

Giving Preschoolers Choice Increases Sharing Behavior

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Abstract

Young children are remarkably prosocial, but the mechanisms driving their prosociality are not well understood. Here, we propose that the experience of choice is critically tied to the expression of young children's altruistic behavior. Three- and 4-year-olds were asked to allocate resources to an individual in need by making a costly choice (allocating a resource they could have kept for themselves), a noncostly choice (allocating a resource that would otherwise be thrown away), or no choice (following instructions to allocate the resource). We measured subsequent prosociality by allowing children to then allocate new resources to a new individual. Although the majority of children shared with the first individual, children who were given costly alternatives shared more with the new individual. Results are discussed in terms of a *prosocial-construal hypothesis*, which suggests that children rationally infer their prosociality through the process of making difficult, autonomous choices.

Keywords

prosocial behavior, choice, cognitive development, preschoolers, altruism, morality

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People very rapidly acquire remarkable prosocial tendencies. By the 2nd to 3rd year of life, children help others achieve their goals (Warneken & Tomasello, 2006), share toys (Schmidt & Sommerville, 2012; Svetlova, Nichols, & Brownell, 2010), sympathize with those who are harmed (Vaish, Carpenter, & Tomasello, 2009) or in distress (Zahn-Waxler, Radke-Yarrow, & Wagner, 1992), and punish those who harm others (Dunfield & Kuhlmeier, 2010; Vaish, Carpenter, & Tomasello, 2010; Vaish, Missana, & Tomasello, 2011). But how children acquire such tendencies remains an understudied empirical question. In the research reported here, we explored the possibility that having and making choices encourages young children's prosocial behavior.

One potential mechanism for the expression of prosocial behavior is through past experience with prosocial action (e.g., Staub, 1971). Work on self-perception theory and the foot-in-the-door effect with both adults (see Beaman, Cole, Preston, Klentz, & Steblay, 1983; Bem, 1967) and older children (e.g., Eisenberg, Cialdini, McCreath, & Shell, 1987; Lepper, 1973) has suggested that individuals are likely to act in congruence with their past actions because of a desire to stay self-consistent. Thus,

through acting prosocially, children may be forming a cognitive representation of what "the self" is like and acting in accordance with that representation (Freedman & Fraser, 1966; Grusec, Kuczynski, Rushton, & Simutis, 1978; Grusec & Redler, 1980).

However, children evaluate their actions not simply on the basis of their occurrence but also on the basis of the contexts in which they occur. In an important study by Warneken and Tomasello (2008), toddlers were given material rewards, social praise, or no rewards at all for performing the target prosocial action of helping an adult obtain an out-of-reach object. Although most children initially helped, only those children who were given no reward at all or social praise continued to help the adult at subsequent time points in the absence of rewards. Children thus used context as an indicator of how desirable their actions were: Those who were materially rewarded inferred that they performed the prosocial

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behavior solely in order to obtain the reward, whereas those who were not materially rewarded inferred that they performed the prosocial behavior for its own intrinsic purpose (Lepper, Greene, & Nisbett, 1973).

We explored another important context: that of choice. Choice differs from action in that it involves the contrast between actions performed and alternative actions not performed. For example, a person would evaluate Bob, who gave his last \$5 to charity but could have kept it for himself (i.e., he had an alternative), differently—more positively—than he or she would evaluate Jim, who accidentally dropped his last \$5 into the hands of a homeless person (i.e., he had no alternative). People also go beyond evaluating choice in absolute terms (having vs. not having choice) and consider the costliness of the choice. To extend the above example, a person would consider Bob more generous if his choice was to give away his last \$5 than if his choice was to give away \$5 out of a total of \$100. Thus, both the presence and the costliness of choice influence how we evaluate others.

To our knowledge, no other study has addressed whether choice plays a causal role in young children's prosocial behavior. There is some evidence that by middle childhood, having choice as compared with having no choice (being directly instructed to do something) is implicated in children's prosocial behavior (Grusec et al., 1978; McGrath & Power, 1990; McGrath, Wilson, & Frassetto, 1995). There are also correlations between the maturity of young children's moral-reasoning abilities and children's ability to make costly prosocial choices (Eisenberg & Shell, 1986; Eisenberg, Shell, et al., 1987), indicating a potential causal link between costly choices and subsequent moral behavior. We asked whether making personally costly choices increases young children's prosociality. Specifically, we hypothesized that the contrast between actions chosen and alternative actions not chosen influences children's behavior above and beyond the prosociality of the actions themselves.

