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The development of prosocial behavior—from sympathy to strategy

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Abstract

Children act prosocially already in their first years of life. Research has shown that this early prosociality is mostly motivated by sympathy for others, but that, over the course of development, children's prosocial behaviors become more varied, more selective, and more motivationally and cognitively complex. Here, we review recent evidence showing that starting at around age 5, children become gradually capable of strategically using prosocial acts as instrumental means to achieve ulterior goals such as to improve their reputation, to be chosen as social partners, to elicit reciprocity, and to navigate interpersonal obligations. Children's sympathy based prosociality is thus being extended and reshaped into a behavioral repertoire that enables individuals to pursue and balance altruistic, mutualistic, and selfish motives.

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Introduction

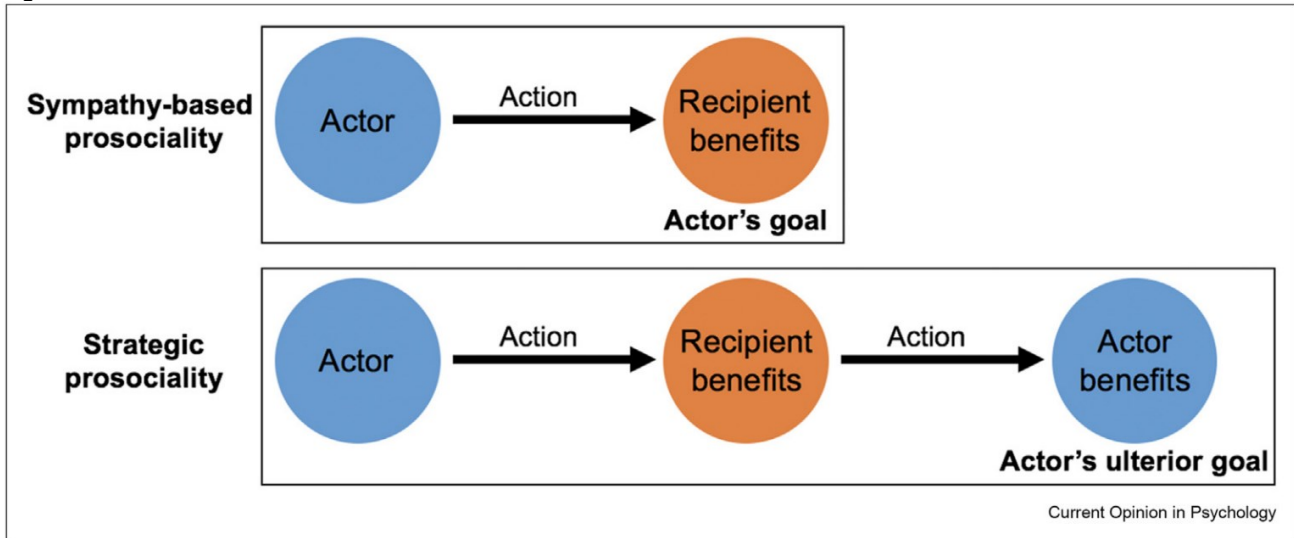
Although the human species is characterized as displaying prosociality [1] at a level not seen elsewhere in the animal kingdom, individual cases of purported human prosocial behavior are often viewed with suspicion. This makes sense given that human adults have the ability to engage in prosociality strategically, fulfilling another person's immediate need deliberately as an instrumental means to achieve ulterior self-serving ends, such as boosting one's reputation, eliciting a favor in return, or being chosen as a social partner. This contrasts with sympathy-based or genuine prosociality in which facilitating the beneficiary's goal or welfare is an end in itself¹ (Figure 1). In research with adults, the burden of proof is on showing that a behavior is not motivated by self-serving goals, however intricate they might be, in order for sympathy or a genuine concern for others' well-being to be accepted as an explanation [2-4]. Such concerns stem from the realization that adults are able to use clever strategies to deceive others or themselves. In the case of young children, however, such skepticism is less of an issue for one main reason: strategic prosociality can be taxing.

Consider the potential cognitive challenges involved in prosocial actions aimed at being picked as a social partner (e.g. sharing some cake today to be invited to a party tomorrow). Doing so might require some level of future planning, capacities for delaying gratification - the willingness to relinquish resources that could be consumed now in favor of better rewards later- and an understanding of what others will think of oneself to predict how these perceptions of the self will influence their actions, and so on. It turns out that, compared to sympathy-based prosocial behavior, strategic prosociality might actually be quite hard.

