reading about the dire situation of other people and taking their perspective, which then leads to empathic arousal and sympathy for the other (Hoffman, 2000; Vaish, 2016). But regardless of how it is activated, empathic concern appears to always include the following components: (a) understanding (even if implicitly) that another individual is likely distressed or suffering (also known as “cognitive empathy,” i.e., comprehension of the other's emotional state or situation). This also indicates at least implicit understanding that the self and the other are separate entities (by recognizing a negative state in the *other*); (b) emotional arousal as a result of the other's state (empathic arousal), which the person needs to regulate; and (c) feeling for and caring about the other—that is, wanting the other's well-being to be restored. Because empathic concern is focused on the state of the other, it is the reduction of the other's suffering that the observer is interested in (i.e., a truly other-focused interest); thus, simply escaping the situation cannot alleviate one's empathic concern (only one's self-focused anxiety),

as it will not improve the other's state (Batson, 1991; Goetz et al., 2010).

Numerous studies have shown that empathic concern promotes prosocial action aimed at alleviating others' suffering, including behavior that is costly for the self, in both adults and children (e.g., Batson, 1991; Eisenberg et al., 2006, 2015; Knafo, Zahn-Waxler, Van Hulle, Robinson, & Rhee, 2008). Although empathic concern was once assumed to emerge only during the 2nd year of life, recent evidence suggests that even during the 1st year, infants can experience and express empathic concern for others in distress, and these early manifestations of sympathy predict subsequent prosocial behavior (Davidov, Zahn-Waxler, Roth-Hanania, & Knafo, 2013; Liddle, Bradley, & Mcgrath, 2015; Roth-Hanania, Davidov, & Zahn-Waxler, 2011).

Empathic concern is thus a potent motivator of prosocial behavior in the context of others' distress, although it is by no means an automatic or indiscriminative mechanism. Whether and how strongly one feels compassion for the other, and whether this leads to prosocial action, depends on various intrapersonal processes and features of the context (e.g., appraisal of the other person and of the situation; Decety, 2011; Decety et al., 2016; Goetz et al., 2010; Vaish, 2016). For example, even toddlers show reduced empathic concern if the other's distress is unjustified (Chiarella & Poulin-Dubois, 2013).

Individual differences in empathic concern are influenced both by genes and by the environment (Eisenberg et al., 2015; Knafo et al., 2008). Included in the environmental effects are pertinent socialization processes. In particular, parents' responsiveness to children's distress and their ability to instill in children a sense of confidence in parental support and protection (i.e., a secure attachment) seem particularly important in facilitating children's ability to respond with concern and compassion to the distress of others (Davidov & Grusec, 2006; Hastings, Miller, & Troxel, 2015; Panfile & Laible, 2012). This process is at least partially mediated by children's ability to regulate their negative emotional arousal, with parental responsiveness to distress and child security of attachment predicting better emotion regulation, which in turn predicts greater concern and prosociality toward distressed others. Another socialization pathway likely involves caregiver-child conversations about others' emotions and mental states. Such interactions, beginning as early as the 2nd year of life, have been linked to children's prosocial responses to others in distress, even at a cost to the self, possibly mediated by children's better understanding of emotions (Brownell,

Svetlova, Anderson, Nichols, & Drummond, 2013; see also Newton et al., 2016, discussed below).

As noted earlier, the ability to regulate the emotional arousal induced by the perception of the other's distress (i.e., empathic arousal) plays a crucial role in facilitating sympathy and prosocial action (Eisenberg et al., 2006, 2015). Generally speaking, the individual needs to be moved by the other's plight without becoming overly distraught as a result. But what constitutes effective regulation at the physiological level? Prior work has provided mixed findings, with concern for distressed others linked to both markers of reduced and increased autonomic arousal in different studies (see Hastings, Miller, Kahle, & Zahn-Waxler, 2014). Miller, Nuselovici, and Hastings (2016) present a novel approach that can resolve this apparent inconsistency. By paying close attention to the dynamic quality of empathy-eliciting events, and therefore modeling changes in physiological reactivity as they unfold during different phases of the event, they found evidence for both increase and decrease in parasympathetic influence over cardiac activity—but during *different stages of the process*—as predictive of concern for others in distress. Moreover, this dynamic pattern of physiological regulation predicted children's prosocial behavior longitudinally from early to middle childhood (whereas conscious feelings of sympathy played a role only in early childhood; Miller et al., 2016).

