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Brief Report

The impact of choice on young children's prosocial motivation

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ABSTRACT

The current study explored how freedom of choice affects preschoolers' prosocial motivation. Children (3- and 5-year-olds) participated in either a choice condition (where they could decide for themselves whether to help or not) or a no-choice condition (where they were instructed to help). Prosocial motivation was subsequently assessed by measuring the amount children helped an absent peer in the face of an attractive alternative game. The 5-year-olds provided with choice helped more than the children not provided with choice, and this effect was stronger for girls than for boys. There was no difference between conditions for the 3-year-olds. These results highlight the importance of choice in young children's prosocial development.

Introduction

Children display remarkable prosocial tendencies from an early age. The ontogenetic development of such prosocial behavior has now been thoroughly established empirically (for an overview, see Martin & Olson, 2015). At approximately 14 months of age, infants engage in spontaneous instrumental helping (Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011; Warneken & Tomasello, 2006, 2007). By 18 months infants start comforting others in distress (Svetlova, Nichols, & Brownell, 2010; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992), and by 2 years toddlers begin sharing resources (Brownell, Svetlova, & Nichols, 2009).

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In the majority of these studies, children could choose freely whether to help or not. Whereas children regularly make such decisions in their daily lives, there are also instances when caregivers instruct them in how to act. For example, a parent might direct a child in how and when to help a peer in need. Children are helpful in multiple contexts, but little is yet known about the effects of such external constraints on children's prosocial behavior.

It has been argued that children's prosocial behavior is in part driven by an intrinsic motivation to help (Hastings, Zahn-Waxler, & McShane, 2006; Hepach, Vaish, & Tomasello, 2013; Warneken & Tomasello, 2008; Wynn, 2008). Experimental studies supporting this claim are grounded in an interesting feature of intrinsically motivated behavior, namely that it is undermined by extrinsic rewards (the so-called overjustification effect; Deci, 1971; Lepper, Greene, & Nisbett, 1973). Offering extrinsic rewards in exchange for helping reduced subsequent helping in school-aged children (Fabes, Fultz, Eisenberg, Mayplumlee, & Christopher, 1989) and in toddlers as young as 20 months (Warneken & Tomasello, 2008). This decrease in prosociality suggests that rewards supplant an intrinsic motivation for prosocial behavior. Helping is rewarding in itself, but this inherent satisfaction is lost once rewarded externally.

According to self-determination theory, intrinsic motivation is dependent on having the choice to act or not (Deci & Ryan, 1985; Ryan & Deci, 2000a, 2000b). An individual must perceive oneself as the initiator of one's actions and thus believe one's actions to be self-determined. By this account, choice represents the means by which self-determination is expressed. Several studies have found a positive effect of choice on intrinsic motivation in both adults and children (for a meta-analysis, see Patall, Cooper, & Robinson, 2008). For example, school-aged children's motivation for drawing was higher when they were able to choose a drawing game themselves compared with children who were instructed as to what to do by an adult (Swann & Pittman, 1977).

Assuming (a) that children show a general intrinsic inclination for prosocial behavior and (b) that the provision of choice is essential for intrinsic motivation to manifest, one might argue that choice is relevant to children's prosocial drive. Directed helping performed for extrinsic reasons (i.e., following a command) rather than for intrinsic reasons might lose its inherent satisfaction, possibly resulting in diminished prosocial motivation.

An interaction between freedom of choice and motivation can arise only when individuals are aware of their own agency. Therefore, it is crucial to determine to what extent young children understand freedom of choice. Research has shown that children develop a concept of choice early in life. Evidence from observational data indicates that children invoke their freedom of choice with regard to personal matters and that most mothers grant their children choices by 3 years of age (Nucci & Weber, 1995). Furthermore, interview studies suggest that by 4 years children endorse freedom of choice in situations where actions are unconstrained (i.e., not constrained by physical laws), when they observe others' actions (Chernyak, Kushnir, Sullivan, & Wang, 2013), and when they act themselves (Kushnir, Gopnik, Chernyak, Seiver, & Wellman, 2015).