Across two studies, we allowed preschool-aged children (3- to 4-year-olds) to perform a prosocial action: allocating a limited and desired resource to a puppet who was feeling sad. We systematically manipulated the presence and type of alternative actions. In some cases, the alternative action created a choice that was particularly appealing (i.e., a costly choice: children could keep the resource for themselves); in other cases, the alternative action created a choice that was neutral (i.e., a non-costly choice: the resource could be thrown away), or there was no alternative (i.e., no choice: children were instructed to allocate the resource). We were interested in how the presence of these alternative actions affected children's subsequent prosociality. We measured children's prosociality by allowing them to then engage in a new prosocial action toward a different puppet.

Experiment 1a

In Experiment 1a, children were presented with an attractive and limited resource: one star sticker that they could give to a puppet ("Doggie") who was described as feeling sad. We manipulated the children's experience of choice by allowing them to make a costly choice (give the sticker to Doggie instead of keeping it for themselves), a noncostly choice (give the sticker to Doggie instead of having the experimenter put the sticker away), or no choice (follow instructions to give the sticker to Doggie). Children's actions toward Doggie were recorded. We then measured subsequent prosociality: All children were introduced to a new puppet ("Ellie") who they were told was also feeling sad and were given three smiley-face stickers that they could either keep for themselves or share with Ellie.

Method

Participants. Seventy-two preschool-aged children (mean age = 3.96 years, age range = 2.85–4.98 years) participated. Conditions were fully balanced for age and gender (50% females, 50% males; 50% children below age 3, 50% children above age 3). One child was replaced because of parental interference. Participants were recruited from a local school or children's museum and were predominantly European American.

Materials. Materials were two 11-in. × 5-in. × 7.5-in. plush puppets (Doggie and Ellie); three 5-in. × 3-in. × 3-in. wooden boxes—Doggie's box, Ellie's box, and the child's box (Doggie's box and Ellie's box had pictures of Doggie and Ellie, respectively, on the tops and insides, whereas the child's box contained no pictures); and a set of small star and smiley-face stickers. A schematic of materials and procedure is shown in Figure 1.

Procedure.

Introduction. Children were seated at a table, shown a plush animal named "Doggie," and told that Doggie was feeling "very sad today." Doggie was then put away. A toy box was placed on the table and introduced as "Doggie's box."

Choice manipulation. All children were induced to act prosocially. However, we varied the alternative option across three between-subjects conditions. In the *costly-choice condition*, children were presented with the choice of either keeping the sticker for themselves or giving it to Doggie. In the *noncostly-choice condition*, children were presented with the choice of putting the sticker away or giving it to Doggie. Finally, in the *no-choice condition*, the same two alternatives were presented as in the