Another important question regarding the neurobiological underpinnings of prosocial motivation is which brain processes support the translation of empathic concern into prosocial behavior across development. Flournoy et al. (2016) address this question in a longitudinal functional Magnetic Resonance Imaging (fMRI) study. Their findings point to the role of the inferior frontal gyrus during early adolescence: Reactivity to emotions in this area during early adolescence (but not earlier) mediated the longitudinal association between individual differences in empathic concern and subsequent prosocial behavior. (Empathic concern is also addressed in other contributions to the special section, by comparing and differentiating its effects from those of other motivational mechanisms, as discussed below.)

Concern About What the Other Wants

Although compassion for the suffering of others is a powerful motivator, it is clear that many instances of prosocial behavior occur in the absence of others'

distress (whether overt or implied) and hence cannot involve this psychological mechanism. For example, from the 2nd year of life onward, children often help others complete their pragmatic goals (e.g., obtain an out-of-reach object); this form of helping, known as instrumental helping, can occur very readily and in the absence of distress by the other (e.g., Brownell, 2013; Warneken, 2015). Some studies also show no correlation between young children's tendency to help instrumentally and to show concern for and comforting of distressed others (Dunfield & Kuhlmeier, 2013; Dunfield et al., 2011; although other studies have found modest associations, e.g., Brownell et al., 2013; Newton et al., 2016). Paulus et al. (2013) have further shown that these two forms of prosocial behavior were associated with distinct brain activation patterns and thus implicate different neurophysiological mechanisms.

It should be noted, however, that not all instances of "helping," even when labeled as such, necessarily reflect infants' intention to help, that is, benefit the other. For example, when toddlers join caregivers in doing chores around the home (e.g., cleaning, folding laundry), they often appear more interested in participating in adults' activities than in helping the adult with the ultimate goal of tidying up the house (which they might not always understand; Carpendale, Kettner, & Audet, 2015). Thus, toddlers' goals might often be to affiliate with others, or to master a task that they perceive to be valued in their social environment, rather than a purely other-focused goal (see also Eisenberg et al., 2016).

Nevertheless, there is evidence that, at least in some cases, young children's goal is to benefit the other. Hepach, Vaish, and Tomasello (2012) showed that toddlers experienced an increase in tension or arousal (indicated by pupil dilation) when they observed another person in need of help (a male examiner reaching unsuccessfully for a dropped object). Importantly, toddlers' arousal decreased when they were allowed to help the person, as well as when they observed the person being helped by someone else. This shows that toddlers were genuinely concerned about the other obtaining *his* goal (as opposed to being motivated by a desire to interact with the other, participate in an attractive activity, or get credit for helping). In this special section, Hepach, Vaish, Grossmann, and Tomasello extend these findings by demonstrating that toddlers show increased arousal when they see a person reaching unsuccessfully for a dropped object (without expressing distress), whereas seeing the same object

fall in a nonsocial situation does not increase arousal. Importantly, Hepach et al. further showed that this internal arousal mobilizes children for prosocial action (Experiment 1), and that the arousal is only reduced when the other's need is fulfilled (the other is offered the needed object, as opposed to another dropped object irrelevant to the other's goal; Experiment 2).

