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# Editorial overview: Early development of prosocial behavior: Revealing the foundation of human prosociality

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Some of the most persistent questions about prosocial behavior have addressed whether people act on behalf of others out of a genuine concern for their welfare, or whether people are rather driven by hidden selfish strategizing and external societal demands to do something they would not do otherwise [1]. Disentangling the various motivators of prosocial behavior and their interplay of these factors is tricky. It is particularly challenging when studying adults who have gone through a long period of learning and internalization of social expectations — and who further possess sophisticated cognitive skills allowing them to reason how others think about them to adjust their behavior accordingly. The study of prosocial behavior over development can therefore play a unique role in untangling foundational aspects of human psychology. Developmental research can identify the earliest states of prosocial behavior in ontogeny, and then trace the changes that occur over developmental time. By doing so, it can probe how external factors and underlying mechanisms shape prosocial behavior from childhood through adolescence into adulthood.

Studying early development is therefore critical to understand the foundations of prosocial behavior. But we would want to go even one step further and suggest that studying these foundations is critical to understand human social behaviors more generally. Although prosocial behaviors are defined as those aimed at benefiting others, they serve the broader function of enabling the individual actors themselves to flourish as inherently social beings. Humans are social not only in terms of seeking the company of others — indeed, many animals are gregarious — but because we cultivate enduring, long-term bonds with social partners [2,3]. This requires children to balance a concern for others with care for the self: safeguarding oneself against free-riders, and up-regulating or down-regulating prosocial behaviors depending on the social relationship and the context in which these relationships are formed and maintained. Children must draw on a whole range of psychological abilities when deciding how, whom, and when to help.

This special issue highlights recent insights concerning the building blocks of young children's prosocial behavior. Together the individual papers are testimony to the major advances in the study of prosociality that dig deeper into the underlying cognitive, motivational, emotional and (neuro-)physiological processes supporting these behaviors. The challenge of studying psychological mechanisms in young children is met by increasingly sophisticated experimental paradigms (see [Figure 1](#)): assessing (neuro-)physiological variables, manipulating situational constraints to investigate emotions

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and motivation [4], incorporating the wider context of culture and norms, varying the social partner, manipulating the kind of previous experiences, and studying the psychological origins of concern for others in infancy as well as in comparison to other primates [5]. This multifaceted approach has moved research beyond studying the occurrence and frequency of prosocial behavior alone toward the underlying mechanisms and development of these behaviors. These recent insights have generated novel questions and initiated theoretical debates which include the missing relations between different forms of prosocial behavior [6], the gap between children's knowledge of prosocial norms and their actual behavior [7], and how children's early forms of prosociality relate to their later-emerging prosocial as well as antisocial behaviors [8,9].