Recent studies extend these findings to the moral domain. Results suggest that preschool-aged children distinguish freely chosen moral behavior from forced moral actions and treat them differently. This sensitivity is apparent when children reflect on their own behavior and when they judge the moral behavior of others. At around 4 years of age, children take choice into account when evaluating observed immoral behavior. Children protest more when they witness an actor transgressing a moral norm by choice compared with when they witness an actor breaking the moral norm under physical constraint (Josephs, Kushnir, Gräfenhain, & Rakoczy, 2016). In addition, 4-year-olds are also sensitive to choice when reflecting on their own moral behavior. In a study by Chernyak and Kushnir (2014), children could choose to act either morally or immorally (choice condition) or were instructed to act morally (no-choice condition). After this manipulation, children were interviewed about their freedom of choice. Only those children who had been provided with choice stressed that it was their decision, again demonstrating awareness of freedom to choose.

Although young children clearly give value to free choice in prosocial behavior, more research is needed to illuminate the effect of having choice on preschoolers' own behavior. Do young children act differently depending on whether their actions were freely chosen or carried out in response to adult instruction? The current study addressed the question of the role of free choice in children's prosocial motivation.

To our knowledge, no previous study has examined the direct effects of choice on young children's prosocial motivation. Previous research suggests that children's future prosocial behavior varies depending on whether the children were provided with choice in a previous prosocial task or not (Chernyak & Kushnir, 2013; McGrath & Power, 1990). In a recent study, 3- and 4-year-olds who had freely chosen a prosocial option in a first step shared more in a subsequent task compared with children who had been told to share during the first step (Chernyak & Kushnir, 2013). These results indicate that having choice increases children's future prosocial behavior. It remains unclear, however, whether young children display increased *immediate* prosocial motivation for freely chosen prosocial actions compared with instructed prosocial actions.

Given that young children are characterized by intrinsic motivation for prosocial behavior and that the provision of choice increases feelings of intrinsic motivation, we hypothesized that children provided with choice are more motivated to help others in need. We focused on 3- and 5-year-old children given that previous research has indicated interesting developmental changes regarding children's understanding of free choice during this period.

Method

Participants

We tested 48 3-year-old children (mean age = 3.73 years, range = 3.55–3.99) and 48 5-year-old children (mean age = 5.5 years, range = 5.28–5.83). For each age group, we tested 24 children in each of the two conditions (choice and no choice) with equal numbers of boys and girls across age group and condition. An additional 10 children were tested but excluded from the analysis due to apparatus failure (1 3-year-old), unwillingness to stay in the room after the experimenter left (1 5-year-old and 3 3-year-olds), unwillingness to participate (2 3-year-olds), misunderstanding (1 3-year-old and 1 5-year-old), and fire alarm (1 5-year-old). Children were tested in a quiet room in their day-care center. Informed consent was attained from all of the participants' parents. Children were recruited from urban day-care centers, came from mixed socioeconomic backgrounds, and were native German speakers.

Setup and materials

A pile of paper shreds was placed on a carpet (140 × 145 cm) at a distance of 2.5 m from a marble run (Quercetti Migoga marble run double spiral, 24 × 24 × 16 cm). Right next to the carpet, there was

Fig. 1. Study setup with participant sitting on the carpet and E2 playing with the marble run.

a cardboard box (12 × 15.5 × 23.5 cm) with a slot (1 × 3.8 cm) on top. A spade (8.7 × 6.6 cm with a 12-cm handle) was provided for cleaning up the paper shreds (see Fig. 1).

Design and procedure

We employed a between-subjects design in which children were randomly assigned to either the *choice* condition or the *no-choice* condition. Two female experimenters (E1 and E2) conducted the study. For the 5-year-old children, E1 and E2 remained the same across all children. For the 3-year-old children, E1 remained the same but the role of E2 was carried out by two different female experimenters (contributions were kept constant across conditions). The following procedure was applied for 3- and 5-year-olds.