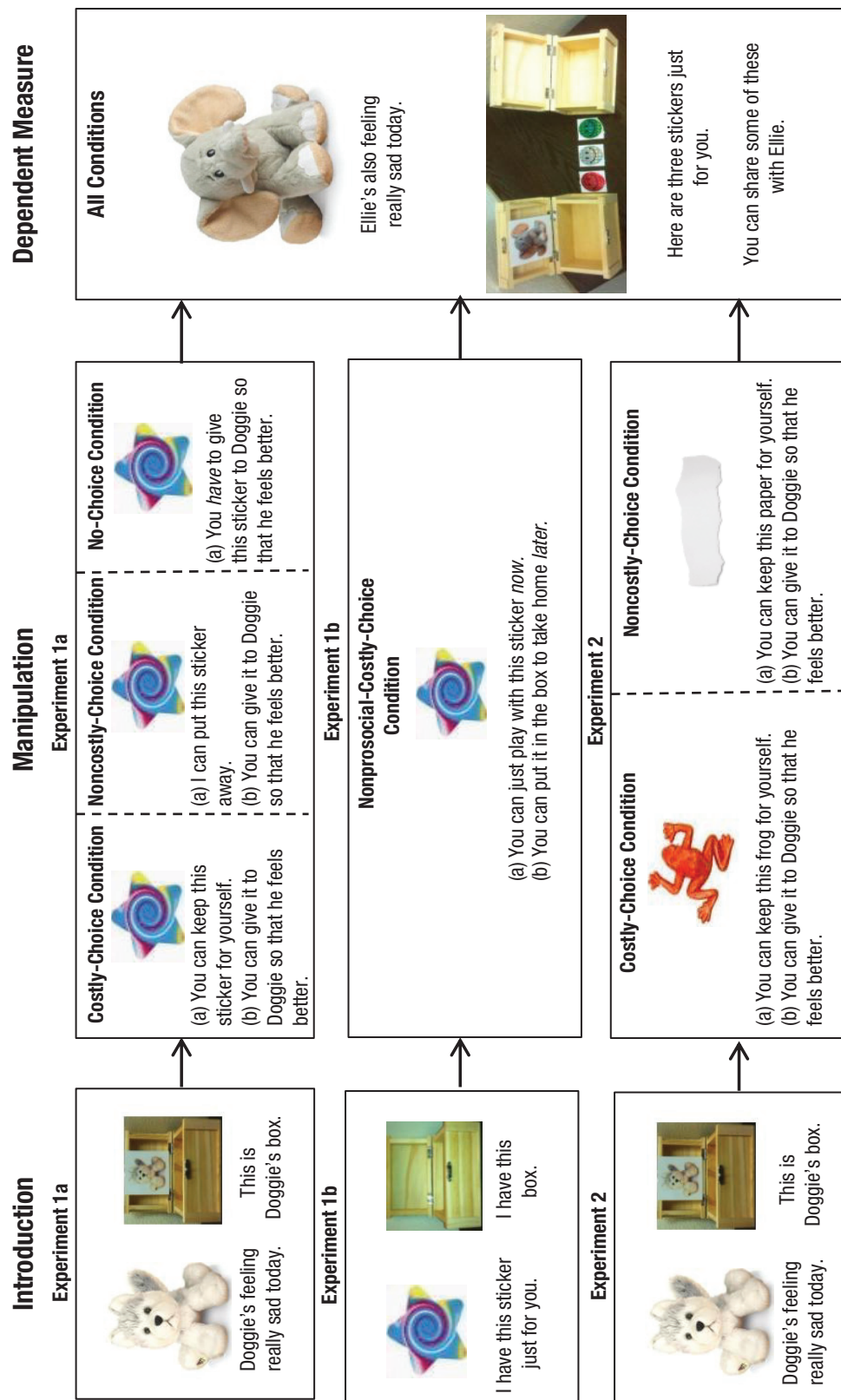


Fig. 1. Design of the three experiments. The leftmost column depicts the two items initially shown to the children in each experiment and the experimenter's statements about the items. The middle column shows the items and choices presented to children in each condition of each experiment. The rightmost column depicts the dependent-measure phase of each experiment, in which children were shown a puppet and given the opportunity to engage in prosocial action toward it.

costly-choice condition (“I’m going to tell you whether you get to keep this sticker for yourself or you have to put it in the box for Doggie so that he feels better”), but children’s actions were restricted by experimenter instruction (“This star sticker, you *have* to put in the box for Doggie so that he feels better”). Across all conditions, once children made their final choices, the experimenter said “Good job!” and put the toy box away.

Dependent measure. A new puppet was shown (“Ellie”), and children were told that Ellie was also feeling sad. Ellie was then put away, Ellie’s box was presented along with a second (plain) box on the table, and three smiley-face stickers were placed between the two boxes. The positioning of the two boxes was counterbalanced across participants. The experimenter next said that the three smiley-face stickers were for the child but that Ellie also “really liked” them. We used three stickers to force children to create an uneven distribution (either to prioritize themselves or to prioritize Ellie).

After counting the stickers, the experimenter said that the child could either keep all of the stickers and put them in the plain box or share some with Ellie and put them in Ellie’s box. The experimenter reminded the child whose box was whose by relabeling the boxes and stating to the child that he or she could put some stickers in either one. Repeated prompts were used if children left any stickers on the table (e.g., “And what do you want to do with that one?”) until a box was chosen for each sticker.

Coding. All data were videotaped with the exception of data from 5 children whose parents did not provide video consent and whose actions were transcribed by an assistant. All videos were coded by the first author and a condition-blind research assistant for number of stickers given to Ellie. Interrater reliability was 100%.