Here, we take a developmental approach to assess how such strategic forms of prosociality develop over ontogeny. We argue that rather than being a default that has to be overcome, strategic prosociality has to be acquired over the course of development. We briefly review the newest evidence reinforcing the view that children act with the intention to benefit others already in their first years of life, and as decades of research have shown, these early prosocial behaviors are mostly motivated by sympathy for others [5-8]. We then move on to a more detailed review of evidence showing that over the course of ontogeny, children's prosociality develops from being mostly sympathy-based to becoming more behaviorally varied, more selective, and more motivationally and cognitively complex. Specifically, recent findings suggest that from around age 5, children

¹ We focus here on the proximate psychological mechanisms underlying prosocial behavior, not their ultimate function in terms of fitness consequences.

Figure 1



Sympathy-based and strategic prosociality.

become gradually capable of engaging in prosocial behaviors for strategic reasons.

In sympathy-based prosociality, the actor's main objective is to facilitate the recipient's goal or welfare. In strategic prosociality, the actor benefits the recipient instrumentally in pursuit of an ulterior self-serving goal.

Young children display sympathy-based prosocial behavior

Children reliably start to engage in prosocial behaviors in their second year of life. From around 14 to 18 months, children help others reach practical goals, for example, by fetching out-of-reach objects or by removing barriers [9,10]. Around age two, children also start assisting others with emotion-related problems by comforting others in distress [11,12]. Around the same age, children first start sharing toys and food with others [13]. These early prosocial behaviors are mainly driven by concern or sympathy: children notice others' negative states such as their unmet needs or negative emotional experiences and are intrinsically motivated to alleviate these negative states [14,15]. By contrast, strategic benefits such as material or reputational incentives do not boost and sometimes even undermine young children's prosociality (e.g. 3-year-olds are less likely to share resources with a partner if they had previously received rewards for sharing, suggesting that extrinsic rewards can undermine children's intrinsic prosocial motivation) [16,17]. It is specifically children's socio-emotional abilities to recognize others' goals and signs of distress that enable children to intervene prosocially across a wide range of contexts [5-8]. Building on these socio-emotional abilities, early helping behaviors are further shaped by parental scaffolding and observational learning [18-20**].

This work [9-20] shows that the basic psychological processes involved in prosocially responding to others' needs emerge in toddlerhood. However, as argued by Warneken [8], as these basic abilities to benefit others expand over development and children start interacting with a broader range of people than their immediate caregivers, children's prosocial tendencies are also complemented by mechanisms that make their prosociality more selective, thus enabling children to avoid free riders and accord with social expectations. Children show some selectivity in their helping from early on - for example, 14-month-olds preferentially help adults with whom they had previously engaged in bouts of synchronous bouncing [21] - but become considerably more discriminating with age. For example, toddlers share as many toys with free riders as with prosocial individuals, whereas preschoolers are more prosocial toward individuals who had intentionally benefited them previously [22,23] or who had been nice to others [24]. These interactions might strengthen the emotional bonds that children form with cooperative others, resulting in elevated levels of sympathy and hence prosociality.

Moreover, while children show little systematic sharing in standardized tasks (e.g. dictator games) until age 5 [25,26], even 3-year-olds share equally with partners with whom they have produced resources collaboratively [27], suggesting a first appreciation of the obligations that emanate from shared cooperative activity [28]. Further evidence for a sense of obligation toward collaborative partners comes from a recent study using the famous marshmallow test, in which children can either consume a piece of candy right away or wait to get an additional treat. Both German and Kenyan children were more likely to delay gratification in a collaborative context in which they and another child worked and benefitted together than when they performed the same task alone [29], see also [30,31]. The fact that preschoolers also help and share more with friends

[32**] and in-group members [25] additionally attests to the idea that children at this age feel they owe their prosociality more to some individuals than to others [33]. Furthermore, children become increasingly receptive to normative information in their prosocial decisions [34] and calibrate their sharing of resources in accordance with local cultural standards [35,36].

This increasing selectivity suggests that children's prosociality, beyond the goal of fulfilling others' current needs, now also incorporates other social considerations, such as others' deservingness, the deontic implications of the child's relationship with the recipient, or societal expectations.

Children learn to use prosocial behavior strategically

Children's increasing sophistication in deciding when to act prosocially and with whom also enables them to use prosocial acts for self-serving purposes. Current evidence suggests that this ability first emerges around age 5 (and gains in complexity in the following years) [37-42] as children not only become more sophisticated mind readers [43] but also first begin to independently choose their social partners, strive to be included in collaborative activities with peers, and form voluntary long-term relationships based on reciprocity.

While the motives underlying these behaviors are partly self-serving, capacities for strategic prosociality are likely to have important social functions as they open up new possibilities for mutually beneficial cooperation and allow children to initiate and regulate relationships. We thus conjecture that capacities for strategic prosociality provide children with a tool to navigate these new social demands and to pursue their own self-interest while also fostering collaborative partnerships.