Prior to entering the testing room, children played a puzzle game to warm up with E1 and E2. E1 then entered the room with a child and introduced her to the marble run. Each child was allowed to play with two marbles. E1 explained that E2 would come in later and play with the marble run. Children were explicitly allowed to join her. Next, E1 drew the child's attention to the pile of paper shreds on the floor. E1 acted as if she had just spotted the paper shreds and said that "poor Lisa [or Mark for boys] has to clean them up all by herself [or himself]" and that "she [or he] may need some help." Children in both conditions were informed that there was a "choice" option and a "no-choice" option for participants.[1] E1 explained that some children could decide for themselves whether or not to help Lisa [or Mark], whereas others are obliged to help. The order in which this information was given was counterbalanced across participants (half of the children first heard that some children can decide freely, and the other half were first told that some children cannot decide themselves). E1 then looked up the child's name on the list of participants and, depending on condition, announced one of two statements.

Children in the choice condition were told, "You belong to the group of kids who can decide for themselves. It is your decision whether you help Lisa [or Mark]. You can help her [or him] if you want to." In contrast, children in the no-choice condition were told, "You belong to the group of kids who cannot decide for themselves. It is not your decision whether you help Lisa [or Mark] or not. You have to help her [or him] because it says so on the list."

Independent of condition, E1 demonstrated how to clean up by shoveling a full spade of paper shreds into the slot on top of the box located next to the pile. After this demonstration, children in the no-choice condition were handed a second spade and cleaned with E1 for 45 s. Children in the choice condition were first asked the crucial question, "Do you want to help Lisa [or Mark] clean up?" Once E1 had received an affirmative response (see "Coding and reliability" section for a detailed description) from the child, they cleaned up together for 45 s just like in the no-choice condition. If children did not respond to E1's question, E1 said that she would again show them how to clean up. If children did not start helping, E1 repeated the previous question after cleaning up three additional spades of paper shreds. For children who voiced an unwillingness to help, E1 continued cleaning up and followed the procedure as follows.

In both conditions, the cleaning phase was interrupted by E2 opening the door to the testing room 45 s after the child first picked up the spade. Following a script, E2 announced that E1 was needed outside the testing room. E1 and E2 agreed that E2 would replace her and take the child back to her kindergarten group once they were done. While still sitting in front of the pile of paper shreds, E1 explained to the child that she needed to leave and that E2 would come in shortly. Then, E1 left the room. For the first 30 s, the child was alone in the room and was not distracted from the task. However, to exclude the possibility that the child would continue helping merely because there was not much else to do, and also to make helping increasingly more costly, we included the marble run as a distracter. Therefore, after 30 s, E2 entered the room and sat down in front of the marble run (see Fig. 1). E2 carried out a series of prompts. There were seven statements, which increased in degree of enticement, with one statement being given every 30 s (e.g., "Oh wow, this is a great marble run," "You want to play, too?") (see online supplementary material). E2 followed the protocol regardless of

[1] A meta-analysis exploring the impact of choice on intrinsic motivation showed that the effect of choice is strongest when participants are informed about the choice alternatives but are not allowed to choose themselves (Patall et al., 2008).

the child's behavior. In total, children were given 4:45 min to help clean. We introduced a second experimenter (E2) to clearly separate the two roles; E1 gave the instructions and assigned children to conditions, whereas E2 served as the distracter. In addition, because E2 was blind to condition, this ensured that E2's behavior would be identical in both conditions and not influenced by our hypothesis (for a similar approach, see Kanngiesser, Köymen, & Tomasello, 2016).

Coding and reliability

All testing was videotaped and later coded by the first author. For the main analyses, the number of spades children shoveled into the box was coded. A second individual (blind to condition and hypotheses) coded a random 20% of the sample (equal numbers of videos across condition and age group). Inter-rater reliability was excellent (Cohen's $\kappa = .89$).

We coded two categories of agreement: spontaneous and elicited. We defined spontaneous agreements as verbal expressions (e.g., "I want to [help]") expressed after E1 explained that children could help if they wanted to help but before E1's explicit question (see "Design and procedure" section). We understood elicited agreements to be verbal (e.g., "yes", "I want to [help]") and nonverbal agreements (nodding and picking up the spade) as a response to E1's explicit question.

