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<https://doi.org/10.1177/0956797613482335>

Giving preschoolers choice increases sharing behavior

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This work was supported by a Cornell Cognitive Science Fellowship to NC. We would like to thank Christina Bryce and Bertilia Trieu for assistance with data collection; Kelly Yang, Chelsea Brite, Andrew Strauss, Lauren St. Victor, and Emily Hayko for assistance with creating condition-blind video clips and coding; the Ithaca Sciencenter museum and participating preschools; Mark Fedyk, Matt Tymann, and Yue Yu for helpful suggestions on an earlier draft.

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Keywords: prosocial behavior, choice, cognitive development, preschoolers, altruism

Revision Submitted: February 2, 2013

Word Count: 3,997

Abstract

Young children are remarkably prosocial, but the mechanisms driving 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 either making a Costly Choice (allocating a resource they could have kept for themselves), Non-Costly Choice (allocating a resource that would otherwise be thrown away), or No Choice (instructed to allocate the resource). Subsequent prosociality was then measured by allowing children to then allocate new resources to a new individual. While the majority of children helped the first individual, children who were given costly alternatives were more likely to share resources 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.

Abstract Word Count: 148

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People very rapidly acquire remarkable prosocial tendencies. By the second to third year of life, children help others complete their goals (Warneken & Tomasello, 2006), share toys (Schmidt & Sommerville, 2008; Svetlova, Nichols, & Brownell, 2010), sympathize with those who are harmed (Vaish, Carpenter, & Tomasello, 2009) or are 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. Here, we explore 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 both with adults (see Beaman, Cole, Preston, Klenty, & Steblay, 1983; Bem, 1967), and older children (e.g., Eisenberg, Cialdini, McCreath, & Shell, 1987; Lepper, 1973) suggests 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).

Importantly, children evaluate their actions not simply by their occurrence, but also by the contexts under which they occur. In an important study by Warneken and Tomasello (2008), toddlers were given either 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 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).

Here we explore 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, I evaluate Bob, who gave his last \$5 to charity, but could have kept it for himself (had an alternative) differently – more positively – than Jim, who accidentally dropped his last \$5 into the hands of a homeless person (had no alternative). We also go beyond evaluating choice in absolute terms (having vs. not having choice) and consider degree of costliness of the alternatives. To extend the above example, I 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 his \$100. Thus, both the presence and the costliness of choice influence how we evaluate others.

No study to our knowledge has addressed whether choice plays a causal role in young children's own 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, Wilson, & Frassetto, 1995; McGrath & Power, 1990). There are also correlations between the maturity of young children's moral reasoning abilities and their ability to make costly prosocial choices (Eisenberg & Shell, 1986) indicating a potential causal link between costly choices and subsequent moral behavior. Here we ask whether making personally costly choices increases young children's prosociality. Specifically, we hypothesize 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 (3-4 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 magnitude of alternative actions. In some cases, the alternative action created a choice that was particularly appealing (i.e., costly - keeping the resource for themselves), in other cases the alternative action created a choice that was neutral (i.e., non-costly – throwing the resource away), or there was no alternative (i.e., no choice – being instructed to allocate the resource). We were interested in how the presence of these alternative actions affected children's subsequent prosociality. Prosociality was then measured by allowing children to then engage in a new prosocial action towards a different puppet.

Experiment 1

In Experiment 1, children were presented with an attractive, and limited resource: 1 star sticker that they could give to a puppet (“Doggie”) who was described as feeling sad. We manipulated children's experience of choice by allowing children to either make a **Costly Choice** (give the sticker to Doggie instead of keeping it for themselves), **Non-Costly Choice** (give the sticker to Doggie instead of having the experimenter put the sticker away), or **No Choice** (instructed to give the sticker to Doggie). Children's actions towards Doggie were recorded. We then measured subsequent prosociality: all children were introduced to a new puppet (“Ellie”) who was also feeling sad, and given three smiley face stickers that they could either keep for themselves or share with Ellie.