Results and discussion

Preliminary analyses revealed no effects of age or gender in any of the experiments, so data were collapsed across these variables. We first analyzed children’s initial prosocial responses: The majority of children chose the prosocial action over the nonprosocial alternative: 19 of 24 participants in the costly-choice condition, 23 of 24 participants in the noncostly choice condition, and 23 of 24 participants in the no-choice condition (all binomial p s < .01).¹

Next, we analyzed children’s prosocial actions subsequent to the choice manipulation. Because comparisons across conditions relied on the children’s having performed the same initial prosocial action, we examined data for the children who performed the initial prosocial action.²

The majority (75%) of children gave at least one sticker to Ellie and kept at least one for themselves, which suggests that they were motivated both to keep stickers and to share them. Children were thus divided into two response groups based on whether they distributed the stickers unequally in favor of themselves or in favor of Ellie: the *other-prioritizing* group (in which children gave the majority of their stickers to Ellie—usually two and occasionally three stickers) and the *self-prioritizing* group (in which children gave the minority of their stickers to Ellie—usually one sticker and occasionally none). A higher proportion of children made an other-prioritizing response in the costly-choice condition than in the no-choice condition (Fisher’s exact test, $p < .05$; see Fig. 2), which suggests that having a choice influenced children’s subsequent sharing. The cost of the choice also affected sharing: A higher proportion of children who made the initial costly choice than children who made the noncostly choice were other-prioritizing (Fisher’s exact test, $p < .01$). Making a noncostly choice did not increase subsequent sharing relative to being instructed to share, $p > .15$.

The results of Experiment 1a thus provided initial evidence that having made a costly choice to perform a prosocial action (sharing) increased children’s later prosocial behaviors. It remained unclear, however, whether making a costly choice for prosocial reasons, specifically, affected children’s prosocial behavior. Choosing to share the sticker may have affected children’s responses simply because they made the costly choice of inhibiting their own desire to take the sticker. In Experiment 1b, we sought to resolve this issue by asking children to make a costly choice (involving desire inhibition) in a nonprosocial context.

Experiment 1b: Nonprosocial-Costly-Choice Condition

The procedure of Experiment 1b largely followed that of Experiment 1a. However, instead of being introduced to Doggie, children were simply shown a star sticker and asked to make a choice to either play with the sticker immediately or forgo playing with it for the moment but be able to keep it by placing it in the wooden box to take home later. After children had made the choice, the rest of the experimental procedure followed that of Experiment 1a: Children were shown the puppet Ellie and asked to split three stickers.

Method

Participants. Twenty-four preschool-aged children (mean age = 3.88 years, age range = 2.87–4.98 years) participated. Age and gender were fully balanced. Participants were recruited from a local school or children’s