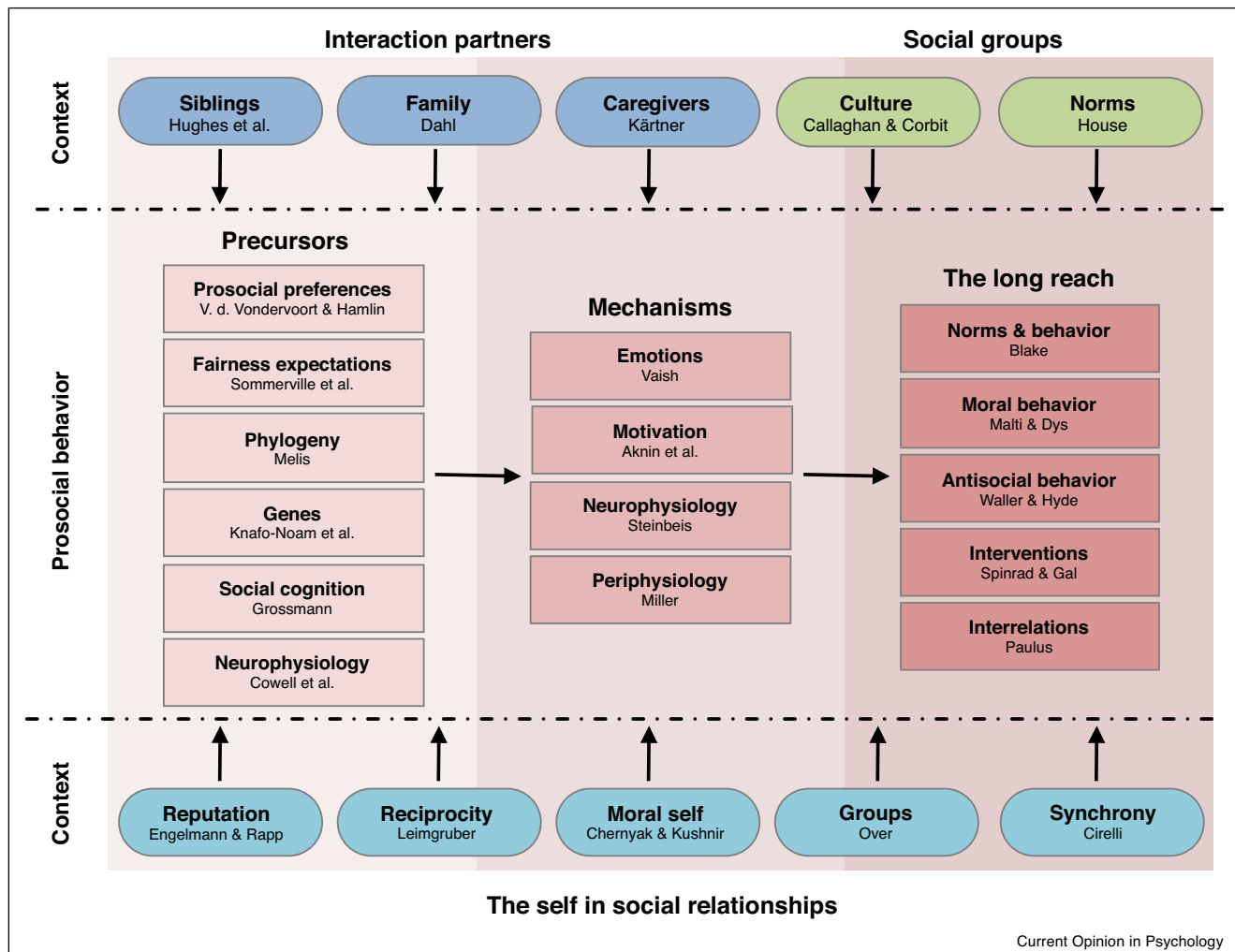
### **Precursors and mechanisms**

The study of children's developing prosocial behavior starts long before children actually begin to act prosocially themselves. Babies in the first year of life already are uniquely tuned into the social world around them and attend to others' needs, emotions, and mental states [10]. Infants as young as nine months express empathy in response to seeing others in need [11]. Between the ages of 9 and 15 months, infants anticipate others' needs and expect even abstract agents to help one another [12–15]. Once children develop the motor abilities to engage with others, 6-month-old and 9-month-old infants demonstrate that they also prefer those who have helped others and selectively avoid agents with harmful intentions [16]. This sensitivity toward others' needs extends into the second year of life where children's prosocial attention has transformed into an intrinsic motivation to see others helped [17–20]. This intrinsic motivation for helping is accompanied by heightened positive affect following helping. Children are happier (i.e., express more smiles) when others' needs are fulfilled, even when this involves a material cost to themselves [21]. Similarly, children show increased upper-body posture when others are helped [22]. Together this suggests an internal mechanism whereby children are intrinsically motivated and reinforced for helping [23].