Influencing how others view the self

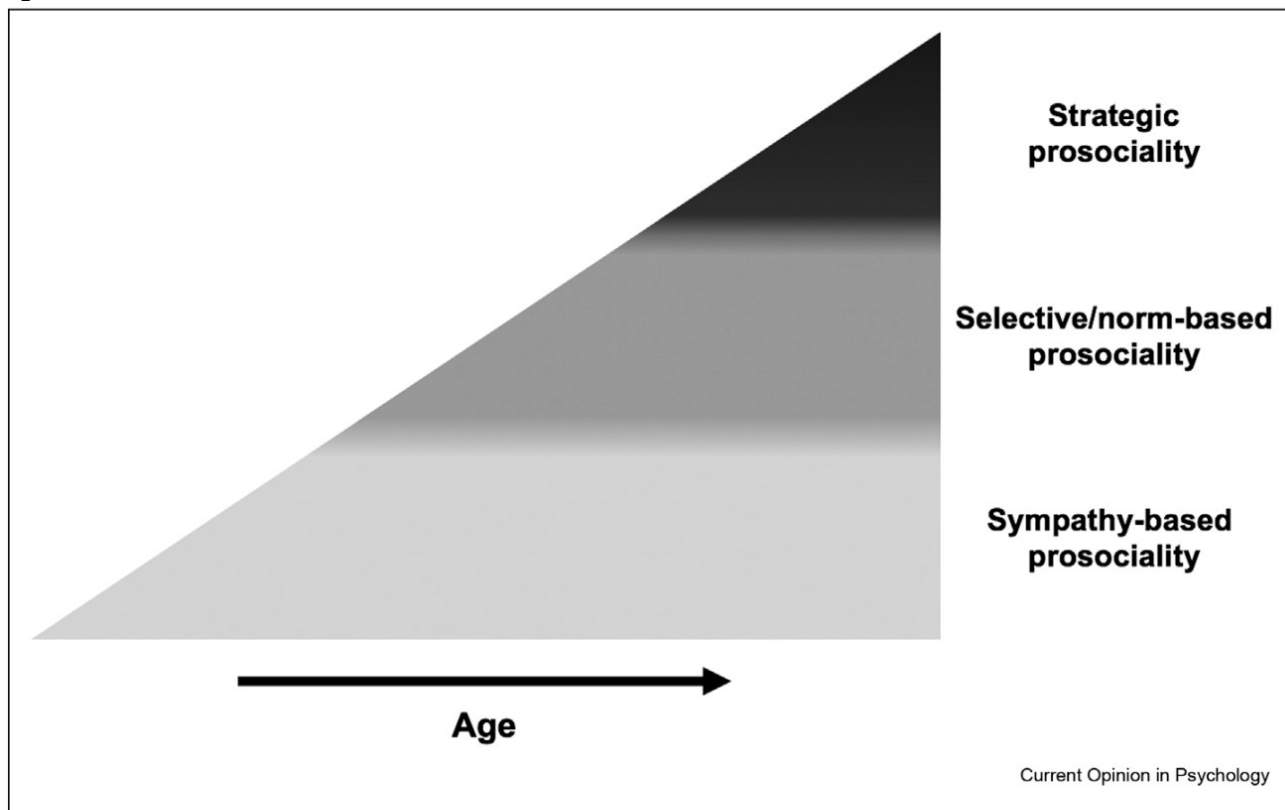
Humans act prosocially to be evaluated favorably by others, and being seen as generous is associated with several social and material benefits [44-46]. Research has shown that children are more generous when others are watching already by age 5 [37,38,47**]. One explanation is that children might display automatic, unconscious responses to being watched [48] or follow simple rules of thumb such as 'be prosocial when others are present'. However, a recent study by Rapp et al. [49**] shows that 5-year-olds are more sophisticated than that. Children were tested in groups of four and could each share a portion of a resource with other absent children. Participants shared more in the 'good reputation condition' where the most generous child of the group would later be displayed publicly for everyone to see as compared with a baseline in which decisions were completely anonymous. However, the crux of the study was a 'bad reputation condition' in which the least generous child would later be revealed to the group. Here, 5-year-olds shared more than in the anonymous baseline condition but less than when only the most generous child would get recognition. This behavior makes strategic sense because children only had to share more than the most selfish group member to avoid being outed as stingy, whereas in the good reputation condition, they had to share more than everyone else to be positively recognized (4-year-olds shared more in the reputation conditions compared with the baseline but did not distinguish between reputational incentives). This finding is important as it demonstrates that 5-year-olds skillfully and strategically use their prosociality to achieve specific reputational goals afforded by a given incentive structure. Children's reputational strategies become further refined, and from age 8 onward, children not only are able to explicitly reason about self-presentational strategies [40] but also become sensitive to self-presentation motives when evaluating others' prosocial acts [41,43,50**].