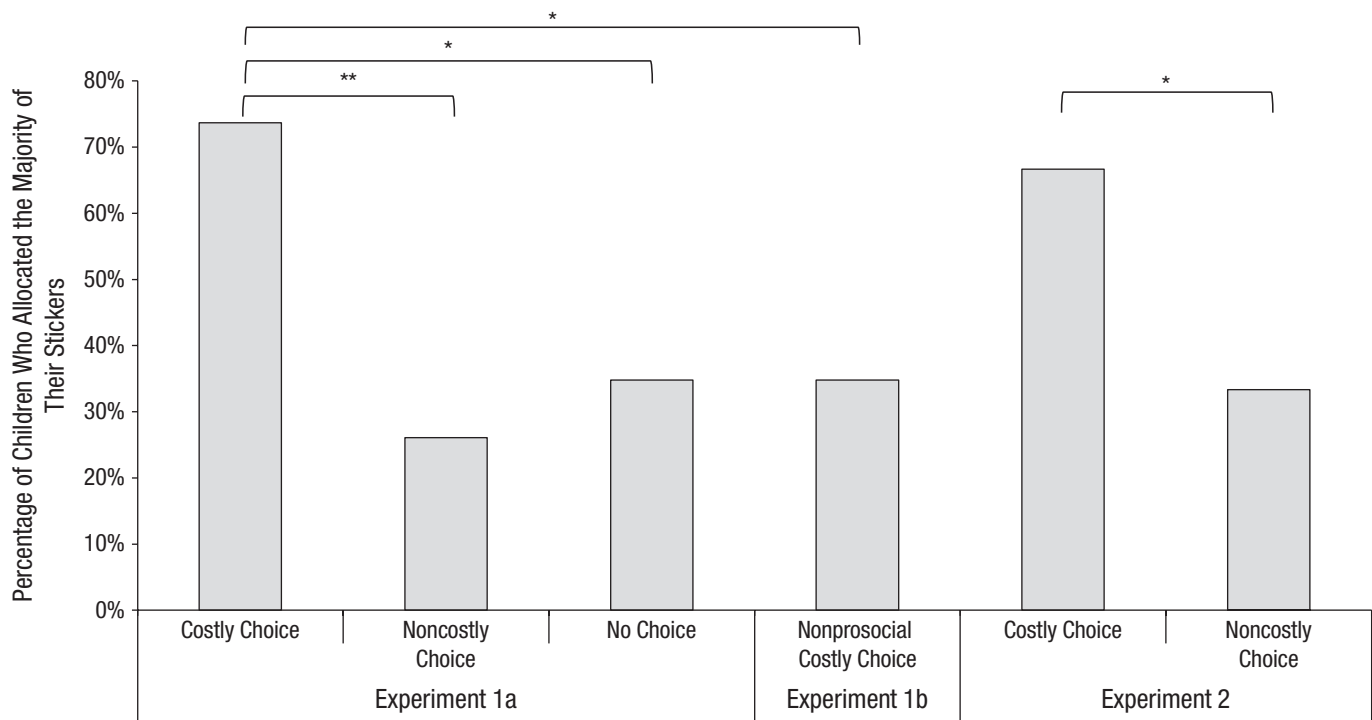


Fig. 2. Results for the dependent-measure phase of all experiments: mean percentage of children who allocated the majority of their stickers to the puppet in each condition of each experiment. Asterisks indicate significant differences between conditions (* $p < .05$, ** $p < .01$).

museum and were predominantly European American. One child was replaced because she did not understand English.

Materials. Materials were identical to those used in Experiment 1a except for the first puppet (Doggie), which was not used.

Procedure. The procedure largely followed that of Experiment 1a, with the following modifications: Instead of being introduced to Doggie, children were simply shown a star sticker and a plain wooden box (“I have this star sticker here, and I have this box”). Children were then given a choice to either play with the sticker immediately or place it in the plain wooden box to keep and take home later (“You get to choose—you can either just play with the sticker now, or you can put it in the box and get to keep it for later”). The dependent measures were the same as those used in Experiment 1a.

Coding. Coding followed that of Experiment 1a. Once again, all children were videotaped, with the exception of 2 children whose parents did not provide video consent. Interrater reliability was 100%.

Results and discussion

Once again, the majority of children (23 of 24) chose the initial target action of placing the sticker in the box,

inhibiting their immediate desire in order to keep the sticker (binomial $p < .001$). A significantly smaller proportion of children in Experiment 1b than of children in the costly-choice condition of Experiment 1a made the other-prioritizing choice (Fisher’s exact test, $p < .05$), which suggests that children’s sharing behaviors were impacted by initial practice with costly choices in a prosocial context and not just by the cost of not getting to have the stickers immediately. This condition did not differ from the non-costly-choice and no-choice conditions (both $ps > .15$).

The results thus far suggested that making a prosocial choice at a personal cost causes children to continue to be prosocial when faced with a new choice. Why might this be the case? One possibility is that, by observing their costly choices, children inferred their own prosociality.

This explanation is consistent with traditional self-perception theories (Bem, 1967, 1972), which predict that people learn about their own preferences from observing their past actions. There are, however, at least two alternative explanations, also consistent with self-perception theory, which consider the actions but do not take into account whether the action was a choice (i.e., whether it involved alternatives). One possibility is that the initial costly choice may have led children to believe that they had exhibited their dislike for the object (e.g., “I shared the sticker, so I must not like stickers”). Another possibility is that the initial costly choice caused children to simply repeat the initial outcome of distributing more to another than to themselves, either as a result of being

primed with the concept of giving more to others or because of a desire to stay self-consistent in front of the experimenter (see Eisenberg, Cialdini, et al., 1987).

Experiment 2

Experiment 2 was designed to rule out the possibilities left open by Experiments 1a and 1b. Procedures mirrored those of Experiment 1a's costly-choice condition, with the following modifications. Children were once again introduced to the first puppet, Doggie. This time, however, in the costly-choice condition, children were given a colorful rubber toy frog rather than a star sticker. In the noncostly-choice condition, children were given a small piece of torn white paper. All children were told they could choose to either keep the object for themselves or give it to Doggie. The dependent measure (and the new puppet, Ellie) remained the same.