Method

Participants

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

Materials

Materials were two 11x5x7.5” plush puppets (“Doggie” and “Ellie”); three 5x3x3” wooden boxes: Doggie’s box, Ellie’s box (both of which had pictures on the tops and insides of Doggie and Ellie, respectively), and the child’s box (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 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 conditions. All conditions were presented between-subjects. 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 *Non-Costly 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 *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 then 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-faced stickers placed between the two boxes. The positioning of the two boxes was counterbalanced across participants. The experimenter then said that the three smiley-face stickers were for the child, but that Ellie also really liked them. The number three was chosen to force children to create an uneven distribution (either to prioritize themselves, or to prioritize Ellie).

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

Coding

All data was videotaped, with the exception of 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. Inter-rater reliability was 100%.

Results and Discussion

Preliminary analyses revealed no effects of age or gender for 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 non-prosocial alternative: 19/24 in the Costly Choice condition, 23/24 in the Non-Costly Choice condition, and 23/24 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 critically on children having performed the same initial prosocial action, we look at data for the children who performed the initial action.²

The majority (75%) of children gave at least one sticker to Ellie and kept at least one for themselves, suggesting that children were both motivated to keep stickers and also to share. Children were thus divided into two response groups based on whether they distributed unequally in favor of themselves or Ellie: *other-prioritizing* (giving the majority of stickers to Ellie – usually 2 and occasionally 3 stickers), and *self-prioritizing* (giving the minority of stickers to Ellie – usually 1 and occasionally 0 stickers). A higher proportion of children in the Costly Choice condition made an other-prioritizing response than those in the No Choice condition, Fisher's exact test $p < .05$ (see Figure 2), suggesting that having 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 were other-prioritizing than those who made the Non-Costly choice, Fisher's $p < .01$. Making a non-costly choice did not increase subsequent sharing over being instructed to share, $p > .15$.

The results of Experiment 1 thus provide initial evidence that having made a costly choice to perform a prosocial action (sharing) increased children's later prosocial behaviors. It remains unclear, however, whether making a costly choice for prosocial reasons, rather than simply a costly choice, affected children's prosocial behavior. In choosing to share the sticker, children's responses may have been affected simply by having made the costly choice of

inhibiting their own desire to take the sticker. In Experiment 1b, we sought to resolve this question by asking children to make a costly choice (desire inhibition) in a non-prosocial context.

Experiment 1b: Non-Prosocial Costly Choice Condition

The procedure largely followed that of Experiment 1. However, instead of being introduced to Doggie, children were simply shown a star sticker and asked to make a choice to either to play with the sticker now, or forego playing with it now but actually keep it by placing it in the wooden box to take home later. After making the choice, children were shown the new puppet, Ellie, and the rest of experimental procedure followed that of Experiment 1.

Method

Participants

Twenty-four preschool-aged children (*mean*: 3.88 years; *range*: 2.87– 4.98) participated. We fully balanced age and gender. Participants were recruited from a local school or children's museum, and were of predominantly European-American background. One child was replaced because she did not understand English.

Materials

Materials were identical to those in Experiment 1, but the first puppet (Doggie) was not used.

Procedure

The procedure largely followed that of Experiment 1, with the following modifications: Instead of being introduced to Doggie, children were simply shown a star sticker, and then, 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 *now*, 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 and new puppet (“Ellie”) was the same as in Experiment 1.

Coding

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

Results and Discussion

Once again, the majority of children (23/24) chose the initial target action of placing the sticker in the box, and inhibiting their immediate desire in order to keep the sticker (Binomial $p < .001$). A significantly smaller proportion of children in Experiment 1b made the other-prioritizing choice than children in the Costly Choice condition of Experiment 1, Fisher’s $p < .05$, suggesting 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 and No Choice conditions (both p ’s $> .15$).

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

The above 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., 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 due to a desire to stay self-consistent in front of the experimenter (see Eisenberg et al., 1987).

Experiment 2

Experiment 2 was designed to rule out these possibilities. Procedures mirrored those of Experiment 1’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 **Non-Costly Choice condition**, children were given a small white piece of torn 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 1, the objects used were different between the choice manipulation (which involved either a frog or piece of paper) and the dependent measure (which again involved smiley face stickers). 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 and Non-Costly 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 repeat the outcome of giving more to others than to themselves.

Method

Participants

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

Materials

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

Procedure

The procedure largely followed that of Experiment 1, 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 it or give it with Doggie. In the Non-Costly 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") was the same as in Experiments 1 and 1b.