Why, then, do children want to help a nondistressed other? Helping others in these situations appears to be motivated by a concern for what the other wants, for the other's goal. The critical mechanism appears to be the tension experienced by the self over the unfulfilled goal of another individual (Hepach et al., 2013; see also Paulus, 2014). When we fail to complete our own goals, we feel tension; by feeling the same tension when others (who are friendly or potential collaborators) fail to complete their goals, human beings have been able to cooperate with one another much more readily and efficiently, with the significant fitness advantages discussed earlier. This psychological mechanism thus includes the following components: (a) recognizing that another individual has not succeeded in completing a goal, (b) wanting the other to complete his or her desired goal, and (c) experiencing some tension as a result, which can mobilize action on behalf of the other. This motivational mechanism is truly other focused, reflecting a genuine desire to help others attain their goals: The internal tension is created by the other's need and subsides with the other's contentment (Hepach et al., 2016; Hepach et al., 2013). Notably, if the other person is not perceived to be in distress, the tension experienced by the observer due to the other's incomplete goal need not be negative in valence; rather, the observer may be merely attentive and responsive to the other's goal (see Hepach et al., 2013). Hence, there is likely far less need for emotion regulation in the case of this motivational mechanism as compared to empathic concern for a distressed other, albeit this proposition awaits direct empirical examination.

Although humans are motivated to assist others complete their unattained goals from an early age, this psychological mechanism does not develop in a vacuum. Dahl (2015) has shown that early on, children are frequently encouraged to perform helpful acts during everyday interactions with caregivers and are often thanked or praised for doing so. Moreover, when children are younger and thus not yet skilled at helping, such parental encouragement and social reinforcement predict children's greater helping in the home (Dahl, 2015), presumably

because they provide important knowledge, skills and habits regarding how and when to help others, and a pleasurable experience of doing so. Conversely, once children are already skilled at helping, or if reinforcement is material rather than social, then prompting or rewarding children may not support and can even hinder their intrinsic motivation to help others (Dahl, 2015; Warneken & Tomasello, 2008).

More general aspects of parent-child interaction can also be important. When caregivers are attuned and responsive to the child's goals and initiations, during play or other reciprocal interactions, they provide a model of responsive behavior for children and can thus teach and motivate them to be attuned and responsive to others in return (e.g., Grusec & Davidov, 2010; Lindsey, Cremeens, & Caldera, 2010). Moreover, learning about what others want and need, through conversations with parents about people's internal states, can also facilitate children's understanding of when and how to intervene on another's behalf. In this special section, Newton et al. shed new light on the roles of these two aspects of parenting in predicting toddlers' prosocial behavior (assisting an experimenter with her goals). They found evidence that both maternal sensitivity and mothers' speech about others' mental states, as well as the interaction between the two factors, explain individual differences in toddler's level of prosociality. Interestingly, mental state language plays a greater role in promoting prosociality when maternal sensitivity is low, indicating a compensatory effect.

Importantly, the socialization of prosociality can also differ as a function of the sociocultural context. Cultures differ in their conceptions of prosocial behavior (e.g., as emanating from inner motives and dispositions vs. from the social context and social roles) and in the types of prosocial behavior that they emphasize (e.g., helping others spontaneously vs. helping upon request). Consequently, cultures also differ in the socialization practices employed by caregivers, because different strategies are better suited for promoting different conceptions and types of prosocial behavior (Grusec, Davidov, & Lundell, 2002). There is a great need for systematic empirical work explicating these processes, however. Köster, Kärtner, Cavalcante, de Carvalho, and Resende (in press) address this goal in a cross-cultural study comparing three distinct social ecologies. They provide evidence that in different cultural contexts, mothers promote their toddlers' helping through distinct socialization processes (insistence on compliance vs. support of

autonomy), which correspond to different cultural conceptions of prosociality (as an interpersonal responsibility vs. a personal choice, respectively).