Results

We first analyzed the number of children who agreed to help. All but 3 children agreed to help (3-year-olds: 23 of 24 agreed; 5-year-olds: 22 of 24 agreed). Among those who agreed to help ($N = 45$), 17 uttered a spontaneous verbal agreement, 18 gave an elicited verbal agreement, and 10 gave an elicited nonverbal agreement. Below, we report our analysis of the data limited to children who agreed to help.[2] We used the number of spades children put in the box as a measure of children's helping behavior.

To test the effect of age and condition on children's helping behavior, we conducted a generalized linear mixed model (GLMM; Baayen, 2008) with Poisson error structure and log link function. The model was fitted in R (version 3.2.0; R Core Team, 2015) using the function glmer of the R package lme4 (Bates, Maechler, Bolker, & Walker, 2014).

As a first step, we tested for gender differences by conducting a preliminary GLMM including the random effect of kindergarten (to control for participants belonging to different schools) and having only gender as a fixed effect. We compared the fit of this model with a reduced model comprising only the random effect using a likelihood ratio test (Dobson, 2002). Results revealed a significant main effect of gender ($\chi^2 = 6.42$, $df = 1$, $p = .011$). Therefore, we included gender as a fixed effect in the main model.

For the main analysis, we included the following fixed effects: gender, age (3-year-olds or 5-year-olds), condition (choice or no choice), the interaction of age and condition, and the interaction of gender and condition. We tested their effects on the number of spades participants cleaned up. We ruled out a significant three-way interaction of gender, age, and condition by conducting a preliminary GLMM with all fixed and random effects included as above and the three-way interaction ($b = 0.89$, $p > .05$).

Overall, the model's fixed effects had a clear impact on the number of spades children cleaned up (likelihood ratio test comparing full and null model: $\chi^2 = 26.75$, $df = 6$, $p = .00016$).

Results revealed a significant interaction between age group and condition ($b = -1.62$, $p = .002$) and a significant interaction between gender and condition ($b = 0.91$, $p = .003$). Post hoc tests (for more details, see supplementary material) on the 5-year-old children indicate a clear effect of condition for girls ($b = -1.76$, $p = .000$) and a marginal effect of condition for boys ($b = -0.81$, $p = .068$), showing that the provision of choice increased helping behavior (see Figs. 2 and 3). On average, 5-year-old girls cleaned up 12.30 spades of paper shreds when provided with choice, compared with 4.17 when not

[2] We also analyzed the full data set (including children who did not agree to help). Significance levels remained the same. For details concerning full data set analysis, see the supplementary material.

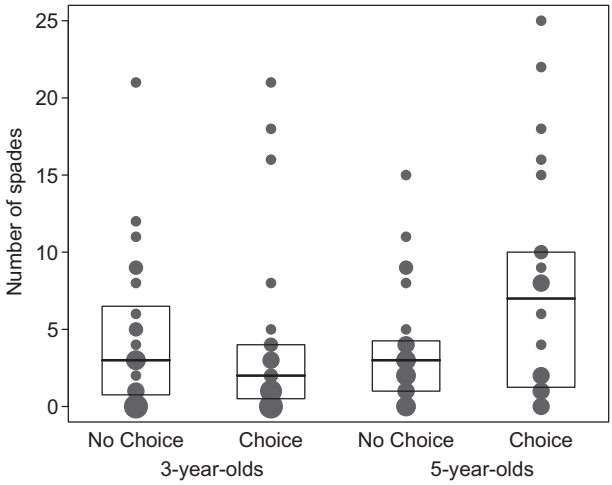

Fig. 2. Numbers of spades that 3- and 5-year-olds cleaned up, separated by condition. Data points are depicted by dots, with bigger dots representing more data points. Each box represents a quantile. Horizontal lines within quantiles represent medians.