Children also strategically navigate when to live up to interpersonal obligations. Siposova et al. [51**] presented 6-year-olds with a dilemma in which children could either collect stickers for themselves or forfeit their sticker collecting to help an adult with crutches sit down on a chair. When participants and the experimenter had private knowledge about the experimenter's plight (i.e. they each knew separately the experimenter needed help), many children (72%) refrained from helping and stacked up stickers instead. In contrast, when children and the experimenter had common knowledge (i.e. they both knew that they both knew the experimenter needed help), about 50% of children incurred the cost of helping and they did so considerably quicker than when they had private knowledge. Children seemed to have realized, strategically, that with private knowledge they could plausibly feign ignorance about the experimenter's need, and this enticed them to pursue their self-interest. By contrast, common knowledge removed plausible deniability and required children to help to retain the image of a prosocial partner. These studies show that 5 to 6-year-old children can specifically target their prosociality at manipulating others' perceptions of themselves and use it as a tool to manage their social relationships.

Eliciting favors from others

Another reason for engaging in strategic prosociality is to elicit reciprocal responses from others. This tendency first emerges around age 4 to 5 and becomes more sophisticated in the following years. For instance, in a study by Warneken et al. [52], 3- to 7-year-olds interacted with a 'game owner' who, in the experimental condition, could choose the child or a competitor as a play partner for an enticing game (in a control condition the game owner played alone). However, beforehand, the child and the competitor each could share either a

Figure 2



Overview of children's prosocial development.

more attractive or a less attractive sticker with the game owner. While 3-year-olds shared indiscriminately, children aged 5 years and older were more likely to share the attractive sticker in the experimental condition compared with the control. Similarly, 8-year-olds engage in 'competitive altruism', that is, they try to outcompete each other in their sharing of resources when being observed by third parties who can later include them in a fun activity [53]. These studies show that children intentionally use their resource sharing to reap benefits in the future in both situations of direct and indirect reciprocity.

Extending these findings to concrete investment decisions, Rosati et al. [54**] devised a child-friendly version of the Trust Game from behavioral economics. Children could decide between keeping a token to themselves or investing it in a partner who, as a result, received four tokens they could freely divide between themselves and the child. By investing, children could thus obtain a payoff larger than their initial endowment if the partner proved trustworthy - but they also ran the risk of being exploited. Both 4- and 6-year-olds invested their token more often than in a control condition in which the partner was unable to reciprocate. These differences between conditions thus cannot be explained by children's generosity toward their partner and instead reflect a strategic prosocial choice in the expectation that the partner would respond fairly. Importantly, even though children's decisions in this task were strategic, they resulted in higher payoffs for both partners - a finding that underlines how strategic prosociality can fuel mutually beneficial outcomes. These studies demonstrate that children are selectively prosocial to be chosen as social partners, to elicit others' reciprocation, and to initiate jointly advantageous interactions (see also [39,42,55]).

Conclusions and outlook

By around age 5e7, children draw from a rich set of prosocial actions to achieve a broad range of objectives including helping others reach their goals, to comfort others in distress, but also to attain strategic objectives, such as to improve their reputation, to encourage others to act prosocially in return, or to be included in future cooperative enterprises. It is important to note, however, that these motivations are not mutually exclusive. For instance, children might help someone out of a genuine concern for their well-being while also wanting some recognition for their prosocial acts. Indeed, in all the reviewed studies on strategic prosociality, sizable proportions of children acted prosocially even in control conditions in which no strategic benefits could be obtained, suggesting that multiple motives are at play simultaneously (Figure 2).

Moreover, although strategic prosociality is partly self-serving, we do not think it needs to be cynical or hypocritical. Instead, it is likely an important social competence that enables children to initiate mutually beneficial exchanges, to be included in collaborative projects, and to successfully navigate social relationships more generally. Future research could examine this issue more directly: whereas, in children and adolescents, prosocial behavior has been linked to academic achievement [56], peer acceptance [57], friendship

quality [58], and self-esteem [59], the ways in which individual differences in strategic prosociality in particular might be related to children's life outcomes has not yet been explored. Furthermore, to identify which specific social-cognitive skills (e.g. future planning, delay of gratification, understanding others' mental states) contribute to the development of strategic prosociality remains an important task for future investigations. Gaining traction of these issues will further our understanding of how, over the course of ontogeny, children's sympathy-based prosociality is being extended and reshaped into a behavioral repertoire that allows children to use - and exploit - prosocial behaviors for multiple ends.

Children's prosociality develops from being mostly sympathy-based to becoming more motivationally varied (e.g. including the motive to reciprocate favors or to live up to one's obligations). Starting around age 5, children become gradually capable of engaging in prosocial behaviors not just out of sympathy or to adhere to norms as an end in itself, but for strategic reasons, such as instances where individuals fulfill others' immediate needs deliberately as an instrumental means to achieve ulterior self-serving ends.

Conflict of interest statement

Nothing declared.

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