It is also important to acknowledge that what people want is not always good for them. If a desired goal (e.g., obtaining a particular toy) would put the other at risk of negative consequences (e.g., injury), then a potential helper is confronted with two conflicting motivations: concern for the other's specified goal (which translates to helping the other obtain the object) versus a broader concern for the other's welfare (which translates to not helping the other obtain the object). Martin, Lin, and Olson (2016) examined for the first time how children resolve this dilemma. They show that 5-year-olds can behave paternalistically and override the other's desire (to obtain a particular snack) when fulfilling it would have negative consequences for the other. However, children's decision to do so was not automatic and depended on the available alternative (how attractive the alternative snack was). Thus, children at this age are able to balance multiple and conflicting considerations when deciding when and how to help another (Martin et al., 2016).

Concern About Doing the Right Thing vis-à-vis Others

Additional motivations for prosocial behavior implicate social norms. Social norms refer to a set of principles regarding how to behave, which are accepted and expected by members of a social group (e.g., Tomasello, 2014). They reflect the group's values and ways of thinking. Echoing the central role of interdependence and cooperation across human evolutionary history (described earlier), social norms often reflect a consideration for the welfare of others. For examples, moral norms prohibit harming others and encourage the fair and kind treatment of others. Here, we highlight two motivational mechanisms pertaining to social norms that can engender prosocial behavior (see also Eisenberg et al., 2016).

One important motivation is the person's internal desire to act in accordance with social norms and values prescribing behaviors that benefit others (e.g., kindness, fairness). When such prosocial norms have been internalized, the individual wants to act in accordance with them out of belief in their importance and verity; thus, the corresponding behaviors will be enacted out of internal conviction, and in the absence of supervision (therefore referred to as internalization of norms or values;

e.g., Grusec et al., 2002). Prosocial values are often learned and adopted through interactions with socialization agents (see below) and with cultural artifacts and institutions, but they are also influenced by internal sources, such as the individual's genes or temperament (Schwartz, 2014; Uzevovsky, Döring, & Knafo-Noam, 2015).

Importantly, acting in accordance with one's prosocial values often requires the individual to set aside competing behavioral tendencies, such as the desire to maximize one's own self-interest, or a natural preference toward certain targets (e.g., in-group members). Thus, this motivational mechanism can support costly behavior, requiring self-regulation. Notably, individuals are often able to reflect on their prosocial and moral values, and to explain why those values are correct and should take precedence over other considerations (e.g., self-oriented concerns)—a capability known as moral reasoning; such awareness can strengthen the tendency to act in accordance with one's prosocial norms and values, even at a cost to the self (e.g., Eisenberg et al., 2006; Malti et al., 2016, discussed below).

This motivational mechanism therefore includes the following components: (a) the person believes in a social norm or value that emphasizes others' welfare (e.g., kindness; fairness). The person identifies with this principle, sees it as important, and therefore wants to act in accordance with it. This conviction can vary in strength, however; it is stronger (and therefore more likely to be an effective motivator) when the person sees the value as central to the self (Eisenberg et al., 2006); (b) the person recognizes in a specific situation that a particular course of action would be consistent with this internalized norm, whereas alternative courses of action would contradict it; (c) if alternative courses of action are more consistent with self-interests or natural preferences, the person needs to exercise self-regulation in order to override these competing tendencies and act in accordance with the prosocial norm. Doing so provides the individual with a sense of having done the right thing—a sense of integrity and consistency with one's own values (as well as pride; Chudek & Henrich, 2011).

As noted earlier, applying prosocial norms in the face of competing motivations can be challenging and can be aided by more advanced moral reasoning and other social-cognitive skills (Eisenberg et al., 2006). The study by Yu, Zhu, and Leslie (2016) sheds new light on the latter, and specifically the role of theory of mind (ToM). In a cross-sectional sample of Chinese children, the authors created a dictator

game that pitted against each other three different motivations: the norm of fairness (reflected by preference for equal division), self-interest, and in-group bias. In the more challenging, out-group situation, a prosocial response required children to override both self-interest and the tendency to treat the out-group less well. In this condition, better ToM skills played an important role, increasing the likelihood of a prosocial choice and fully accounting for the age effect observed (Yu et al., 2016).