### **Social groups & interaction partners**

These internal mechanisms do not mature during the first two years of life in isolation: they are crucially shaped by children's interactions with the social world (see Figure 1, top row). What is apparent from this emerging line of work on the role of social partners is that children are the agents of their socialization from the beginning. They are not simply passive recipients of information, but rather take an active role in seeking out when and how to be prosocial. Children are eager apprentices who want to participate in the activities of grown-ups, where caregivers [24] as well as other adults [25] scaffold children in everyday activities that let them hone their prosocial skills. The type of scaffolding varies with culture, and also changes over development, with parents using more explicit and direct means early on, but then offering less and less direct guidance as children become more competent helpers [24–26]. The view of children as their own agents of socialization is all the more apparent when we look at young children's interactions with their peers and siblings [27,28]. This is a rich training-ground for prosociality, as children have to strike a balance between asserting their own interests and fostering rich relationships with children similar in age. Moreover, in interactions with younger children, children become caregivers themselves. In fact, across historical time and across the globe, children are 'helpers at the nest' from early on [25,29], with adults depending on the contributions from their children for child rearing,

Figure 1



household, and economic subsistence. This functional role for children's helping may explain why prosocial skills come online early in ontogeny [30].

### The self in social relationships

Beyond interactions within family and familiar others, children also make choices with whom to interact, including unfamiliar adults and peers (Figure 1, bottom row). Preferences for ingroup over outgroup members can be traced into early childhood [31] and positive social experiences as subtle as moving in synchrony with a partner children's prosocial behaviors [32]. Over development, children become increasingly more sophisticated in their thinking about their own role in these social relationships: they become increasingly able to guide their own prosocial acts depending on the expectations of others, as well as in their ability to shape the identity they want to present to other social partners and group members. With

emerging cognitive abilities such as thinking about future consequences of their behaviors [33], accounting for how others think about them [34], and thinking about their own ability to make choices [35], children are better able to calibrate their prosocial responding to create opportunities for reciprocal interactions. This shapes their reputation and own moral identity. Middle childhood also marks an important change in the quality of prosocial behavior because children become increasingly attentive to social norms, with cross-cultural comparisons revealing divergent developmental trajectories that reflect differences in adult norms about fair resource division [36,37]. These newly emerging cognitive abilities shift how children view their own actions in terms of social partnerships and social norms. Crucially, this enables children to not only view themselves within a dyadic social relationship with one partner but as a member of a group with obligations toward multiple partners simultaneously.

## The long reach of early development

While the focus of this issue is on the early development of prosociality, it highlights a series of crucial transformations that shape ontogeny as a whole. The first major transition occurs in toddlerhood. This is when infants' 'prosocial attention' toward others' needs is complemented by a requisite prosocial motivation to actually act to help those in need. For example, individual differences in periphsiological and neurophysiological responses to observations of helping and sharing scenarios relate systematically to variability in both toddlerhood and childhood prosocial behavior [38–41]. Distinct neural signatures at 14 months of age relate to children's instrumental helping at 18 months and comforting at 24 months [42]. In addition, family and societal factors such as parenting and daycare attendance systematically relate to how frequently toddlers show, for example, comforting behavior [43–45]. The second major transition occurs during toddlerhood and preschool age, when children show novel and more flexible forms of prosocial behavior. This includes paternalism, that is, giving others what they need rather than what they want [46,47]; punishment, that is, shunning those with antisocial intentions [48]; reciprocating received help [33]; and finally management of one's prosocial reputation [34]. This second transition gradually shapes children's helping, comforting, and sharing into moral behavior. That is, children are no longer just motivated to help others, rather help others because it is the right thing to do [8,49]. Studying these transitions and understanding the underlying mechanisms is crucial to predict callous behavior [9] and to target interventions fostering individual prosociality [50]. While there are distinct universals across cultures that describe milestones in children's prosocial development, recent research emphasizes the significance of individual differences and their long reaching influence from genes and prosocial attention during infancy into the preschool years.

In sum, the study of early prosocial development has brought to light a series of enlightening empirical results documenting an impressive array of prosocial tendencies in young children. As a research field, we are now in a better position to understand the crucial developmental transitions children's prosociality undergoes in the first five years of life. Prosociality cannot be reduced to a set of predispositions that we, as humans, are born with but rather constitutes one of the most taxing psychological challenges that we, as individuals, grow into. A more complete awareness of these deep ontogenetic roots will crucially broaden our understanding of how to be prosocial and ultimately how to be human.

## Conflict of interest statement

Nothing declared.

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