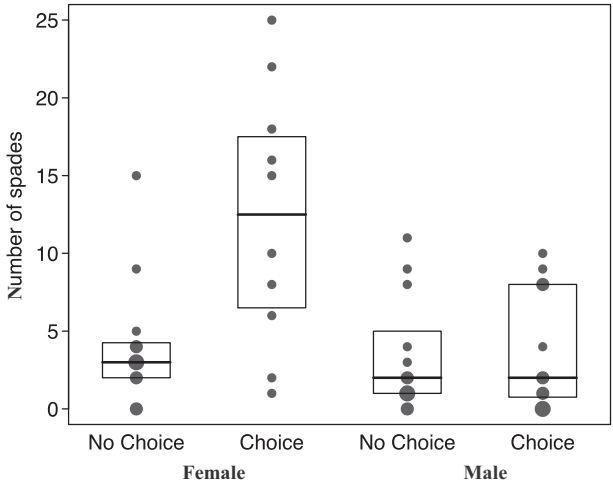

Fig. 3. Numbers of spades that 5-year-olds cleaned up, separated by condition and gender. Data points are depicted by dots, with bigger dots representing more data points. Each box represents a quantile. Horizontal lines within quantiles represent medians.

provided with choice. Boys helped to clean up an average of 3.75 spades when provided with choice, compared with 3.50 spades when instructed to help.

However, a different pattern emerged for the 3-year-old children. The provision of choice had no effect on girls' helping behavior ($b = -0.14$, $p > .05$). Boys helped marginally longer when they were instructed to help ($b = 0.73$, $p = .078$) (see Fig. 4). On average, 3-year-old girls cleaned up 5.08 spades when provided with choice, compared with 4.42 spades when instructed to help. Boys helped to clean up an average of 3.00 spades when provided with choice, compared with 4.50 spades when not provided with choice.

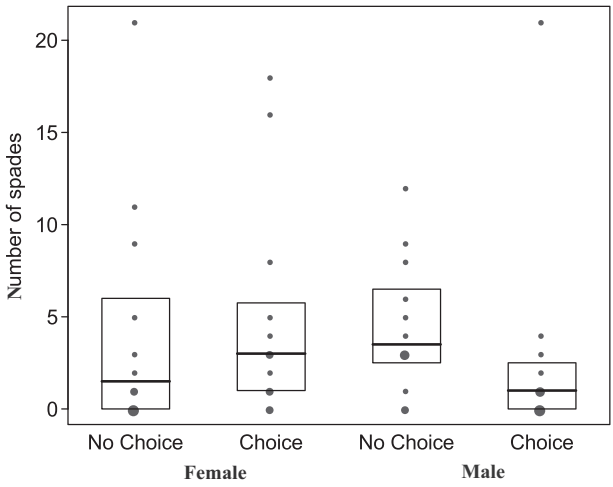

Fig. 4. Numbers of spades that 3-year-olds cleaned up, separated by condition and gender. Data points are depicted by dots, with bigger dots representing more data points. Each box represents a quantile. Horizontal lines within quantiles represent medians.

Discussion

The current study explored the effect of choice on 3- and 5-year-old children's prosocial behavior. Specifically, we investigated (a) whether the provision of choice increases young children's motivation to help and (b) whether the effects are different for 3-year-olds compared with 5-year-olds. Results indicate that providing children with choice has a different effect on the two age groups studied. For 5-year-olds, having choice had a positive effect on their prosocial motivation. The 5-year-olds helped significantly more when they freely decided to do so compared with when they were instructed to help. In addition, the effect was strongest for 5-year-old girls. For boys, we found a marginal positive effect. In contrast, we found no such positive effect of choice on 3-year-olds' prosocial behavior.

The observed positive effect of choice on 5-year-olds' prosocial behavior aligns with earlier research. Previous work shows that preschoolers take freedom of choice into consideration when they evaluate others' immoral behavior (Josephs et al., 2016) as well as when they reflect on their own moral behavior (Chernyak & Kushnir, 2014). In addition, previous findings indicate that freely choosing a prosocial action influences preschoolers' sharing behavior in a subsequent task (Chernyak & Kushnir, 2013). The current results build on and extend these findings by demonstrating that freedom of choice exerts a strong immediate effect on children's motivation to help. It is important to note that we contrasted the choice condition with a particularly telling no-choice control condition in which children were instructed by an authority to help.