Rating Study

In order to make sure that we were justified in our assumption that the toy frog would be a more costly choice than the piece of paper for children, an additional sample of 20 children (*Mean age*: 3.87 years, *range*: 2.84–4.84; 11 female) was shown the torn paper, and the toy frog, and asked to point to the one they liked more. The positioning of the two objects was counterbalanced.

Coding

Coding procedures followed that of Experiment 1. Inter-rater reliability was 98%.

Results and Discussion

An independent sample of 19/20 children confirmed that they preferred the frog (Binomial $p < .001$) over the paper. We thus justified our assumption that giving away the toy frog was a more costly choice than giving away the piece of paper. Once again, the majority of children in both the Costly Choice (frog) condition (21/24) as well as the Non-Costly Choice (paper) condition (24/24) chose the prosocial option (giving the object to Doggie) over the non-prosocial alternative (Binomial p 's $< .01$).

Of those who were initially prosocial, a higher proportion of children in the Costly Choice (frog) condition performed other-prioritizing prosocial behaviors than those in the Non-Costly Choice (paper) 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 1 could not be explained by the child 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 those in the Costly Choice condition of Experiment 1 (74% made the other-prioritizing choice in Experiment 1 vs. 66% in Experiment 2; Fisher's exact test $p > .15$). Similarly, we ruled out the possibility that children in Experiment 1 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), but children nonetheless shared at different rates across the two conditions.

General Discussion

We began this paper with the hypothesis that allowing 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 (Experiments 1) than non-costly choices, after making choices in a prosocial context than in a non-prosocial context (Experiment 1b), and after sharing valuable than non-valuable objects (Experiment 2). Together, the results strongly support the idea that even very limited experience 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., 1987; 1999; 2002), 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 non-chosen 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 towards 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 were already prosocial once, and thus did not need to “prove themselves” again (see work on moral self-licensing theory; Merritt, Effron, & Bonin, 2010). We found, however, that this was not the case. Second, children overcame a potential novelty bias: following 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 asked them to do: following experimenter instruction in the No Choice condition could have set an implicit social norm (Rakoczy, Warneken, & Tomasello, 2008), or an implication that being prosocial was the “rule”. Children in this condition, however, were less prosocial than those in the Costly Choice conditions, in which no potential rule was relayed. Together, these show that children’s initial practice with costly choices was a particularly salient manipulation, even when competing against other potential biases.

Further work may examine the specific features of costly choice situations that enable children’s subsequent prosocial behavior. Children may have been affected specifically by the emotional valence of the cost. If this is the case, we might expect children to have experienced greater emotional arousal in performing costly actions. It is also possible that 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, children actively self-regulated their own physiological arousal elicited by hearing about a sad puppet (Hepach, Vaish, & Tomasello, 2012). The coordination of setting goals and watching oneself effectively self-regulate in order to meet those goals may then have empowered children to repeat the self-regulatory prosocial behavior later on (Grolnick,

2009). All of these possibilities may inform how children encode and remember costly vs. non-costly choice situations.

The specific nature of the learning process that may occur during costly choice situations is also another important question. It is important to note that prior work has found that children do not show the concept of trait stability until middle childhood (e.g., Eisenberg et al., 1987; Grusec, & Redler, 1980). As such, we propose that it is unlikely that in making costly choices, the young children in our study inferred stable dispositional traits (e.g., “I shared so I must be the *type* of person who shares), but instead, may have made a more subtle inference. Children, instead, may be learning about their own abilities to be prosocial, their own preference to help others, or their own intentions.

These results also have underlying implications for children’s moral development (e.g., Eisenberg et al., 1999). It is 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. Though 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.

Footnotes

¹One child in the No Choice condition failed to comply with the experimenter's request.

²Results remain nearly identical when analyzing the full dataset (including children who did not make the prosocial choice). For details, see Supplementary Materials. See also Supplementary Materials for comparisons of number of stickers allocated to Ellie across conditions.

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Figure Legends

Figure 1. Schematic of experiment procedure and materials used. (a) and (b) represent the two choices provided to the child in each condition. Sticker and frog designs/colors were varied and randomly selected across participants. The side of Ellie's and the child's boxes (depicted in the rightmost panel) was counterbalanced across participants. See text for further details.