It is important to note that unlike in Experiment 1a, the objects used in the choice manipulation (either a frog or a piece of paper) and in the dependent measure (smiley-face stickers) were different. Thus, any increased tendencies to share stickers during the dependent-measure phase could not be attributed to children's inferences about their preference (or lack thereof) for stickers. Additionally, the choice manipulation of both the costly-choice and noncostly-choice conditions of Experiment 2 required children to undertake the same prosocial action of giving an object to Doggie, controlling for the possibility that initial practice with giving objects causes children to simply continue giving more to others than to themselves.

Method

Participants. Forty-eight preschool-aged children (mean age = 3.91 years, age range = 2.81–4.96 years) participated. Age and gender were fully balanced across conditions. Participants were recruited from a local school or children's museum and were predominantly European American. Four children were replaced: 3 because of experimental error and 1 because of prior participation.

Materials. Materials were identical to those used in Experiment 1a except that a set of colorful toy frogs and plain torn pieces of paper (each about 1 in. in length) were used during the introduction instead of star stickers.

Procedure. The procedure largely followed that of Experiment 1a, with the following modifications. In the costly-choice condition, children were given an attractive object (a colorful toy frog) instead of a star sticker. All children were then told they could either keep the frog or give it to Doggie. In the noncostly-choice condition,

children were given a small torn piece of paper and told they could either keep it or give it to Doggie. The dependent measures and the new puppet (Ellie) were the same as those used in Experiments 1a and 1b.

Rating study. In order to make sure that we were justified in our assumption that the choice involving toy frog would be costlier for children than the choice involving the piece of paper, we showed an additional sample of 20 children (mean age = 3.87 years, age range = 2.84–4.84 years; 11 female, 9 male) the torn paper and the toy frog and asked them to point to the one they liked more. The positioning of the two objects was counterbalanced.

Coding. Coding procedures followed those used in Experiment 1a. Interrater reliability was 98%.

Results and discussion

Nineteen of the 20 children in the independent sample preferred the frog (binomial $p < .001$) over the paper. We thus confirmed our assumption that giving away the toy frog was a costlier choice than was giving away the piece of paper. Once again, the majority of children in both the costly-choice condition (21 of 24 participants) and the noncostly-choice condition (24 of 24 participants) chose the prosocial option (giving the object to Doggie) over the nonprosocial alternative (binomial $ps < .01$).

Of the children who were initially prosocial, a higher proportion performed other-prioritizing prosocial behaviors in the costly-choice condition than in the noncostly-choice condition (Fisher's $p < .05$), demonstrating once again that costly choices led to greater subsequent sharing behaviors.

Moreover, we confirmed that children's prosociality in Experiment 1a could not be explained by children's making inferences about their own lack of preference for stickers: Children in the costly-choice condition of Experiment 2 shared at nearly the exact same rate as did those in the costly-choice condition of Experiment 1a (74% made the other-prioritizing choice in Experiment 1a vs. 66% in Experiment 2; Fisher's exact test, $p > .15$). Similarly, we ruled out the possibility that children in Experiment 1a simply repeated the outcome of having fewer objects than another agent: Children in both conditions of Experiment 2 initially shared an object (and thus had fewer objects than Doggie did), but children nonetheless shared at different rates across the two conditions.

General Discussion

We began this article with the hypothesis that giving children opportunities to make costly prosocial choices plays an important role in their subsequent prosocial behavior.

In fact, children were more prosocial after making costly choices relative to noncostly choices (Experiment 1a), after making choices in a prosocial context relative to a nonprosocial context (Experiment 1b), and after sharing valuable objects relative to nonvaluable objects (Experiment 2). Together, the results strongly support the idea that even very limited experience with making costly choices affects young children's prosociality.