The motivational mechanism of acting in accordance with prosocial norms is influenced in important ways by socialization. First, it is through socialization processes that children become familiarized with the norms of their sociocultural group. Different cultures have different expectations regarding when and how to act prosocially, and how to balance prosociality with competing considerations. Accordingly, House et al. (2013) have shown that beginning in middle childhood, rates of costly sharing (which pits a prosocial norm against self-interest) begin to diverge markedly between cultures, gradually approaching the levels shown by adults within the same cultures. Second, socialization processes, beginning very early in life, can also influence children's inclination to accept and internalize societal norms and values. For example, responsive and attentive treatment by caregivers can create a positive stance in children, making them more open and receptive to accept caregivers' messages about values and standards later on (e.g., Kochanska, Kim, & Boldt, 2015). Internalization of values is also influenced by how parents respond to children's misbehavior (breaking of norms), that is, their ability to set limits effectively and without excessive coercion (Grusec & Davidov, 2010). Importantly, both the values and the socialization practices that help foster them can vary as a function of the sociocultural context. Knight, Carlo, Mahrer, and Davis (2016) focus on the socialization of prosociality among Mexican-American youth. They show that familism values, ethnic socialization practices, and ethnic identity play an important role in predicting the adolescents' subsequent tendency to engage in several types of prosocial behavior. In contrast, material success and personal achievement values showed fewer and different links to prosociality.

A second, related motivational mechanism pertaining to social norms is guilt. Guilt is a self-conscious or self-evaluative emotion evoked when the individual has violated one's own standards of behavior (Chudek & Henrich, 2011; Kochanska,

Gross, Lin, & Nichols, 2002; Tomasello, 2014). It involves the following components: (a) awareness of one's transgression, that is, that one has behaved inconsistently with personal standards (internalized norms). This often involves having caused harm to another person, even if inadvertently; (b) this realization leads to feelings of remorse and discomfort, accompanied by aversive arousal (Kochanska et al., 2002), which is underlain by increased autonomic activity (Ioannou et al., 2013); (c) this state motivates reparative behavior. Reparation involves not only ameliorating the specific harm caused to the other but also amending the possible damage to the relationship, to one's reputation, or to one's sense of self/integrity (Chudek & Henrich, 2011; Tomasello, 2014). (Interestingly, guilt can also occur in the absence of any personal wrongdoing—when others, with whom one is linked, have transgressed [Doosje, Branscombe, Spears, & Manstead, 1998]; this form of "guilt by association" can also motivate prosocial action, but work is still needed regarding its development.) Although both guilt and shame (a global feeling about the self as being inadequate for not meeting standards) can deter individuals from acting antisocially (Chudek & Henrich, 2011; Kochanska et al., 2002), guilt with its reparative focus is much more relevant than shame as a motivator of prosocial action.

There is evidence that even before the age of 2 years, toddlers already show tension when they believe they have committed a transgression (Kochanska et al., 2002). But how early in development does guilt motivate prosocial action? Vaish, Carpenter, and Tomasello (2016) address this question in a sample of 2- and 3-year-olds. Importantly, their design enabled the disentanglement of help that is motivated by sympathy (i.e., because the other feels bad) from help motivated by guilt (because one has caused the other to feel bad). By manipulating whether the child (vs. an experimenter) caused a mishap, and whether the mishap caused harm to another (vs. was inconsequential), Vaish et al. were able to demonstrate clear prosocial (reparative) behavior motivated by guilt by age 3 as well as to shed light on relevant cognitive and affective processes.