The provision of choice did not increase the prosocial behavior of 3-year-old children. Previous research on preschoolers' understanding of choice and its implications for prosocial behavior has focused on 4-year-old children. The contrast in behavior between age groups raises the question of what developmental changes account for the difference between the younger and older children. One potential explanation is that 3-year-olds have limited experience with free choices in the prosocial domain. Children at this age might be more used to authority figures directing prosocial behaviors. As a consequence, young children might be less sensitive than older children to the provision of choice in this context. In addition, as suggested by findings reviewed in the Introduction, 3-year-olds might simply not yet have developed a fully fledged concept of choice.

Another explanation for the difference between 3-year-olds and 5-year-olds could lie in their ability to control their impulses. Compared with older children, 3-year-olds possess less advanced inhibitory control (Carlson & Moses, 2001; Herrmann, Misch, Hernandez-Lloreda, & Tomasello, 2015;

Kochanska, Murray, & Coy, 1997). In the current study, children helped to clean up while an adult played with an attractive game. Helping a conspecific in need in the face of an attractive alternative option clearly requires sustained inhibitory control. Consequently, a failure to inhibit the impulse might have overridden any effect of having choice in the younger children.

Among 5-year-old children, in contrast to 3-year-old children, there was an effect of choice. We found that this effect was stronger for girls than for boys. What might account for this gender difference? One explanation could be that girls at this age exhibit greater inhibitory control. Indeed, in previous studies, girls outperformed boys in inhibitory control tasks (Carlson & Moses, 2001; Kochanska et al., 1997). Boys with less advanced strategies to control impulses could have had difficulties in suppressing the impulse to play when provided with choice and therefore helped less.

Moreover, making choices is an act of self-expression (Kim & Drolet, 2003). By choosing certain actions over others, we reveal ourselves—our values, identities, and roles (Korsgaard, 2009). This link between a free choice and a conception of self is highlighted in the current setup. The choice condition emphasized that helping or not helping was the child's decision. The decision to engage in a prosocial act was framed as a personal matter, and the self became involved. The extent to which being prosocial constitutes an important part of one's self differs from individual to individual, but it is also influenced by other factors, for example, gender and the way in which girls and boys are socialized. Expectations placed on boys and girls are very different in many domains, including the prosocial and moral domains. Compared with boys, girls are often characterized as more caring and empathetic. As they grow older, children begin categorizing themselves as boys and girls. At the same time, they learn about gender attributes and roles and start applying them to themselves (Bussey & Bandura, 1999). In fact, and in line with this interpretation, children describe girls as more prosocial and boys as more physically aggressive starting at 5 years of age (Heyman & Legare, 2004). Consequently, if girls perceive themselves as more prosocial (due to socialization processes), it could well be that they act accordingly, especially when their action is freely chosen and thus linked to who they are and how they see themselves. Naturally, this explanation of the observed gender effect is post hoc, and further research is needed to elucidate the mechanisms responsible for the difference.

Choice constitutes a fundamental value of Western society. It has been argued that the positive impact of choice on intrinsic motivation is tightly linked to the importance of individualism in a society (for a meta-analysis, see Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). Because choice is a way of expressing one's self (Iyengar & Lepper, 1999), it plays a crucial part in intrinsic motivation in individualistic cultures. There is reason to believe that individual choices play a less important, if not negligible, role in collectivist cultures. For instance, in a study by Kim and Drolet (2003), having choice had no impact on Asian American school children's intrinsic motivation. In contrast to Anglo American school children, Asian Americans' intrinsic motivation was highest when choices were made for them by an authority figure. Therefore, we stress that our results apply to children growing up in Western culture and provide a basis for future cross-cultural studies investigating the effect of choice on children's prosocial motivation in more collectivist cultures.

Taken together, the current study is, to our knowledge, the first investigation directly comparing young children's prosocial motivation for prescribed versus freely chosen prosocial actions. From an applied perspective, and during times of talk of "helicopter parents," the current results stress that making and experiencing prosocial choices represents an important part of children's development and might be positively linked to children's prosocial motivation.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jecp.2017.01.004.

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