Figure 2. Results for all experiments. Asterisks indicate significant differences between conditions (*, $p < .05$; **, $p < .01$).

Figure 1

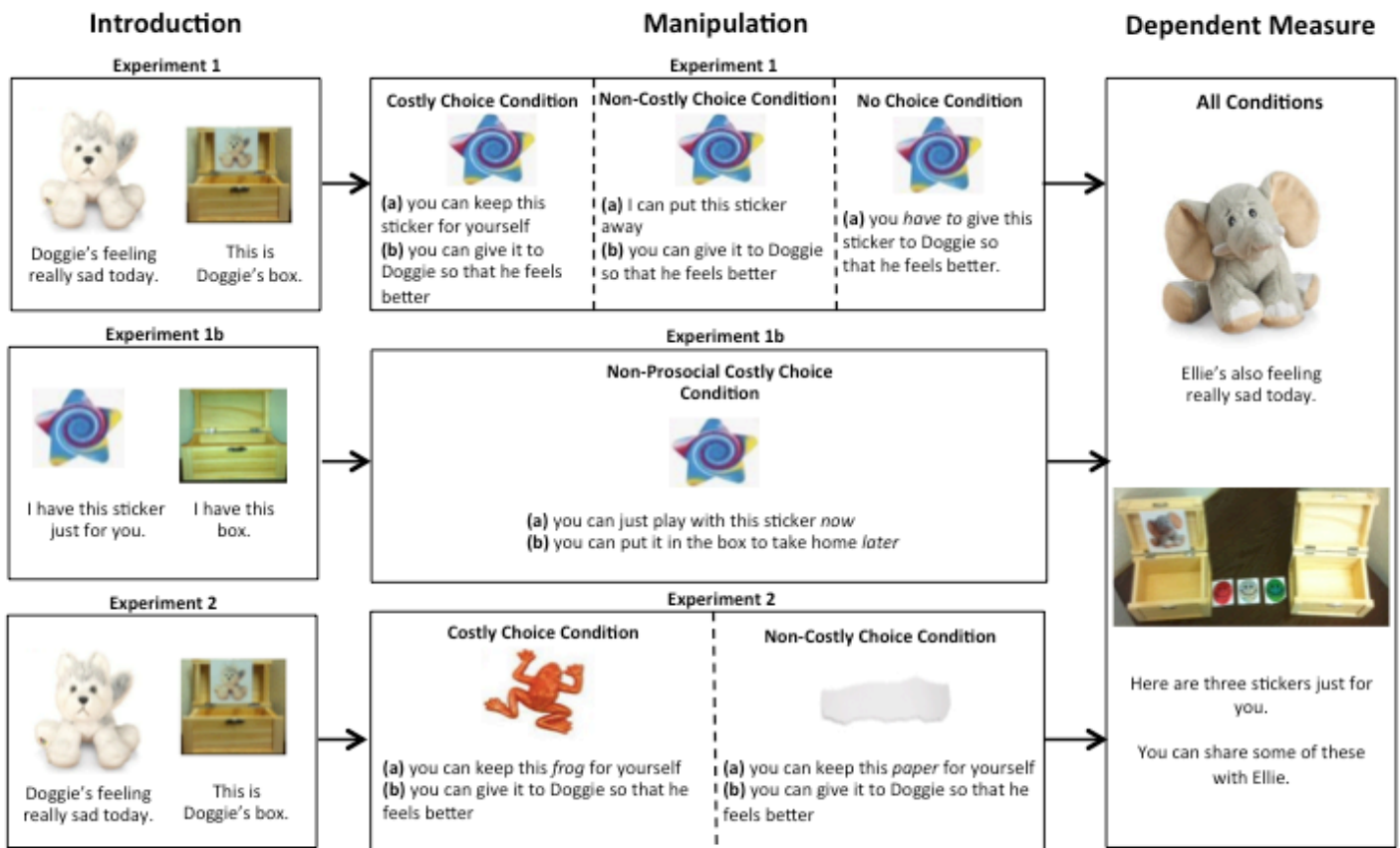


Figure 2