Our findings are consistent with self-perception theory (see Cialdini, Eisenberg, Shell, & McCreath, 1987; Grusec et al., 1978): In making costly prosocial choices, children construe their actions as a signal of their prosociality (e.g., "I shared, so I must like to share"). Our results are also consistent with prior developmental findings that children show longitudinal consistency in the display of high-cost sharing behaviors (Eisenberg et al., 2002; Eisenberg et al., 1999), and that high-cost prosocial behaviors are systematically correlated with mature moral judgment (Eisenberg & Shell, 1986). We propose that *prosocial construals* may also motivate early prosocial behavior. This prosocial-construal hypothesis suggests that even before children make sophisticated prosocial-trait inferences about themselves, they evaluate their actions in the context of nonchosen alternatives. Such evaluations may be one mechanism by which later self-perceptions emerge.

The pattern of results found is particularly notable when considering the competing influences that could have affected children's subsequent prosocial behaviors toward the new puppet. First, making costly choices could have cognitively depleted children, such that they would have been unlikely to repeat the prosocial behavior later on (see Muraven & Baumeister, 2000). On a physiological level, children could have been taxed by the initial behavior of giving up an otherwise desired object to the first puppet, and on a cognitive level, children could have felt that they had already acted prosocially once and thus did not need to "prove themselves" again (see work on moral self-licensing theory; Merritt, Effron, & Monin, 2010). We found, however, that this was not the case. Second, children overcame a potential novelty bias: In the costly-choice condition of Experiment 2, the majority of children gave most of their stickers to Ellie, despite the fact that stickers were now a novel (and, therefore, particularly appealing) object. Children were not simply motivated to do what an adult authority figure asked them to do: Following experimenter instruction in the no-choice condition could have set an implicit social norm (Rakoczy, Warneken, & Tomasello, 2008) or implied that being prosocial was the "rule." Children in this condition, however, were less prosocial than were those in the costly-choice conditions, in which no potential rule was relayed. Together, these results show that children's initial practice with costly choices was a particularly salient manipulation, even when competing against other potential biases.

Further work could focus on the specific features of costly-choice situations that enable children's subsequent prosocial behavior. The children in our experiments may have been affected specifically by the emotional valence of the cost. If this is the case, we might expect them to have experienced greater emotional arousal in performing costly actions. It is also possible that the children were subconsciously attuned to their own pride in making a choice that was costly and were thus motivated to make themselves proud again by being prosocial. Yet another possibility is that in making a costly prosocial choice, the children actively self-regulated physiological arousal elicited by hearing about a sad puppet (Hepach, Vaish, & Tomasello, 2012). The coordination of setting goals and watching themselves effectively self-regulate in order to meet those goals may have empowered children to repeat the self-regulatory prosocial behavior later on (Grolnick, 2009). Investigations into all of these possibilities may inform our understanding of how children encode and remember costly- and noncostly-choice situations.

The specific nature of the learning process that may occur during costly-choice situations is another important issue. It is important to note that prior work has found that children do not exhibit trait stability until middle childhood (e.g., Eisenberg, Cialdini, et al., 1987; Grusec & Redler, 1980). For this reason, we propose that it is unlikely that in making costly choices, the young children in our study inferred that they had a stable dispositional trait (e.g., "I shared, so I must be the *type* of person who shares"). Instead, they may have made a more subtle inference: Children may be learning about their own abilities to be prosocial, their own preference to help others, or their own intentions.

Our results also have underlying implications for children's moral development (e.g., Eisenberg et al., 1999). It will be important for future work to determine the scope of influence that costly choices have on the development of prosocial behavior. Moral self-construction is likely to be the product of a rather complicated process involving emotional, behavioral, and cognitive components (Blasi, 1983; Hardy & Carlo, 2011; Kochanska, 2002). Our findings show that costly choices play a causal role in determining the short-term prosocial behavior of very young children. Although more research is needed to investigate how choice interacts with other components of moral development, demonstrating the short-term results underscores previous findings that choice may make a critical contribution to children's emerging understanding of themselves as moral beings.

Author Contributions

N. Chernyak designed the experiments, collected and coded the data with help from research assistants, analyzed the data, and wrote the first version of manuscript. T. Kushnir contributed to the design of experiments and cowrote the manuscript.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

Notes

1. One child in the no-choice condition failed to comply with the experimenter's request.
2. Results remained nearly identical when we analyzed the full data set (including data from children who did not make the prosocial choice). For details, see Analyses of Full Data Set and Table S1 in the Supplemental Material available online. See also Analyses of Number of Stickers Allocated Across Conditions and Table S2 in the Supplemental Materials for comparisons of the number of stickers allocated to Ellie across conditions.

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