With increased cognitive development, older children can also anticipate feeling guilty if they were to transgress or harm others, and this anticipated remorse can further motivate fair and kind treatment of others. The role of such self-reflective, anticipatory guilt was examined by Malti et al. (2016), together with two other motivational mechanisms discussed earlier: sympathy for others'

distress and moral reasoning reflecting internalized prosocial norms. The authors examined how these three distinct motivations predict three prosocial behaviors (helping, cooperating, and sharing) in a longitudinal study spanning ages 6–12. The findings indicate multiple motivational pathways, with sympathy playing a role in all three prosocial behaviors and anticipatory guilt predicting more generous sharing. Moreover, sympathy interacted with guilt and with moral reasoning in predicting cooperation, shedding light on the interplay between these three motivational mechanisms.

Conclusions

As we have stressed, a given prosocial act can be performed for a variety of different reasons, with each lending a different meaning to the behavior. Thus, addressing the motivations behind prosocial acts is crucial for our understanding of what various prosocial behaviors mean and how they develop. A research focus on motivations for prosociality can be challenging, as these motives are often hard to isolate. Yet such focus is greatly needed and worth pursuing. The present special section takes a positive step in this direction.

In this Introduction, we have presented key ideas as a framework for thinking about motivations for prosocial behavior and their development. A complete understanding of prosocial motivations requires consideration of why they have evolved. Our analysis stresses the crucial role of interdependence between humans in the evolution of prosociality; acting in ways that benefit others carries clear fitness advantages in the context of interdependence. The importance of interdependence for human life, and children's active involvement in it, can also account for the early ontogeny of these tendencies (given appropriate rearing experiences). Considering the different ways in which our ancestors relied on one another also helps understand the types of proximate, psychological mechanisms that can propel individuals to act prosocially in different situations. We have focused on four such motivational mechanisms: empathy for others in distress, concern about others' goals, and two motives involving social norms—a desire to act in accordance with internalized prosocial norms and guilt following the violation of such norms. Importantly, by outlining the critical components of each of these mechanisms and discussing issues pertaining to their development, our goal is to stimulate

and aid further research aimed at examining these motivations.

One important direction for future research involves clarifying the common and motivation-specific factors contributing to individual differences. Notably, each of the motivational mechanisms that we have outlined has some unique features; yet some components are also shared by two or more mechanisms (e.g., increased arousal and discomfort in both empathy for a distressed other and guilt). This can help explain both the specificity and (partial) convergence of different forms of prosociality observed in the literature. Further light could be shed by examining the genetic and environmental (e.g., parenting) contributions to different motivational factors, such as concern for others' distress, goals, and for doing the right thing, as well as the processes (e.g., child attributes) mediating these influences. Moreover, uncovering the patterns of interplay between these genetic and environmental factors as they pertain to different prosocial motivations is also of great interest (e.g., gene–environment interactions and correlations; DiLalla, Bersted, & John, 2015; Knafo, Israel, & Ebstein, 2011).

Notably, beyond thinking about genetics and the environment as separate, yet interacting, factors in development, new promise lies in epigenetics research. Epigenetics refers to biological changes in the DNA (e.g., DNA methylation) that can affect gene expression without changes in the DNA sequence (Avinun & Knafo-Noam, 2015; Lester, Conradt, & Marsit, 2016). We are not aware of previous research linking epigenetics to prosocial development. Nevertheless, key socialization and environmental variables such as parenting and child abuse are associated with epigenetic changes (Naumova et al., 2016; Smearman et al., 2016), and these changes, in turn, have been linked to child variables relevant to prosocial behavior (e.g., temperament, behavior problems; Montirosso et al., 2016; Parade et al., 2016). Thus, studying the epigenetic processes involved in the development of prosocial motivations is a promising avenue for future research.

In addition to uncovering the antecedents and workings of each motivational mechanism in isolation, it is also important to remember that two or more motivations can co-occur within the same situation and interact with each other. The contributions to this special section have begun to clarify some of these processes. Further work approaching prosociality from a motivational point of view will help generate further insights into the development of this complex, multifaceted, captivating, and highly valued behavior.

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